

Integration of Information Technology in Islamic Education Learning: Opportunities and Challenges in the Digital Era

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Abstract

The integration of information technology in Islamic Education learning has become an important effort to improve the quality of the teaching and learning process in the digital era. The rapid development of technology provides opportunities for educators to utilize various digital media as more effective, interactive, and engaging learning tools for students. This study aims to analyze the opportunities and challenges in the implementation of information technology in Islamic Education learning. The method used in this study is a qualitative approach with a descriptive method through literature study and analysis of various sources relevant to the research topic, the results of the study indicate that the use of information technology provides various opportunities, such as increasing access to learning resources, enriching learning methods, and enhancing students' motivation and participation. However, several challenges are also encountered, including limited technological facilities and infrastructure, the low level of digital competence among some educators, and the potential misuse of technology by students. Therefore, appropriate strategies are needed to integrate information technology into Islamic Education learning, such as improving teachers' digital competencies, strengthening digital literacy, and utilizing technology while maintaining Islamic values. With proper integration, information technology can become an effective tool to support the development of Islamic Education in the digital era.

Keywords: Islamic Education, Information Technology, Globalization,

INTRODUCTION

The rapid development of information technology in the digital era has brought major changes in various areas of life, including education.¹ Information technology not only plays a role as a communication tool, but has also become an important tool in the learning process that

¹ Sultan Hammad Alshammari, "The Influence of Technical Support, Perceived Self-Efficacy, and Instructional Design on Students' Use of Learning Management Systems," Turkish Online Journal of Distance Education 21, no. 3 (2020): 112–141, <https://doi.org/10.17718/tojde.762034>.

can increase the effectiveness and efficiency of teaching and learning activities.²In the context of modern education, the use of information technology has become an unavoidable necessity, because it can provide wider access to various learning resources and create a more innovative and interactive learning process.

In Islamic education, the integration of information technology also plays a crucial role in supporting a learning process that is more relevant to current developments. Islamic education focuses not only on the transfer of religious knowledge but also aims to shape students' character and morals in accordance with Islamic values. Therefore, the use of information technology in Islamic education can be a means of delivering learning materials in a more engaging and understandable way, while also increasing student interest and motivation.

In today's digital era, various information technology-based platforms and media, such as learning apps, social media, instructional videos, and other digital learning resources, can be utilized in the Islamic education learning process. This technology can assist teachers in delivering material in a more varied manner and provide opportunities for students to learn independently through various online resources.

However, the integration of information technology into Islamic education also faces various challenges. These include limited technological facilities and infrastructure, a lack of digital competence among educators, and the potential negative impacts of uncontrolled technology use by students. Furthermore, the use of technology in learning must maintain adherence to Islamic educational values and principles to avoid compromising the essence and primary purpose of education.

The integration of information technology into Islamic education requires wise and strategic management to provide optimal benefits to the learning process. Therefore, a study of the opportunities and challenges in utilizing information technology in Islamic education is crucial. This study is expected to provide a more comprehensive understanding of how information technology can be effectively utilized to support the development of Islamic education in the digital era.

Information technology is the result of human engineering related to the processing and delivery of information from the sender to the recipient. Information technology is related to communication, where both aspects are related to technology and are related to communication, where both aspects are related to technology and are related to the retrieval, collection, processing, storage, distribution, and presentation of data or information.³

Information technology has a significant influence on modern developments and even drives change in various fields, one of which is education. By leveraging these advances in information technology, education can reach all levels of society. Education is not antipathetic or allergic to these scientific and technological developments, but rather, becomes a subject or a pioneer in their development.

Those involved in education are required to understand technology appropriately, as it will play a significant role in life today and in the future. The use of information technology can improve performance and enable various activities to be carried out quickly, precisely, and

² Mehrgan Heydari Hengami, Foroogh Faridi, and Farahnaz Kamali, "Monitoring and Evaluating Quality of E-Learning in Basic Sciences Section and Introduction to Clinical Medicine Section in the School of Medicine During COVID-19 Pandemic," *Acta Medica Iranica* 60, no. 8 (2022): 526–531, <https://doi.org/10.18502/acta.v60i8.10839>.

³Aria Indah Susanti, Information and Communication Technology-Based Learning Media(ICT), (Source: NEM,2021)P.92

accurately. This utilization is certainly crucial in today's world, requiring not only its utilization but also the development of its benefits.⁴

The use of information technology in the learning process, completing various assignments, and improving teacher competency are inextricably linked to the development of information and technology itself. Facing these challenges, teachers, as the frontline in education, are required to be ready to change and adapt. The role of teachers will not be replaced by any machine, no matter how sophisticated. Teachers are essential for the character of the nation's children, with their character, tolerance, and good values. Teachers are also able to foster social empathy, build imagination and creativity, and strengthen the spirit of national unity.

A teacher is expected to play a central role in the learning process and act as an agent of transformation, enhancing the quality of human resources by developing student talent, managing learning to be more innovative, and shaping the character of the nation's children. Therefore, teachers should always be optimistic about continuously improving their professionalism in the 21st-century education era.

Today's education system is also required to equip students with 21st-century skills. These skills include critical thinking and problem-solving, creativity and innovation, communication and collaboration skills, as well as the ability to search, manage, and convey information, as well as the ability to use technology and information.⁵

Nowadays, advances in information technology have an impact on the learning process, particularly in Islamic religious education. Islamic religious education is essentially values education because it motivates students to understand religious values, and its implementation focuses on developing religious attitudes that align with religious guidance.

Islamic religious education, which aims to develop Islamic values, needs to be systematically designed by integrating various variables that influence the learning process. This is necessary based on an analysis of the current state of Islamic religious education, which still faces various global challenges. Integrating Islamic values into learning activities means combining, incorporating, and applying values believed to be good and true in order to shape, develop, and foster the character and personality of students in line with national identity during learning activities.⁶ Islam is a religion that is in accordance with human nature, so its Sharia law not only encourages humans to study science and technology and then build and foster civilization, but also regulates its people both in this world and even more so in the hereafter.⁷

Education is a common activity for every human being on this earth. Education is inseparable from all human activities. Under any circumstances, humans cannot reject the effects of the application of education. Education is taken from the word educate, which is added with the affix to educate. To educate means to maintain or provide training in morals and intelligence. From this understanding, several things related to education can be obtained.

Information and communication have become part of the Indonesian lifestyle, with remarkable progress, especially in the computer field, both in design and software. Nearly every month, designers, manufacturers, and computer technology experts conduct continuous research and development.

⁴ Yousef Alduraywish, John Patsavellas, and Konstantinos Salonitis, "Critical Success Factors for Improving Learning Management Systems Diffusion in KSA HEIs: An ISM Approach," *Education and Information Technologies* 27, no. 1 (2022): 1105–1131, <https://doi.org/10.1007/s10639-021-10621-0>.

⁵ Muhammad Adam Rusman, *Mr. Development of Islamic Education Learning in the Digital Era*., hlm.43.

⁶ Lyrics of Nur Kholidah, *Proceedings of the 2019 National Seminar, Islamic Religion PAI and Strengthening Religious Character in Facing the Era of the Industrial Revolution 4.0* (Malang: Institute for Educational Development and Learning, State University of Malang, 2019), p. 44.

⁷ Abdurrahman R Effendi and Gina Puspita, *Building Science and Technology According to God's Will*, (Jakarta: Giliran Timur, 2007), p. 15.

The advancement of information and communication technology has driven many changes, including in the field of education, which gave birth to the concept of e-learning. With e-learning, learning becomes more effective and efficient. Information and communication technology is also very possible to be used in madrasas, resulting in the concept of e-madrasas. E-madrasas provide students, ustadz, and madrasah administrators to take advantage of many benefits, including flexibility in educational programs, Islamic preaching, and study materials that can be made more interesting and memorable. The integration of information and communication technology in madrasa education improves the quality of education in madrasas and makes preaching easier. The impact of the integration of information and communication technology in education is to encourage the acceleration of computer literacy in Indonesian society.

Learning does not always come into contact with concrete things, both in concept and fact. In reality, learning often comes into contact with things that are complex, virtual and behind reality. Therefore, multimedia has a role in explaining abstract things and showing hidden things. The ambiguity or complexity of teaching materials can be helped by presenting multimedia as an intermediary.⁸ Even in certain cases multimedia can represent the teacher's shortcomings in communicating the subject matter. However, it should be remembered that the role of multimedia will not be seen if its use is not in line with the essence of the teaching objectives that have been formulated. Therefore, teaching objectives must be used as a reference for using multimedia. When ignored, multimedia is no longer a teaching aid but also an obstacle in achieving goals effectively and efficiently.⁹

Technology can improve the quality of education and its reach if used wisely for education and training, and has a very important meaning for economic welfare. Based on the views of scholars regarding the influence of globalization, future education will be more open and two-way, diverse, multidisciplinary, and related to current work productivity and competitiveness.

Nata stated that the challenges facing Islamic education today are extremely diverse. Likewise, the responses and capabilities of society to face these challenges are also very diverse. History records that Islamic educational institutions in the past demonstrated success and were respected by society, and they remain successful and respected today. However, there are also educational institutions that once enjoyed high credibility, but are now less well-known, even nearly extinct. This situation depends greatly on the extent to which educational institutions and their human resources are able to overcome the various challenges that arise.

Regarding the problems of education in the life of the nation and state in Indonesia today, experts tend to apply western educational theories or philosophies, which are not necessarily in accordance with the majority of Indonesian society which is religious, therefore Islam can be used as an alternative educational paradigm because education, besides being a humanities science, is also a normative science. Moreover, it is realized that Islam, which is full of values, is very possible to be used as a point of view in analyzing problems related to current phenomena.

The success of a development including education is always accompanied by new challenges and even negative impacts at the same time. As an anticipation, a better response and new treatment are needed, including in the case of Islamic education, a new, more Islamic educational concept is needed. Efforts to find a new paradigm of Islamic education are increasingly becoming an obsession for all groups, because the entire process of life is identical

⁸ Muhammad Furqon et al., "The Impact of Learning Management System (LMS) Usage on Students," TEM Journal 12, no. 2 (2023): 1082–1089, <https://doi.org/10.18421/TEM122-54>.

⁹ <http://nyingcurut.blogspot.com/p/normal-0-false-false-falsa-en-us-x-none.html>, diakses on Sunday, April 14, 2013

to the educational process. Besides that, the urgency to find and find a new, increasingly Islamic educational paradigm is also determined by the objective conditions of the world today where morals have been completely set aside as an essential part of human life (Mastuhu, 1999: xi).

Basically, Islamic education has multiparadigms with a broad and multidimensional vision. This includes: (1) intellectual, (2) cultural, (3) transcendental values, (4) physical skills and the development of human personality itself. This problem is of course faced with various changes, so that innovation and dynamism of the Islamic education system besides needing to look to the past, must also look to the present and the future. With reference to the future, there are several considerations that need to be taken into account: (1) on the philosophical plane, there is a need for a redefinition of the theology of Islamic education that integrates the paradigm of science and the values of Islamic teachings; (2) what human characteristics are desired and relevant to the demands of the development of the times; (3) what type of education is chosen so that it can follow new developments; (4) what side of Islamic education is developed towards various aspects of development (socio-economic-cultural) of society; and (5) towards concentration on how educational development is constructed to be relevant to future needs.

LITERATURE REVIEW

The development of information technology has brought significant changes to the world of education, including the learning process at various levels. Information technology provides significant opportunities for educators to develop more innovative, effective, and efficient learning methods.¹⁰In the context of modern education, technology serves not only as an aid but also as the primary means of accessing information and learning resources. Various digital devices such as computers, the internet, and mobile devices enable students to access information more quickly and easily. This demonstrates the crucial role of information technology in improving the quality of learning. Therefore, integrating technology into the learning process is a crucial requirement in today's education system. By optimally utilizing technology, the learning process can be more engaging and interactive.

In the world of education, information technology has changed the way teachers deliver learning materials to students.¹¹The learning process, which was previously conventional, is now shifting toward digital-based learning. The use of digital learning media allows teachers to present material in a more varied way through videos, animations, interactive presentations, and various online learning platforms. This change provides a more engaging learning experience for students, thereby increasing their motivation. Furthermore, information technology also enables more flexible learning, as students can access materials anytime and anywhere. This flexibility is crucial in facing the challenges of education in the era of globalization. Therefore, utilizing information technology is a crucial strategy for increasing learning effectiveness.

In the context of Islamic education, the use of information technology has great potential to support the delivery of religious material more effectively. Islamic education aims not only to impart knowledge of Islamic teachings but also to shape the character and morals of students.¹²Therefore, the use of technology in Islamic education must support the achievement of these goals. Digital media can be used to deliver various Islamic subjects, such as Quranic

¹⁰ Eamon Costello, Keith Johnston, and Vincent Wade, "Crowded House: An Analysis of How the Virtual Learning Environment Moodle Is Built via Bug Tracker Participants," *Interactive Learning Environments* 31, no. 5 (2023): 2583–2593.

¹¹ Ika Febrian Kristiana et al., "Online Student Engagement: The Overview of HE in Indonesia," *International Review of Research in Open and Distance Learning* 24, no. 3 (2023): 34–53.

¹²D Kuswianto and O Ariyanti, "Millennial Santri's Digital Da'wah Activism at Tanbihul Ghofilin Islamic Boarding School, Banjarnegara," *AL_GHAZALI: Journal of Islamic Education and Thought* (2025), https://jurnal.staialjambjm.ac.id/index.php/AL_GHAZALI/article/view/439.

interpretation, hadith, fiqh, and Islamic history, in a more engaging manner. Furthermore, technology can help students access various trusted Islamic sources online. With information technology, Islamic education can be more dynamic and relevant to current developments.¹³ This shows that technology has great potential in enriching learning methods in Islamic Education.

The integration of information technology in education is also supported by the growing development of various digital learning platforms. Online learning platforms facilitate virtual interaction between teachers and students. Through these platforms, teachers can provide learning materials, assign assignments, and conduct online evaluations. Furthermore, students can engage in discussions with teachers and fellow students through various communication features. This demonstrates that information technology can create a more collaborative learning environment. A collaborative learning environment can enhance students' critical and creative thinking skills. Therefore, the integration of technology into learning can positively contribute to the development of student competencies.

The use of information technology in education is also closely related to the concept of 21st-century learning. 21st-century learning emphasizes the importance of mastering critical thinking, creativity, communication, and collaboration skills. Information technology can be an effective tool for developing these skills in the learning process. Through various digital applications and media, students can learn actively and independently. Furthermore, technology also allows students to access a wide range of information from various sources around the world. This provides opportunities for students to broaden their horizons and knowledge. Therefore, integrating technology into learning is a crucial aspect in supporting 21st-century learning.

In Islamic Education, the use of information technology can help teachers convey Islamic values in a more engaging and understandable way. Learning materials delivered through digital media tend to be more easily understood by students than conventional lecture methods. The use of instructional videos, animations, and interactive multimedia can enhance students' understanding of religious material. Furthermore, technology can also be used to enrich learning resources used in Islamic Education. Teachers can utilize various digital resources such as e-books, journals, and trusted Islamic websites. This way, Islamic Education learning can be more varied and less monotonous. This can increase students' interest and motivation to learn.

Although information technology has many benefits in education, its use also faces various challenges. One major challenge is the limited technological facilities and infrastructure in some educational institutions. Not all schools have adequate access to technological devices and internet connections. This situation can hinder the integration of technology into learning. Furthermore, the differences in digital skills between teachers and students also pose a challenge. Some teachers still struggle to optimally utilize technology in the learning process.¹⁴ Therefore, efforts are needed to improve educators' digital competencies. Training and professional development are crucial steps in addressing these challenges.

Besides limited facilities, another challenge in utilizing information technology is the potential negative impact of uncontrolled use. Students can easily access a variety of information via the internet, including information that is inconsistent with educational values.

¹³A Rusydi, A Khalidi, and Z Najirah, "The Effect of Colored Headscarf Punishment on Improving the Speaking Skills (Maharah Kalām) of Female Students at Pondok Pesantren Ihyā Ulumuddīn Nur Sufi'iyah Amuntai," *AL GHAZALI: Journal of Islamic Education and Thought* (2025), https://jurnal.staialjamibjm.ac.id/index.php/AL_GHAZALI/article/view/435.

¹⁴A B A Bakar and M R Ridho, "The Impact of Human Psychological Conditions on the Application of Islamic Law in Determining the Validity of Worship," *AL GHAZALI: Journal of Islamic Education and Thought* (2025), https://jurnal.staialjamibjm.ac.id/index.php/AL_GHAZALI/article/view/478.

This can influence student behavior and mindset if not accompanied by adequate supervision. In the context of Islamic education, this is a crucial concern because Islamic education aims to shape good character and morals. Therefore, the use of technology in learning must be accompanied by the strengthening of moral and ethical values. Teachers play a crucial role in guiding students to use technology wisely. Thus, technology can be a tool that supports the development of positive character in students.

Developing digital literacy is a crucial aspect in supporting the integration of technology into education. Digital literacy encompasses more than just the ability to use technological devices; it also encompasses the ability to understand, evaluate, and critically utilize information. In Islamic education, digital literacy can help students select accurate and reliable religious information. This is crucial given the vast amount of religious information circulating online from various perspectives. Students need to be able to distinguish between valid and invalid information. Teachers can act as facilitators, helping students develop these skills. Thus, digital literacy can support the creation of higher-quality learning.

The role of teachers in the integration of information technology is crucial for determining the success of the learning process. Teachers serve not only as transmitters of material but also as facilitators and guides in the student learning process. In technology-based learning, teachers are required to have the ability to design creative and innovative learning. Teachers also need to be able to utilize various digital media to deliver material effectively. Furthermore, teachers must be able to guide students in using technology positively and productively. This ability requires adequate mastery of digital competencies. Therefore, improving teachers' digital competencies is a crucial factor in supporting technology integration in education.

In addition to teachers, support from educational institutions is also crucial in the process of integrating information technology into learning. Educational institutions need to provide adequate technological facilities to support learning activities. These facilities include computers, internet connections, and various learning applications that can be used by teachers and students. Furthermore, educational institutions need to provide training to teachers to enable them to utilize technology optimally. Policy support from schools can encourage the creation of a technology-based learning environment. A supportive learning environment can increase the effectiveness of technology use in the learning process. Therefore, technology integration in education requires support from various parties.

The development of digital technology has also given rise to a variety of learning resources that can be utilized in Islamic education. Various digital platforms provide Islamic materials in the form of articles, videos, podcasts, and e-books. These learning resources can be used by students to deepen their understanding of Islamic teachings.¹⁵ Furthermore, technology also enables students to learn independently through various learning applications. Independent learning can help students develop a sense of responsibility for their learning process. This aligns with modern learning concepts that emphasize the importance of independent learning. Thus, digital technology can enrich learning resources in Islamic education.

In the era of globalization, the integration of information technology in education is also related to efforts to increase the competitiveness of human resources. Education that effectively utilizes technology can produce graduates with skills relevant to the needs of the times. In the context of Islamic education, this means producing a generation that not only possesses a sound religious understanding but also possesses the ability to utilize technology positively. A

¹⁵ F A Rivai and N Rahmawati, "Workshop, Assistance, and Capacity Building in the Development of Teaching Materials Based on 21st-Century Learning," *AL GHAZALI: Journal of Islamic Education and Thought* (2025), https://jurnal.staialjamibjm.ac.id/index.php/AL_GHAZALI/article/view/470.

generation that balances religious knowledge and technological skills will be better prepared to face future challenges. Therefore, the integration of technology in Islamic education is a crucial step in preparing a competent generation. Islamic education needs to adapt to technological developments without abandoning the fundamental values that underpin it.

Besides providing opportunities, the development of digital technology also requires adjustments in the learning methods used by teachers. Monotonous and less interactive learning methods can cause students to lose interest in learning. Therefore, teachers need to develop more creative learning strategies by utilizing technology. The use of digital media such as learning videos, simulations, and interactive applications can help increase student engagement in the learning process. Active student involvement is a crucial factor in improving the quality of learning. Technology can help create a more engaging and enjoyable learning experience, thus enabling more effective learning.

The use of information technology in Islamic education can also support the learning evaluation process. Various digital applications can be used to conduct online assessments more quickly and efficiently. Teachers can administer quizzes, assignments, or exams through available digital platforms. Technology-based evaluation systems also enable teachers to monitor students' learning progress more systematically. Evaluation data can be analyzed to determine students' level of understanding of the material taught. This allows teachers to make improvements to their learning strategies as needed.¹⁶This shows that technology can help improve the quality of the evaluation process in education.

The integration of information technology into Islamic education ultimately requires a balanced approach between the use of technology and the strengthening of Islamic values. Technology should be used as a tool to support the learning process, not as the primary goal of education itself. Islamic education must remain grounded in Islamic principles, which emphasize the formation of good morals and character. Therefore, the use of technology in learning must be directed toward strengthening these values. Teachers need to ensure that technology is used wisely and responsibly. With the right approach, technology can be an effective tool in supporting the development of Islamic education in the digital age. The harmonious integration of technology and Islamic values will positively contribute to the future development of education.

METHOD

This study aims to examine the use of information technology in Islamic education, specifically examining the challenges and opportunities emerging in the era of globalization. The research method used is a qualitative approach with literature review and in-depth interviews to gain a more comprehensive understanding of the topic.

The type of research used is qualitative descriptive research, which aims to describe the phenomena surrounding the use of information technology in Islamic education, as well as the challenges and opportunities that exist. This research not only describes existing conditions but also provides an interpretation of how information technology can be applied in the context of Islamic education in the era of globalization.

The approach used in the research is a qualitative approach, which emphasizes more on in-depth understanding and description of the use of information technology in Islamic education. This approach allows researchers to explore various aspects related to the phenomenon being studied, such as the perceptions of teachers, students, and Islamic

¹⁶ M Mukhlis, "The Effectiveness of the Lok-R Model in Enhancing Academic Achievement in the Islamic Religious Education Study Program," *AL GHAZALI: Journal of Islamic Education and Thought* (2025), https://jurnal.staialjamibjm.ac.id/index.php/AL_GHAZALI/article/view/417.

educational institutions towards information technology. The data sources in this research consist of two types:

1. Data primer

Primary data was obtained through in-depth interviews with several parties related to Islamic education, such as:

- a) Teachers and instructors of Islamic education in schools and Islamic boarding schools.
- b) Students who learn using digital platforms in Islamic education.
- c) Managers or administrators of Islamic educational institutions who have utilized information technology.

2. Data seconds

Secondary data was obtained through literature review, including books, journal articles, research reports, and related documents that discuss information technology in Islamic education and its application in the era of globalization.

RESULT AND DISCUSSION

Several theories are relevant to the challenges and opportunities of Islamic education in the digital era. One is digital literacy theory, which emphasizes the importance of developing skills and understanding in using digital technology effectively and responsibly. In the context of Islamic education, digital literacy is key to ensuring the authenticity of content and awareness of internet ethics in accessing religious information. Constructivist learning can be applied in the development of interactive and creative learning methods. Learning occurs through the construction of knowledge by individuals based on experience and interaction with the environment. In the context of Islamic education in the digital era, teachers can utilize technology to facilitate better knowledge construction through visual experiences and direct interaction. In implementing digital technology in Islamic education, curriculum development is also relevant. Educators need to design curricula that are integrated with digital technology and remain consistent with Islamic principles. This theory emphasizes the importance of developing effective learning strategies and relevant materials to ensure the quality of Islamic education in the digital era.

Constructivist learning can be applied in the development of interactive and creative learning methods. Learning occurs through the construction of knowledge by individuals based on experience and interaction with the environment. In the context of Islamic education in the digital age, teachers can utilize technology to facilitate better knowledge construction through visual experiences and direct interactions. In implementing digital technology in Islamic education, curriculum development is also relevant. Educators need to design curricula that are integrated with digital technology and remain consistent with Islamic principles. This theory emphasizes the importance of developing effective learning strategies and relevant materials to ensure the quality of Islamic education in the digital age.

Islamic education in the 21st-century digital era faces complex challenges and opportunities. Key challenges include the authenticity and reliability of content, educational quality, accessibility, and the digital divide. However, through the judicious use of digital technology, there are opportunities to increase global accessibility, implement interactive and creative learning methods, foster creativity and innovation, and improve evaluation and monitoring. To address these challenges, it is crucial to implement a gradual mentoring mechanism and utilize relevant theories, such as digital literacy, constructivist learning, and curriculum development. In this way, Islamic education can continue to develop and provide positive benefits in this digital era.

A. Understanding information technology

Technology is an activity or study that uses scientific knowledge for practical purposes in industry, defense, medicine, trade, etc. It can also be defined as a method or process of

dealing with a technical problem based on scientific study, including using electronic equipment, chemical processes, manufacturing, sophisticated machining, etc.¹⁷ Information technology is the means and infrastructure, systems, or methods for obtaining, sending, processing, interpreting, storing, organizing, and using data meaningfully. Information technology is a technology used to process data. This processing includes processing, obtaining, compiling, storing, and manipulating data in various ways to produce quality information.¹⁸, namely information that is relevant, accurate and timely, which is used for personal, business and government purposes, and is strategic information for decision making.¹⁹

According to Anshari, quoted by Muhammad Jafar, technology is a concept related to the type of use and knowledge of tools and skills, and how it can influence human ability to control and change things around them.²⁰

Meanwhile, information is data that has been processed and has meaning. This data can be in the form of numbers, letters, writing, or images. An information system is any method used to convey data. The data conveyed can use very simple methods such as correspondence, to the most modern methods today, which always use computer technology and internet networks in every activity to obtain information. This processed data is the source of information.²¹

Information technology is everything related to the manipulation and processing of information. It can also be defined as a combination of computing, namely computers or telecommunications devices used to process, store, and disseminate all forms of information, fostering motivation for creative change. This can overcome various obstacles that hinder human activity.²²

It can be understood that information technology is an aspect that involves various types of technology, such as information engineering and processing, and its use. Information technology is certainly related to communication, while information technology and communication are related to computers because the use of computers is an integration of the concepts of information technology and communication.

B. Types of information technology devices

Information can be displayed using several types of technological devices as follows:

1. Compotes

A computer is a tool for processing data into information according to previously formulated commands.²³

The computer was created by a German engineer named Konrad Zuse who created a computer called the Z3 in 1941.²⁴ Computers in learning can be used as a learning tool, a learning resource

¹⁷Abdurrahman R Effendi and Gina Puspita, *Developing science and technology according to God's will*, (Jakarta: East Turn, 2007,) p.2.

¹⁸Hamzah B. Uno and Nina Lamatenggo, *Communication and Information Technology Learning*, (Jakarta PT Bumi Askara, 2010), p. 57

¹⁹Bambang Warsita, *Learning Technology, Its Foundations and Applications* (Jakarta: Rineka Cpta, 2008), p. 135

²⁰Muhammad Japar, *Educational information technology*, (Jakarta: Social and Political Laboratory Press, 2018), p. 31.

²¹Muhammad Japar, *Educational information technology..*, pp. 32-33.

²²Bayu Rianto, Welly Dozan, *Basics of Introduction to Information Technology*, (Malang: CV. Multemede Education, 2020), p. 16.

²³Tuti Andriani, "Information and Communication Technology-Based Learning System", *Socio-cultural : Medea Communication of Social Sciences and Culture*, Vol. 12.no.1 January-June 2015, p.9.

²⁴Iman Lubis, Muhammad Safii, *Smart Economy of South Tangerang City*, 9South Tangerang: PT Karya Abadi Mitra Indo, 2018), p. 12

in developing programs that can be used in computer learning, individual learning (individual learning), online learning interactions, learning using CAI (Computer Assisted Instruction), and CBI (Computer Based Instruction) and e-learning.²⁵

2. LCD Projector

LCD is an abbreviation of (Liquid Crystal Display) LCD projector is a projection tool whose optical system can produce very bright light and display information such as images, text, videos, animations, videos originating from a computer and transmitted to the screen.²⁶ The idea of making an LCD projector started in 1068 by Gene Dolgof.²⁷ LCD projectors in learning can be used for visual learning, as an alternative learning method that is easy and helps students understand the lesson material better.²⁸

3. OPH (Over Head Projector)

OPH is information-based technology equipment that displays information visually and is then projected onto a screen via a projection device (OPH).²⁹ OPH was discovered in the 1930s, namely since the discovery of the Fresnel lens used in OPH.³⁰ The use of OPH in learning is by projecting the lesson material with transparent media onto a screen which produces a large image size. In using OPH, it is necessary to have the help of other equipment such as markers and transparent media.³¹

4. Internet

The Internet is a worldwide computer network for accessing information and also a means of communication for transferring data.³² The internet appeared in 1969 when the United States Department of Defense conducted research called ARPANET (Advanced Research Project Agency Network).³³ Learning by utilizing the internet is using e-learning, distance learning, and web-based learning models, distributing information and knowledge (learning materials) so that teaching materials can always be updated via the internet.³⁴

5. Radio

Radio is a tool for conveying information by sending and receiving voice or sound messages using sound waves through the air or vacuum.³⁵ The development of radio began in 1896 with the Italian scientist, Guglielmo Marconi.³⁶ Radio in learning can be used as an audio medium that supports other learning media. Teachers can also use radio for independent learning activities and as a supporting medium.³⁷

6. Educational Television Broadcasts

²⁵Idris, "Effectiveness of Using Information and Communication Technology in Islamic Religious Education Learning", *Journal of Islamic Education*, Vol.1, no.2. July-December 2015, p.5.

²⁶Tuti Andriani, "Information and Communication Technology-Based Learning System"..., p.9.

²⁷Erniyadiah, "Technological Development in <https://erniyadiah.wordpress.com>, accessed July 30, 2022 at 10:00 WIB.

²⁸Epida Erni, "Efforts to Improve Science Learning Achievement with a Metacognitive Approach for Class VI at SDN 153 Pekanbaru", *Jurnal Sistem Indragiri*, Vol.1. no. 2, 1017, p.26.

²⁹Tuti Andriani, "Information and Communication Technology-Based Learning System"..., p. 9

³⁰Nurdiansyah, *Medea Innovative Learning*, (Sidoarjo: Umsida Press, 2019), p. 95.

³¹Abigil Soesana, et al., *Development of Learning Media in the Society Era 5.0*, (Bandung: Our Writing Foundation, 2022), p.24.

³²Tuti Andriani, "Information and Communication Technology-Based Learning System"..., p.9..

³³Iman Lubis, Muhammad Safii, *Smart Economy of South Tangerang City*..., p.20.

³⁴Asmawi, et al., "Information and Communication Technology-Based Education", *Proceedings of the National Seminar on Postgraduate Education Programs*, PGRI University Palembang, May 3, 2019, p. 5.

³⁵Tuti Andriani, "Information and Communication Technology-Based Learning System"..., p.9.

³⁶Muhammad Hasan, *Medea Learning*, (Klaten : Tahta Medea Group, 2021), p.190.

³⁷Septy Nurfadhilah, *Learning media at elementary school level*, (Sukabumi: CV Jejak Member IKAPI, 2021), PAGE 66.

Television is a medium that can be used for learning through various broadcasts and programs that are displayed in the form of images and sound.³⁸Television was created starting from the discovery of a metal disc by Poul Nipkow in 1883.³⁹The use of television in learning is by broadcasting educational programs such as broadcasts of enrichment of subject matter, courses at the Open University, distance education and other educational programs.⁴⁰

7. GPS (global positioning system)

GPS is an information tool to determine the position, direction, place or speed of an object on the earth's surface.⁴¹The first GPS satellite was launched in February 1978 with a satellite weight of around 2000 pounds and a solar panel for battery power measuring 17 feet long.⁴²GPS in learning can be used to determine the basic position point of a place and time information, GPS applications can also be used to find a specific location point to find out a certain direction such as the direction of the Qibla.⁴³

8. Fax

Fax is a technological tool used by the sender to provide information to someone as the recipient of the message in the form of a document.⁴⁴The history of the facsimile began with the emergence of the telegraph in 1837, which was invented by Samuel F.B. Morse.⁴⁵In learning, fax can be used as a telecommunications medium to convey information related to lesson material.⁴⁶

9. Communication Satellite

A communications satellite is a technological device placed in space for information and communications purposes.⁴⁷In the field of education, communication satellites are used to amplify and transmit voice, television, telephone, music, and data signals from one location to another. They can also be used to expand online learning.⁴⁸

10. Modem

A modem is a piece of hardware that converts digital signals into electrical signals that can be transmitted over a telephone line. Modems connect computers and laptops to the internet, allowing them to access information online.⁴⁹

11. Telephone

³⁸Tuti Andriani, "Information and Communication Technology-Based Learning Systemi"... ,hlm.9.

³⁹Novi Khairranisyam, "The Influence of Educational Television Programs on the Critical Thinking Skills of Fifth Grade Students at Al-Waliyah 26 Elementary School, Medan", Scripti, (Medan: UMSU Medan 2021), p. 13.

⁴⁰Idris, "The Effectiveness of Using Information and Communication Technology in Islamic Religious Education Learning" ,... , p.6.

⁴¹Tuti Andriani, "Information and Communication Technology-Based Learning System" . . . , p. 9.

⁴²Anisah Budiwati, "Tongkat Istiwa' Global Positining System and Google Earth to Determine Earth Coordinate Points and Its Application in Determining the Qibla Direction", Ahkam Journal, Vol. 26. No. 1. April (2016), hlm.6.

⁴³Anisah Budiwati, "The Istiwa Stick' Global Positioning System and Google Earth to Determine the Earth's Coordinate Points and Its Application in Determining the Direction of Qibla' . . . , p. 13.

⁴⁴Tuti Andriani, "Information and Communication Technology-Based Learning System" . . . , p. 9.

⁴⁵Iman Saufik, Introduction to Information Technology, Concept, Theory and Practice, (Semarang: Prima Agus Teknik Foundation, 2021), p. 58

⁴⁶Dyah Afifah Andari, ICT-Based Learning Media, (Blitar : Guepedia, 2021), p. 31

⁴⁷Tuti Andriani, "Information and Communication Technology-Based Learning System".... , p. 9.

⁴⁸Dzumriati Musa, "Latest Developments in Communication Technology", <https://www.mahasiswa.ung.ac.id>, accessed December 30, 2021, at 11:00 WIB.

⁴⁹ TutiAndriani, "Information and Communication Technology-Based Learning System".... , p. 9.

A telephone is a communication tool equipped with a network to connect people from one place to another.⁵⁰The invention of the telephone was triggered by the growing and increasing use of the telegraph. The telephone was first invented by Alexander Graham Bell in 1876.⁵¹Telephones can be used in learning as a communication medium that conveys information messages from the sender to the recipient.⁵²

12. Mobile phone

A mobile phone, also known as a cellular telephone, is a technological tool for communication that is equipped with voice messages, call waiting and SMS (Short Message Service).⁵³The invention of the mobile phone occurred in 1973 by Matthew Cooper of Matorola Corp.⁵⁴The use of mobile phones in learning can be done by accessing learning materials, carrying out the learning process or what is called m-learning (mobile learning), m-learning can be done anytime and anywhere.⁵⁵

C. The Influence of Information Technology on Learning

Information technology influences learning until developments emerge as trends that include:

- 1) The emergence of mass media as a source of knowledge and a center for education, especially electronic media. Examples include the internet and computer labs.
- 2) Teachers are not only a reference source of knowledge, so that students are not only focused on teachers and learning information provided by teachers, but can also access learning materials via the internet, teachers have a role as instructors and guides, so that each student is guided in learning to direct and monitor the educational process, so that these students do not go astray in using information and communication technology media in learning at school.
- 3) New methods exist that can simplify the learning process for students. Technology has created methods that engage students' attention and facilitate their understanding of the material.
- 4) Learning can be carried out online, for example by using applications zoom, google meet, and can use internet postal services.
- 5) The existence of a data management system for assessment results that utilizes technology. When technology was not yet developed, humans conducted research, data analysis had to be carried out directly and went into the field and calculated manually, but with technology all tasks can be done through technology, without requiring a long time and the results are more accurate. An example of technology is a laptop or computer that can manage data by utilizing programs on the laptop or computer.
- 6) The rapid fulfillment of educational facilities. For example, in creating questions, it is necessary to create questions according to the number of students in the school, therefore, with the existence of machines photocopy which can duplicate data quickly. With technological advances, everything can be done in a shorter time.⁵⁶

⁵⁰ TutiAndriani, "Information and Communication Technology-Based Learning System"..., p. 9.

⁵¹ Iman Saufik, Introduction to Information Technology, Concepts, Theories and Practices....p. 59.

⁵² Dyah Afifah Andari, "Media Learning Based on Information and Communication Technology" . . . , p. 9

⁵³ Tuti Andiani, "Information and Communication Technology-Based Learning System" . . . , p. 9

⁵⁴ Iman Saufik, Introduction to Information Technology, Concepts, Theories and Practices. . . , p. 60.

⁵⁵ Asmawi, et al., "Information and Communication Technology-Based Education", Proceedings of the National Seminar on Postgraduate Education Programs, p. 5.

⁵⁶ Ana Maritsa, et al., "The Influence of Technology in the World of Education," Al-Muthaharah: Journal of Socio-Religious Research and Studies, Vol. 18. No. 2. July-December 2021, p. 6.

D. Selecting and Determining Information Technology-Based Media in Learning

The use of information technology-based media in learning can positively contribute to student learning outcomes. Therefore, the use of information technology media requires consideration of several factors related to the selection and selection of such media. In selecting and selecting information technology-based media to be used in the learning process, teachers need to be provided with several guidelines, namely:

1. There is no single media that is best for achieving learning objectives, because each type of media has advantages and disadvantages, therefore the use of two or more combinations of information technology media is more helpful for achieving learning objectives.
2. The use of media must be based on the learning objectives to be achieved.
3. The use of information technology-based media needs to consider the suitability of the media characteristics with the characteristics and content of the learning material presented.
4. The use of media must be adjusted to the time and form of learning activities to be carried out.
5. The use of media must be accompanied by sufficient preparation and skill in using it.
6. Students need to be prepared before information technology-based media is used.
7. The use of media must be attempted to always involve the active participation of students according to their level of thinking.⁵⁷

In addition, to align the selection of information technology equipment with the subject matter being taught, teachers should also consider several general principles for utilizing information technology. These general principles can be outlined as follows:

1) Effective and efficient

The use of information technology should first consider the benefits gained from technology when integrated into learning to ensure effectiveness and efficiency. These benefits include the acquisition of knowledge, ease and affordability, and time and cost savings.

2) Optimal

Utilizing information technology during learning can make the activity more valuable and maximize its effectiveness. Without it, learning becomes less than optimal. The added value of information technology during learning includes a less boring atmosphere, a wider range of media and learning resources, and a contemporary, modern, and open learning experience.

3) Interesting

Classroom learning is considered interesting and encourages curiosity so that it can benefit every individual who participates in learning. This learning certainly utilizes information technology which can make the learning atmosphere in the classroom different and reduce the boredom felt during learning.

4) Stimulate students' creative thinking power

The use of information technology tools can positively improve student motivation during learning. This can stimulate students' creativity and enable them to be creative.²⁸ new skills and ideas that can achieve learning goals.⁵⁸

E. Utilization of Information Technology in Learning

In utilizing information technology in learning, it is necessary to follow the implementation stages in utilizing it.

These stages are as follows:

1. Early Learning

⁵⁷Aryadillah and Fifit Fitriansyah, *Medea Learning Technology*, (Jakarta: Herya Medea, 2017, pp. 20-21.

⁵⁸Kholis Aniyanti, "Selection of ICT-Based Learning Media/Multimedia Learning Media", *Idaaratul ulum: Jurnal Prode MPI*, Vol. 3. No. 2. December 2021, hlm.8.

- a) The teacher begins the lesson by preparing the students to learn by conditioning the students to be calm, greeting and praying together, checking student attendance, then giving an apperception, followed by starting the lesson.
 - b) The teacher provides apperception at the beginning of the lesson by recalling the material that has been studied.
 - c) The teacher explains the learning objectives and basic competencies that students will achieve in learning at the start of each lesson.
2. Core Learning
- a) Exploration
 - 1) Teachers involve students in searching for sources of information regarding the material to be studied by utilizing information and communication technology via the internet. browsing, searching and watch the broadcast from youtube using the computers provided by the school or smartphone android owned by the students themselves.
 - 2) Approaches and methods that can be applied in learning include discussions, lectures, direct practice, project work, student center learning, discovery learning, peer teaching, classical, Q&A and consultation.
 - 3) The use of learning media, tools, and learning resources based on information and communication technology in learning. Learning media that teachers can use include presentations or materials. powerpoint, application or corel, photoshop, blender.
 - 4) Learning equipment can be used in the form of laptops, LCD projectors and computers.
 - 5) The learning resources used by teachers are electronic books, reference videos, youtube and the internet.
 - b) Elaboration
 - 1) Student activities in learning include observing, analyzing, doing assignments, practicing, discussing and presenting.
 - 2) Teachers always get students used to reading by utilizing information and communication technology using computers at school and smartphone owned by students.
 - 3) The teacher provides motivation, displays the work of seniors, shows internet images and provides examples of finished work.
 - 4) Teachers facilitate students so that students can learn cooperatively and collaboratively by providing tools, searching for information on the internet and giving assignments through discussion.
 - 5) Teachers provide consultation time at any time via social media whatsapp or other, encouraging, motivating, evaluating and facilitating tools.
 - 6) Teachers provide supporting media facilities such as computers for typing reports and printer to print the report results.
 - 7) Teachers encourage students to present their work results by utilizing information and communication technology.
 - c) Confirmation
 - 1) Teachers always give positive feedback and reinforcement to students by praising the students' work. upload in application programs such as instagram and the like to be evaluated.
 - 2) Teachers encourage students to reflect by communicating between teachers and students, giving students the opportunity to assess each other.
 - 3) End of Learning
 - a. The teacher makes conclusions at the end of the lesson and collects work and notes down material that is not yet clear.
 - b. The teacher carries out learning assessments, assessments are carried out by providing suggestions and evaluations of the collected work.

- c. The teacher reflects on learning by asking questions, displaying work and providing feedback on the results of the work.
- d. Teachers evaluate and follow up on information and communication technology-based learning³⁰
- e. Delivering the learning plan that will be implemented in the next meeting.⁵⁹

After carrying out the steps in using information technology in learning, it is important for an educator to understand how to utilize several information technology devices for learning purposes. The use of information technology devices for educational development is categorized into three groups, namely:

- 1) The use of computers to deliver teaching materials, a term commonly known as Computer Assisted Instructional (CAI). In this case, the teaching material delivered is packaged in software. Students can then learn from the programs on their computers. Many learning programs created on students' computers can perform simulations or provide feedback to other students.
- 2) Distribution of teaching materials via the internet. Teaching materials are packaged in the form of webpage or interactive learning programs (CAI). Then the teaching materials are placed on a server connected to the internet so that students can access them using web browser or other internet facilities.
- 3) A means of communication with experts, resource persons, or other students. This communication is used to ask questions about things you don't understand, or to express your opinions and respond to those of others. This way, students can receive feedback from experts or resource persons, as well as from their peers, on matters related to the learning material.⁶⁰

According to Rusman, as quoted by Nurfaeda et al., he put forward several examples of the use of information technology devices for learning purposes:

1. The use of LCD projector learning media by educators in delivering lesson materials through Power Point applications and other presentation applications.
2. The use of computers as a means of practicing certain materials that require computer facilities, such as the use of office applications and graphic design.
3. Utilization of the internet, e-learning, email for distance learning processes or virtual classes.⁶¹

The benefits of using information technology to support the implementation of learning are:

- 1) Improving the quality of learning
 - 2) Expanding access to education
 - 3) Helps visualize abstract ideas
 - 4) Make it easier to understand the material being studied
 - 5) Make learning materials more interesting
- Allows for interaction between learning and the material being studied.⁶²

2. Islamic Religious Education Learning

⁵⁹Ary Kurniawan, Fitri Nur Mahmudah, "Implementation of Information and Communication Technology-Based Learning in Honesty High Schools", *Al-Tanzim: Journal of Islamic Education Management*, Vol. 04. No. 02 (2020), hlm.4-6

⁶⁰Nurdiansyah, Andiek Widodo, *Learning Technology Innovation*, (Sidoarjo: Nizamia Learning Center, 2015), p. 153.

⁶¹Nurfaeda, "Analysis of the Utilization of Information and Communication Technology in the Learning Process at State Vocational Schools in Makassar City", *Theses*, Makassar: Makassar State University, 2019, p.5.

⁶²Rahmat Hidayat, Abdillah, *Educational Science: Concepts, Theories and Applications*, (Medan: LPPI, 2019), P.309

Understanding Islamic Religious Education Learning: Islamic Religious Education Learning is a combination of teaching and Islamic Religious Education. Learning is defined as the implementation of activities related to the educational process, in which educators and students interact with each other while discussing subject matter. Learning generally aims to develop students' potential. Students are given the opportunity to improve their attitudes, knowledge, and skills.⁶³

Meanwhile, the term Islamic Religious Education refers to a subject developed to foster morality, tailored to the material. The development of Islamic Religious Education strives to produce individuals who can understand, internalize, and practice Islamic teachings. This understanding is intended to transform knowledge in Islamic Religious Education materials to meet the needs of the times and not contradict the Quran and Hadith.⁶⁴

The definition of Islamic Religious Education is in accordance with Ibn Miskawih's thoughts that the description of the Islamic education system is correlated with the habituation of good morals or the good examples given.⁶⁵

So it can be understood that Islamic Religious Education learning is a series of activities implemented by an educator to teach a group of students so that they can understand and develop teachings related to Islam and apply them in everyday life.

a. Scope of Islamic Religious Education Learning Materials

Scope is the boundaries within a subject being studied. Islamic Religious Education learning materials must also have a scope. One of the materials in this verse is the Aqidah (faith) taught by Luqman to his son. The following is a detailed description of the scope of Islamic Religious Education learning materials:

1) Al-Qur'an

The material of the Quran is in the form of studies related to the understanding of the Quran. The Quran is viewed as a miracle revealed to the Prophet Muhammad SAW. Humans who make the Quran a guide to enlighten the soul and heart from a dark condition to light. Humans who are guided by the Quran can be guided to the straight path.

2) Hadith

Hadith is the words, deeds and affairs of the Prophet Muhammad (PBUH). Students should use hadith as a source to find him/her, training character and reflecting habits according to the teachings of the Prophet. Hadith can be said to be all sources that come from the Prophet, be it his words, actions, taqirir or his nature.

3) Fiqh

Fiqh (Islamic jurisprudence) is a subject that deals with dynamic issues that evolve over time and are unique to study. Students are required to discuss contemporary fiqh issues from all aspects of human life. Students must be trained to solve problems based on fiqh teachings, particularly those that arise over time.

4) Moral Creed

⁶³Asfiati, Visualization and Virtualization of Islamic Religious Education Learning Program Version of the Independent Learning Program in Three Eras (Industrial Revolution) 5.0, the Covid-19 Pandemic Era and the New Normal Era), (Jakarta:Kencana, 2020), p.15.

⁶⁴Asfiati, Visualization and Virtualization of Islamic Religious Education Learning Version of the Independent Learning Program in Three Eras: Industrial Revolution 5.0, the Covid-19 Pandemic Era, and the New Normal Era). . , hlm. 16.

⁶⁵Eka Putra Romadona, "The Concept of Habituation Education from the Perspective of Ibn Miskawih," Muslim Heritage Journal, Vol. 6. Number 2. p. 19.

The material of Aqidah Akhlak is a study that includes belief in Allah, namely by understanding His names and attributes, believing in the existence of angels, spirits, demons, devils and other supernatural beings, believing in the existence of prophets, holy books and other things.eschatological, such as the day of resurrection, the day of judgment, heaven, hell,Intercession,magic bridge.⁴⁰ Aqidah means a belief that binds the heart from all doubt. Aqidah is something that must be affirmed in the heart, thus creating a calm and pure soul. Morals are a condition of the soul that motivates actions based on that condition.

5) History of Islamic Culture

Students must be taught about history. History can be a mirror for how to act and behave. The history of Islamic culture examines the origins of Islam, its development, decline, and resurgence. The history of Islamic culture begins with the prophets of the past, and continues through Allah's sending of the Prophet Muhammad, and continues until the Day of Judgment. The history of Islamic culture is about civilization, education, culture, and glory.⁶⁶

b. Learning Objectives of Islamic Religious Education

The primary goal of Islamic Religious Education (ISE) is to shape students' personalities. This is reflected in their daily attitudes and behavior. Therefore, ISE learning is not solely the responsibility of the teacher but also requires support from all relevant parties, both within the school and the community.⁶⁷

F. The Role of Information Technology in Learning

There are 6 roles of information technology in the field of education, including:

1. Information technology as a skill and competency. The use of information and communication technology must be proportional, reaching all levels of society according to their respective roles.
2. Information technology as a learning infrastructure, such as the availability of teaching materials in digital format,the network is school and learn anywhere and anytime.
3. Information technology as a source of learning materials, because science is developing rapidly, great teachers are spread all over the world, books and teaching materials are updated continuously, innovation requires collaborative thinking, without technology learning takes a long time to be updated.
4. Information technology as a learning aid and facility, such as in delivering knowledge, considering real-world contexts, providing illustrations of various scientific phenomena to accelerate the absorption of teaching materials, students explore knowledge more broadly and independently, knowledge acquisition comes from student-teacher interactions and the ratio of teachers to students thus determining the process of providing facilities.
5. Information technology as a supporter of learning management, namely, every individual needs continuous learning support every day, transactions and interactive interactions between...stakeholder requires managementback office strong, and the quality of educational services is gradually improved. People are a valuable resource.
6. Information technology as a decision support system such as: each individual has their own character and talent in learning, teachers improve their competence in various fields of science, the institution's profile is known to the government.⁶⁸

G. Obstacles to the Use of Information Technology in Learning

⁶⁶Asfiati, et al.,Islamic Religious Education Learning, Policies, Strategies, Learning Programs with Curriculum Integration during the Covid-19 Pandemic,Jakarta: Kencana, 2022), pp. 33-34.

⁶⁷Asfiati, et al.,Islamic Religious Education Learning, Policies, Strategies, Learning Programs with Curriculum Integration during the Covid-19 Pandemic. . , p. 35.

⁶⁸Rahmat Hidayat, Abdullah,Educational Science Concepts, Theories and Applications.. , page 310

In today's technological era, information is essential for classroom learning to provide students with opportunities to successfully achieve their learning goals, particularly through the use of information technology to mitigate obstacles that arise during learning. The analysis shows that teachers are eager to utilize information technology in their learning, but face numerous obstacles. The most common obstacles include:

- 1) Lack of self-confidence
- 2) Lack of competence
- 3) Lack of access to resources⁶⁹

According to Rivalina, as quoted by Delila Sari Batubara, some of the obstacles faced by teachers in utilizing information technology in learning are:

1. Resistance to change, especially from school leaders and teachers
2. Teachers' mastery of information technology devices is still low
3. Information technology facilities are still inadequate, such as electricity and the number of computers.
4. Teachers have very busy teaching hours every day at school.
5. Teacher training in the field of information technology utilization which has been carried out for years has not yet reached all teachers to improve their competence.
6. There is no availability of technicians, so when teachers face various problems with their computers, such as virus attacks, the computers cannot be repaired immediately.
7. Inadequate or weak internet connection.⁷⁰

Other obstacles that hinder the use of information technology in learning are as follows:

- 1) There are no costs and infrastructure to support the use of information and communication technology.
- 2) There are several areas that do not have access to information technology such as computer facilities, internet and electricity networks.
- 3) Allows for misuse of information technology in the field of education
- 4) The lack of confidence of teachers in using information technology in carrying out learning ultimately makes teachers afraid of failing to teach through the use of information and communication technology.
- 5) Lack of teacher competence in integrating information technology with pedagogical practices.
- 6) The limited number of teachers who have knowledge and skills in the field of using information technology such as computers and the internet
- 7) Lack of enthusiasm of teachers to integrate information technology in learning.
- 8) If there are teachers who care about the progress of information technology but there is no policy support from the local education office, such as policies from school leaders, then the teachers concerned cannot utilize information and communication technology.
- 9) Teachers who have never received or participated in training in the field of information technology utilization
- 10) The level of initiative that is not applied to each individual teacher to develop their potential in using information technology is lacking.⁷¹

H. Utilization of information technology in Islamic Education

⁶⁹Erwin Sarwiti, et al., "Obstacles and Challenges of Information and Communication Technology-Based Learning", Proceedings of the National Seminar on Postgraduate Education Program, PGRI University Palembang, May 3, 2019, p. 11.

⁷⁰Delilia Sari Batubara, "Information Technology and Communication Competence of Elementary School/Islamic Elementary School Teachers (Portrait, Factors and Efforts to Improve Them)", *Mualimuna: Journal of Elementary Schools*, Vol. 3. No.1, October 2017, p.

⁷¹Sri Lestari, "Factors Influencing Teachers' Utilization of ICT", *Kwangsan*, Vol. 3. No. 2. December (2015), pp. 8-9

Utilization of Information Technology in Islamic Religious Education Learning
Information technology can be utilized in Islamic Religious Education learning, such as Islamic Religious Education teachers can implement internet-based learning, utilize telematics, e-learning, blog, multimedia resources center, learning technology through comics, and video conference.

The following are several examples of the use of information technology in Islamic Religious Education learning, namely:

1. Utilizing computers and LCD projectors to display PowerPoint programs in Islamic Religious Education classrooms, teachers simply write down key points of the material to be presented to students. The presentations aren't limited to text, but also include audio or video related to the topic.
2. Utilizing computers with audio streaming, such as listening to audio on how to read the Quran with tajweed, can improve students' understanding through listening.
3. Utilization of CAI (Computer Assisted Instruction) or computer-assisted learning, compact disk (CD) interactive learning multimedia. By using films, students can gain knowledge from an audio and visual basis.
4. Utilization of Email to collect student assignments. Collecting assignments through email makes it easier for teachers when teaching with a large number of classes.
5. Utilization of mailing list for discussion of the material being taught. Through mailing list Teachers can create their own groups, either within a class or a school, to communicate. Here, Islamic Education teachers provide information on the learning material to be presented at the meeting via mailing list.
6. Utilization of the internet by using internet facilities such as web blog and e-learning. For learning inside or outside the classroom, teachers can display all their work or ideas. Web blog can be described as a teacher's personal newspaper. Teachers can upload all Islamic Religious Education learning materials to website. Through this media, students receive learning materials without being limited by the classroom.⁸³ The use of information technology is important in learning Islamic Religious Education. In order to facilitate Islamic Religious Education learning activities, several information technology-based application programs have been created that can be used in learning Islamic Religious Education.

The use of information technology devices for educational development is categorized into three groups, namely;

1. The use of computers to store teaching materials, a term commonly known as Computer Assisted Instructional (CAI). In this case, the learning material delivered is packaged in software. Students can then learn from the programs on the computer. The numerous learning programs created on the computer allow students to perform simulations or provide feedback to other students.
2. Distribution of teaching materials via the internet network. Teaching materials are packaged in the form of webpage or interactive learning programs (CAI). Then the teaching materials are placed on a server connected to the internet so that students can access them using web browser or other internet facilities.
3. A medium for communicating with experts, resource persons, or other students. This communication is used to ask questions about things they don't understand, or to express opinions and respond to the opinions of others. This way, students can get feedback from experts or resource persons, as well as from their peers, about matters related to the teaching material.

According to Rusman, as quoted by Nurfaeda ddk, he put forward several examples of the use of information technology devices for learning purposes:

- 1) The use of LCD projector learning media by educators in delivering lesson materials through Power Point applications and other presentation applications.
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The benefits of information technology in supporting the implementation of learning are:

- 1) Improving the quality of learning
- 2) Expanding access to education
- 3) Helps visualize abstract ideas
- 4) Make it easier to understand the material being studied
- 5) Make learning materials more interesting
- 6) Allows for interaction between learning and the material being studied.

I. Solutions to Facing Obstacles in Utilizing Information Technology in Learning

Obstacles encountered in the use of information technology need to be addressed with solutions to maximize the learning process. Overcoming these obstacles requires effective collaboration from various stakeholders, including the government, schools, and teachers, to work together and maximize the use of information technology in learning.

The efforts that teachers should make to overcome the obstacles they face in utilizing information technology are:

1. Taking training both conventionally and online
2. Autodidact or independent learning
3. Attending seminars and workshops
4. Reading relevant journals, books, modules and writing scientific papers
5. Conducting classroom action research
6. Conducting discussions among teachers (peer teaching) ⁷²

Some other solutions that should be implemented to overcome obstacles to the use of information technology in learning are as follows:

- 1) Educators and students should have access to digital technology and the internet in carrying out learning activities.
- 2) Educational institutions should provide information technology-based media in learning.
- 3) Educators provide high-quality learning materials based on information technology, such as instructional videos.
- 4) Educators must also have knowledge and competence or expertise in using information technology tools in learning activities.
- 5) If educators are not yet able to use technology, they will be given special guidance and training so that they can use it.
- 6) Educators who still do not want to use this technology, they must still use this technology by providing direction and motivation.
- 7) Educators balance the methods of delivering material using information technology.
- 8) The local government must conduct observations in its area to find out the information technology-based facilities and infrastructure of educational institutions and develop them with the available budget and funds.

⁷²Delia Sari Batubara, "Information and Communication Technology Competence of Elementary School/Islamic Elementary School Teachers (Portrait, Factors and Efforts to Improve Them)" . . . , p. 14.

- 9) Support from various parties, such as educators and students in learning activities that use information technology.⁷³

The solutions above can help prevent obstacles from arising when utilizing information technology in learning. This will make learning easier and more enjoyable, without any obstacles.

J. Challenges and Opportunities for Islamic Education in the Digital Era in the 21st Century

In an effort to improve digital literacy, the mentoring mechanism can be carried out in stages as follows:

- a) . Providing an understanding of the importance of personal data protection and awareness of the dangers of irresponsible data misuse.
- b) . Teach manners and ethics in interacting in cyberspace, because the internet is part of the real world and requires the same behavior.
- c) . Directing to seek credible sources of information and avoid the spread of fake news (hoaxes) by teaching the ability to check the truth of information before believing it.
- d) . Prioritizing usefulness in internet use, avoiding wasting time on less useful things, and making students aware of the importance of selectivity in obtaining information.
- e) . Encourage mutual respect and maintain harmony in the digital world, avoid cyberbullying, and teach students to deal with differences of opinion wisely and without bullying.⁷⁴

Islamic education in the 21st century's digital era faces both complex challenges and promising opportunities. Advances in digital technology have transformed the way we learn, access information, and interact with the world around us. In this context, it is important to understand the challenges faced in integrating digital technology into Islamic education, as well as the opportunities that can be leveraged to enhance religious teaching and understanding.

One of the main challenges in Islamic education in the digital age is ensuring the authenticity and reliability of content delivered through digital technology. In an era of rapid and abundant information, strict oversight is necessary to prevent the spread of false, inaccurate, or otherwise inconsistent with Islamic teachings. Educators need to ensure that materials delivered through digital technology remain consistent with Islamic principles and can be relied upon as a source of accurate and valid information. There are also challenges related to the gap in technological accessibility. Some regions may lack adequate access to technological infrastructure, thus limiting the accessibility of Islamic education through digital platforms. Economic disparities can also impact an individual's ability to utilize digital technology in Islamic education. Efforts must be made to address this gap and ensure that Islamic education through digital technology is accessible to all levels of society without exception. However, amid these challenges, there are significant opportunities to be exploited. Digital technology opens the door to broader and global access to Islamic education. Through online platforms, individuals from various parts of the world can access high-quality Islamic educational resources. This enables the global dissemination of religious knowledge and

⁷³Edi Wianto, et al. "Utilization of Information Technology-Based Learning Media", *Journal of Education and Teaching*, Vol. 2. No. 2, 2021, p. 10.

⁷⁴ Ahmad Muflihun and Toha Makhshun, "The Role of Islamic Religious Education Teachers in Improving Students' Digital Literacy as a 21st Century Skill," *TA'DIBUNA: Journal of Islamic Religious Education*, 3.1 (2020), 91–103 (pp. 100–101).

enhances intercultural understanding and tolerance. With the right approach, Islamic education can reach a wider audience and positively benefit Muslims worldwide.

The use of digital technology also provides opportunities for developing more interactive, creative, and engaging learning methods in Islamic education. Videos, animations, simulations, and other multimedia content can make learning more engaging and help students better understand religious concepts. Direct interaction through online platforms also encourages discussion and collaboration between students and educators, strengthening the learning process. Digital technology enables more efficient evaluation and monitoring in Islamic education. With online platforms, educators can track individual student progress, provide timely feedback, and identify areas for improvement. This helps increase the effectiveness of teaching and learning, as well as providing opportunities for adapting and improving learning content. To improve digital literacy in Islamic education, mentoring mechanisms can be implemented gradually. It is crucial to provide an understanding of the importance of personal data protection and awareness of the dangers of irresponsible data misuse. Furthermore, teaching etiquette and ethics in online interactions is also necessary, as the internet is part of the real world and requires the same behavior. Directing students to seek credible sources of information and avoid the spread of fake news (hoaxes) is also an important step in developing digital literacy. Students also need to be made aware of the importance of internet use and selectivity in obtaining information. Finally, it's crucial to encourage mutual respect and maintain harmony in the digital world, avoid cyberbullying, and teach students to handle differences of opinion wisely and without resorting to violence.

CONCLUSION

The integration of information technology in Islamic education has enormous potential to improve the quality of the teaching and learning process. Information technology provides opportunities to present learning materials in a more interactive, engaging, and accessible manner for students. Furthermore, the use of technology can expand learning resources, encourage independent learning, and increase student motivation and participation. However, technology integration also faces various challenges, such as limited facilities and infrastructure, low digital competency among some educators, and the potential for misuse of technology by students. These challenges require appropriate strategies, including improving teachers' digital competency, strengthening digital literacy, providing adequate technological facilities, and monitoring technology use to ensure it remains aligned with Islamic education values.

With a wise and strategic approach, information technology can be an effective tool in supporting Islamic Education learning in the digital era. Harmonious integration between the use of technology and the strengthening of Islamic values can help shape a generation that is not only academically intelligent, but also has good character and morals in accordance with Islamic principles. Therefore, information technology should be used as a supporting tool for education, not the main goal, so that Islamic Education learning remains relevant and adaptive to the times, the use of information technology in Islamic education in the era of globalization brings great opportunities in improving the quality and access to education. However, existing challenges must be faced wisely so that technology can be utilized optimally. With cooperation between various parties and the use of appropriate technology, Islamic education can develop and spread more widely, without sacrificing religious values and deep interaction between teachers and students, the obstacle to the use of information technology in Islamic religious learning is not fully utilizing information technology, Solutions for the use of information technology in Islamic religious education attend seminars on the use of information technology, read journals, books conduct research on learning that uses technology.

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