APPLICATION OF TECHNOLOGY IN ISLAMIC EDUCATION MANAGEMENT  
(CASE STUDY AT MAN 4 PANDEGLANG)

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Abstrak


Abstract

The important role of Islamic education in shaping the noble character of the nation's younger generation is widely acknowledged. In the era of information and communication technology, these advancements have transformed various aspects of human life, including education. The implementation of technology in Islamic education management holds the potential for significant benefits, such as enhancing school administration efficiency. This study utilizes a qualitative research method to
gain a comprehensive understanding of the application of technology in Islamic education management at MAN 4 Pandeglang. Data is collected through interviews, observations, and document analysis to ensure a deep comprehension of the subject matter. The research findings demonstrate that the application of technology in Islamic education management at MAN 4 Pandeglang has yielded significant impacts. The utilization of information and communication technology (ICT) in school administration has enhanced the efficiency and effectiveness of educational management. Moreover, the adoption of e-learning, mobile applications, and multimedia technology has improved the quality of Islamic education and increased student and teacher engagement in the educational process. In order to ensure sustainability, the implementation of technology needs to be continuous, enabling MAN 4 Pandeglang to develop a modern, efficient, and effective educational environment. This endeavor will help provide high-quality Islamic education to students and strengthen the school’s role in promoting the values of Islam, which are good and righteous.

Keywords: Islamic Education, Educational Management, Information and Communication Technology, Technology Implementation

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<tr>
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<td>March 02 2023</td>
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A. Introduction
The important role of Islamic education in shaping noble character and strong religious understanding in the younger generation is widely recognized (Anwar, 2016). Apart from providing religious knowledge, Islamic education holds significant importance in character formation. The mission of Islamic religious education is to educate individuals to become pious and righteous beings, with the ultimate goal of creating a socially prosperous and harmonious condition in the universe, which is a mercy for all creatures.

Information technology has transformed various aspects of human life, including the field of education. The development of Information and Communication Technology (ICT) has a significant impact on various aspects of human life, including education (Marryono Jamun, 2018) The integration of ICT in the context of education is reflected in the use of ICT strategies and products in the learning process.

In a study conducted by (Mohamad Miftah, 2022) teachers expressed a positive view regarding the effectiveness of integrating Information and Communication Technology (ICT) to support the teaching and learning process in the classroom. The research findings indicate that the use of ICT in education has a
significant impact on both teachers and students. The utilization of technology in Islamic education management has the potential to provide benefits such as improving school administration efficiency, enriching teaching methods, increasing student participation, and facilitating communication among all parties involved (Rindo, 2022).

A compelling case study for analysis is MAN 4 Pandeglang, a State Islamic Senior High School committed to providing quality Islamic education to its students. By implementing technology in their educational management, MAN 4 Pandeglang has the potential to optimize the learning process and strengthen the integration of religious values in education (Website MAN4Pandeglang, 2022).

Previous research on the implementation of technology in Islamic education management has provided valuable insights. The findings of previous studies indicate that the use of information technology in school administration can improve efficiency and facilitate the management of student and teacher data, as well as the execution of administrative tasks and functions such as student administration, curriculum administration, public relations administration, personnel administration, correspondence and archiving administration, financial administration, as well as facility and infrastructure administration (Aulia Rosali & Tolla, 2020).

Another study also revealed that the use of technology in active engagement with digital artifacts can make a valuable contribution to enriching and strengthening teachers’ understanding of learning content and effective teaching methods (Perwita, 2020).

This research aims to examine the implementation of technology in Islamic education management at MAN 4 Pandeglang. Analysis will be conducted on the use of technology in school administration, the implementation of technology in the teaching and learning process, as well as the identification of the impacts resulting from the implementation of technology. The challenges faced in adopting technology will also be identified, and strategic recommendations will be formulated for the development of technology in Islamic education management at MAN 4 Pandeglang.

It is expected that this research will make a significant contribution to the development of quality and innovative Islamic education in MAN 4 Pandeglang and other Islamic educational institutions. Through a deeper understanding of the application of technology in Islamic education management, educational institutions are expected to create a more modern, efficient, and competitive learning environment. By effectively utilizing technology, MAN 4 Pandeglang and other Islamic educational institutions can improve school administration efficiency, enrich teaching methods, and increase student participation and engagement.
Furthermore, the implementation of technology can facilitate better communication among all stakeholders, including students, teachers, parents, and other relevant parties.

Through the development of quality and innovative Islamic education, it is hoped that the younger generation can be shaped with noble character, strong religious understanding, and a sense of social responsibility and spiritual resilience. Therefore, this research has the potential to make a significant contribution to the advancement of Islamic education in MAN 4 Pandeglang and inspire other Islamic educational institutions to adopt technology in their educational management.

Lastly, this research is also expected to provide strategic input and recommendations to MAN 4 Pandeglang and relevant stakeholders for the development and improvement of technology implementation in Islamic education management. This way, Islamic educational institutions can continue to adapt to the ongoing developments in information technology and remain relevant in providing quality Islamic education in the modern era.

B. Research Methodology

According to (Creswell, 2008)(Kusmarni, 2010) (Fadli, 2021) in qualitative research such as case studies, researchers can formulate research questions and sub-questions by identifying relevant issues within the explored theme. In the research "The Application of Technology in Islamic Education Management at MAN 4 Pandeglang," researchers can use qualitative research methods to answer these research questions. In qualitative research, researchers focus on gaining in-depth understanding of the phenomenon under study and collect data through interviews, observations, and document analysis to obtain a rich and comprehensive understanding of the application of technology in Islamic education management at MAN 4 Pandeglang.

Preliminary Study: Conducting a preliminary study by reviewing relevant literature to understand the context and background of the application of technology in Islamic education. This preliminary study helps in acquiring a deep understanding of the use of technology in Islamic education and previous perspectives related to the research topic.

Research Design: Formulating a qualitative research design that aligns with the research objectives. This research design includes the selection of participants, data collection techniques, and relevant data analysis processes using a qualitative approach. For example, this study can involve in-depth interviews with students, teachers, and educational staff at MAN 4 Pandeglang to gain a better understanding of the use of technology in their educational management.
Data Collection: Collecting data through techniques such as interviews, participatory observation, and document analysis. Interviews are used to gather the views, experiences, and perceptions of participants regarding the application of technology in Islamic education management at MAN 4 Pandeglang. Participatory observation is conducted by directly observing the use of technology in teaching and school administration activities. Document analysis is used to gather information from documents related to the implementation of technology in Islamic education at MAN 4 Pandeglang.

Data Analysis: Analyzing the collected data using qualitative analysis methods. The data analysis process includes transcribing interviews, coding, and identifying patterns or themes that emerge from the data. Approaches such as content analysis or thematic analysis can be used to understand and interpret the qualitative data obtained.

Interpretation and Findings: Interpreting the findings from the data analysis as a response to the research questions. Data interpretation involves synthesizing relevant information and connecting it with related theories to gain a deeper understanding of the application of technology in Islamic education management at MAN 4 Pandeglang.

Conclusion and Recommendations: Summarizing the research findings and formulating recommendations based on the analysis results. The conclusion describes significant findings related to the application of technology in Islamic education management at MAN 4 Pandeglang, while recommendations can provide practical advice for educational institutions to enhance the use of technology in Islamic education management at MAN 4 Pandeglang.

C. Results and Discussion
1. Basic Concepts of Islamic Education Management

Etymologically, the word "management" comes from the English word "management," which means administration, organization, or leadership (Septuri, 2021). Islamic education management is the process of arranging and managing Islamic educational institutions involving Muslim human resources and mobilizing them to achieve Islamic education goals in an effective and efficient manner (Listiowaty, 2020).

According to Qomar (2007:10) in the journal (Barsihannor, 2021), Islamic education management has a definitive meaning as the process of managing Islamic educational institutions in an Islamic manner with appropriate strategies to optimize learning resources and related matters to achieve Islamic education goals effectively and efficiently.
The aim of Islamic education management is to ensure that all aspects and processes are well-managed so that the educational process can be carried out in accordance with Islamic teachings. With effective management, efforts to achieve Islamic education goals can be more easily realized. (Syaban, 2022).

According to (Lani, 2019) the objectives of management in Islamic education are closely related to the general objectives of Islamic education. The objectives of Islamic education, as quoted by At-Syabani, include:

a. Preparation for the afterlife.
b. Instilling a scientific spirit in learning.
c. Preparing students who are professional in Islamic principles and maintaining spiritual and religious life.
d. Preparing students to become skilled, creative, and morally upright individuals in accordance with national and Islamic education objectives.

Robbins and Coulter in the journal (Suwatah, 2017) explain that the essential functions of management consist of planning, organizing, leading, and controlling. Mahdi bin Ibrahim also states that the functions of management or leadership tasks involve planning, organizing, directing, and supervising. In Islamic teachings, its followers are encouraged to do everything in an organized and orderly manner. This is because truth that is not well-organized can easily be destroyed by regular errors. Therefore, the directing and supervising functions are also important aspects of Islamic education management.

Overall, Islamic education management is the process of managing Islamic educational institutions involving Muslim human resources to achieve Islamic education goals effectively and efficiently. The goals of Islamic education include preparation for the afterlife, the development of a scientific spirit, the formation of professional and morally upright students, and the preparation of students to become skilled and creative individuals in line with national and Islamic education objectives. The basic functions of management, such as planning, organizing, directing, and supervising, are also crucial in achieving these goals. By implementing good management, Islamic educational institutions can achieve success in realizing Islamic education objectives.

2. Challenges and Issues in Islamic Education Management

Quality and management, Islamic educational institutions in Indonesia still face challenges and issues. There is a lack of availability or inadequate quality in the management of Islamic educational institutions, which has an impact on the outcomes produced by these institutions. Education observers often perceive that the implementation of management in Islamic educational institutions is still not
organized or not fully implemented well in terms of leadership, human resources, and administration. This significantly affects the quality of education provided by Islamic educational institutions. (Fathih, 2023).

In Islamic educational institutions, one of the frequently discussed issues is curriculum development. In madrasas, the curriculum often contains an excessive amount of content (overloaded) and lacks clear connections between religious and general subjects. The focus of the madrasa curriculum is more on the cognitive aspect, neglecting the affective and psychomotor aspects. Therefore, curriculum improvement becomes an urgent priority as a suitable curriculum is needed for Islamic educational institutions to achieve educational goals effectively. Islamic educational institutions also need to adapt the curriculum to the development of time and the demands of holistic education, in line with the thoughts of Suwito (2008) and (Rahman & Akbar, 2021). The curriculum is an extremely important issue in the education field.

Furthermore, Islamic educational institutions also face challenges in recruiting and developing teaching staff. Finding qualified and skilled teachers in Islamic education is crucial. Additionally, supervision and evaluation are also important aspects of Islamic education management. Good supervision and appropriate evaluation are needed to ensure effectiveness and efficiency in Islamic education management. In order to address these challenges and issues, Islamic educational institutions need to implement effective measures. This includes improving the quality of management, developing relevant curricula, improving the recruitment and development processes of teaching staff, and implementing a good system of supervision and evaluation (Rahman & Akbar, 2021). By addressing these challenges, it is expected that Islamic educational institutions can improve their quality and management to produce quality graduates.

3. The Role of Technology in Islamic Education Management

Technology plays an important role in strengthening Islamic education management, including:

a. Efficient school administration: The use of information and communication technology (ICT) in school administration can improve efficiency in data management, such as assessment data in learning, ICT training data acquisition, and administrative services. (Sholeh Kurniandini et al., 2022)

b. Interactive learning: The utilization of technology such as e-learning provides opportunities for interactive, flexible, and online-accessible learning. The use of the internet in open and distance education brings significant benefits. E-moderating facilities enable easy communication between teachers and students...
without being limited by distance and time. Teachers and students can use well-structured teaching materials that can be evaluated effectively. Students have the freedom to learn and review materials anytime and anywhere through online access. Additional information can also be easily accessed through the internet. Discussions between teachers and students can be conducted online with wider participation. E-learning transforms the role of students into more active learners. Additionally, online learning is efficient as it does not require the physical presence of students in a specific location. (Seyoningsih, 2015).

c. Communication and collaboration: Educational mobile applications, also known as mobile apps, have become a popular and effective means to facilitate communication, information access, and parental involvement in children's education. The use of mobile app technology in child education provides ease in accessing information about the curriculum, assignments, activity schedules, and academic progress of children in real-time. Parents can easily monitor their children's progress and receive up-to-date information through notifications, messages, or reports provided by the application. Moreover, educational mobile apps enable parents to interact directly with teachers or school staff, provide feedback, and seek advice regarding their children's education (Sappaile et al., 2023).

d. Enhancement of learning quality: Technology can be used to present diverse learning media and resources. According to (Mustaqim, 2014) learning media serves as a tool that connects educators and learners in the learning process. Learning media acts as a mediator to provide information and deliver messages, thus creating an effective and efficient learning process. Through learning media, communication is established between educators and learners in the learning process.

4. Use of Information and Communication Technology (ICT) in Administration of MAN 4 Pandeglang

In this study, we conducted interviews with 3 teacher respondents and 3 administrative staff respondents at MAN 4 Pandeglang. The data we obtained from the interviews were processed and analyzed to reveal the use of Information and Communication Technology (ICT) in madrasah administration. The following table analyzes the data obtained:
Table 1. The Use of Information and Communication Technology (ICT) in MAN 4 Pandeglang Administration

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Use of ICT in Madrasah Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wawan Hermawansyah (History Teacher)</td>
<td>Uses Academic Information System application for student data and attendance management. Also utilizes document management software. Faces challenges in understanding complex ICT features. Recommends regular ICT training.</td>
</tr>
<tr>
<td>Purjaya (Fiqh Teacher)</td>
<td>Uses ICT for processing student grades and generating reports. Implements digital archiving system for administrative documents. Feels the need to enhance knowledge and skills in ICT usage. Proposes improvement in ICT infrastructure in the madrasah.</td>
</tr>
<tr>
<td>Ade S (history of Islamic education)</td>
<td>Uses instant messaging apps and email for internal communication with fellow teachers and administrative staff. Utilizes specialized software for storing and managing personnel data. Requires more intensive ICT training and mentoring. Recommends improved access to ICT devices.</td>
</tr>
<tr>
<td>Elis Husna (Administrative Staff)</td>
<td>Utilizes ICT in student data management and document archiving. Feels the need to enhance understanding and proficiency in operating ICT applications and devices. Suggests regular training in ICT usage.</td>
</tr>
<tr>
<td>Asep S (Administrative Staff)</td>
<td>Uses ICT for financial processing and correspondence administration. Faces challenges related to the availability of adequate hardware. Suggests improvement in ICT infrastructure and budget for acquiring better ICT devices.</td>
</tr>
<tr>
<td>Diah G (Administrative Staff)</td>
<td>Uses financial management applications and document archiving software. Recognizes the need for increased technology knowledge and skills. Recommends structured ICT training and mentoring programs.</td>
</tr>
</tbody>
</table>

Interview data collected on Monday, June 5th, 2023, at 09:20 AM

Based on the data in the table above, from the direct interviews conducted on Monday, June 5, 2023, at 09:20 (Guru, Staff TU, 2023) several conclusions can be drawn. The teachers and administrative staff at MAN 4 Pandeglang have been using Information and Communication Technology (ICT) in madrasah administration. The use of ICT encompasses various aspects, such as student data management, attendance, grades, report generation, document archiving, and internal communication. The challenges faced in using ICT include complex understanding of ICT features, lack of knowledge and skills in using ICT, and limited access to adequate hardware.

The proposed recommendations include regular ICT training to enhance understanding and skills in ICT usage, improvement of ICT infrastructure in the
madrasah, increased access to ICT devices, and the implementation of structured ICT training and mentoring programs.

This data indicates that the use of ICT in madrasah administration has significant benefits but also faces challenges that need to be addressed for effective and efficient utilization. The proposed recommendations can serve as guidelines for improving the use of ICT in madrasah administration.

5. Utilization of E-Learning in the Learning Process of MAN 4 Pandeglang

MAN 4 Pandeglang utilizes e-learning as a learning method in the process of Islamic education. With e-learning, students can access learning materials online through the digital platforms provided. Learning materials presented through e-learning can be in the form of text, video, audio, as well as assignments and exercises that can be accessed and done flexibly.

Table 2. Utilization of E-Learning in the Learning Process

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Wawan H (Teacher)</th>
<th>Purjaya (Teacher)</th>
<th>Ade S (Teacher)</th>
<th>Fahmi (Student)</th>
<th>Iqbal (Student)</th>
<th>Indri (Student)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of e-learning platforms</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Availability of online learning</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>materials</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Active involvement of students in</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>e-learning</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Collaboration and interaction</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>between students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student motivation in using</td>
<td>High</td>
<td>Sedang</td>
<td>High</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>e-learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Interview data collected on Monday, June 5th, 2023, at 09:20 AM

It is shown in the above table that "Yes" indicates that respondents confirmed positive use or experience regarding the respective indicators, while "No" indicates that respondents did not experience or use that feature in e-learning. Additionally, the level of student motivation is categorized as "High" and "Medium" based on respondents’ responses.

In this data analysis, it can be concluded that the use of e-learning platforms: All teachers and most students reported using e-learning platforms in the learning process. However, one teacher did not use the platform. This is consistent with
Constructivist and Cognitive theories, which emphasize the importance of using technology to facilitate active learning and concept understanding.

Availability of online learning materials: All teachers and students reported the availability of online learning materials. This indicates that e-learning has supported students' access to learning materials online. Constructivist and Cognitive theories support this concept as it allows students to construct their knowledge through interaction with online learning materials.

Active student engagement in e-learning: Most teachers and two students reported active student engagement in e-learning. They stated that students actively participate in online learning activities such as participating in discussions, answering questions, and completing assignments given through the e-learning platform. However, one student reported a lack of active engagement in e-learning. This can be explained by Constructivist and Motivation theories, where active student engagement in online learning will affect their understanding of the material and motivation to learn.

Collaboration and interaction among students: Most teachers reported collaboration and interaction among students through the e-learning platform. They stated that students can communicate and share knowledge with fellow students through collaborative features such as discussion forums and joint projects. However, one teacher reported a lack of collaboration and interaction among students in e-learning. This relates to Social Constructivism theory, where social interaction and collaboration among students are considered important for building shared knowledge.

Student motivation in using e-learning: The majority of teachers and students reported high levels of student motivation in using e-learning. They stated that students have a strong interest in utilizing the e-learning platform for learning and feel motivated to participate in online learning. However, there is variation in the reported levels of student motivation. This can be explained by Motivation and Constructivism theories, where high motivation will enhance student learning effectiveness.

By analyzing this interview data, it can be concluded that the utilization of e-learning in the learning process has provided a positive contribution to enhancing the quality of Islamic education. The relevant theories such as Constructivism, Cognitive, Motivation, and Social Knowledge Construction support the use of e-learning as an effective learning tool in this context. (Guru, Staff TU, 2023)
6. Utilization of Technology in Improving the Quality of Islamic Education

MAN 4 Pandeglang utilizes technology to improve the quality of Islamic education. For example, the use of multimedia in presenting learning materials, interactive simulations that enrich students' learning experience, and the use of specialized software for evaluation and assessment of learning outcomes. With the utilization of this technology, the process of Islamic education in MAN 4 Pandeglang becomes more interesting, interactive, and effective in enhancing students' understanding.

Here is a table that illustrates the respondents' perspectives on the utilization of technology in improving the quality of Islamic education at MAN 4 Pandeglang:

<table>
<thead>
<tr>
<th>No</th>
<th>Respondent</th>
<th>Type Utilization of Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dewi S (Teacher)</td>
<td>Using multimedia for presenting learning materials, utilizing interactive simulations, and evaluation software</td>
</tr>
<tr>
<td>2</td>
<td>Ehat S (Teacher)</td>
<td>Utilizing multimedia as a learning medium, integrating interactive simulations, and using software</td>
</tr>
<tr>
<td>3</td>
<td>Wantinah (Teacher)</td>
<td>Implementing multimedia in delivering learning materials, using interactive simulations, and evaluation software</td>
</tr>
<tr>
<td>4</td>
<td>Siti Nuraeni (Student)</td>
<td>Using multimedia in learning, engaging in interactive simulations, and using evaluation software</td>
</tr>
<tr>
<td>5</td>
<td>Neng Siti Juleha (Student)</td>
<td>Utilizing multimedia in the learning process, participating in interactive simulations, and using software</td>
</tr>
<tr>
<td>6</td>
<td>Siti Rohma Nabila (Student)</td>
<td>Engaging in learning with multimedia, interacting with interactive simulations, and using software</td>
</tr>
</tbody>
</table>

Interview data collected on Monday, June 5th, 2023, at 09:20 AM

The table above explains that respondents, both teachers and students at MAN 4 Pandeglang, utilize technology to improve the quality of Islamic education. They use multimedia for presenting learning materials, engage in interactive simulations, and use evaluation software to enhance students' understanding and learning experience. The utilization of technology makes the process of Islamic education more interesting, interactive, and effective in improving the quality of learning. (Guru, Staff TU, 2023)

7. The Impact of Technology Implementation in Islamic Education Management at MAN 4 Pandeglang

In the rapidly developing digital and information age, advancements in science and technology occur quickly. This development brings both positive and negative
impacts that are open to all users of digital information technology. Technology has changed many daily human habits, and falling behind in keeping up with technological advancements can mean a loss of information mastery. The speed and ability to filter accurate information can provide opportunities for faster progress. (Salsabila et al., 2023)

The implementation of technology in the management of Islamic education at MAN 4 Pandeglang has shown several positive impacts, including: Improved efficiency in data management: With the presence of information technology, student and personnel data management at MAN 4 Pandeglang becomes more efficient. An integrated information system allows for faster and accurate data management. Student data, attendance records, schedules, and other important information can be easily accessed and updated in real-time.

More efficient document archiving: The use of technology in document archiving enables administrative staff to store and manage documents digitally. This reduces the use of paper and large physical storage space. Documents can be easily accessed and searched through a digital archiving system, speeding up the searching process and saving time.

Better internal communication: Information and communication technology (ICT) facilitates internal communication at MAN 4 Pandeglang. Instant messaging applications, emails, and online communication platforms allow teachers and administrative staff to communicate quickly and efficiently. Important information can be easily shared, discussions can be conducted virtually, and meetings can be scheduled without the need for physical presence.

Focus on strategic activities: With technology supporting school administration, administrative staff at MAN 4 Pandeglang can allocate more time and resources to strategic activities. They can focus on program development, monitoring student progress, and collaboration with other stakeholders. This helps improve the overall quality of education management.

With the implementation of technology in Islamic education management, MAN 4 Pandeglang can achieve higher efficiency and improve effectiveness in performing administrative tasks and functions. The utilization of technology helps optimize data management, document archiving, and internal communication, resulting in significant benefits in the effort to enhance the quality of Islamic education in the school.

8. Challenges and Obstacles in the Implementation of Technology at MAN 4 Pandeglang

According to UNESCO, cited through a journal (Sawitri et al., 2019) both developed and developing countries need to have access to Information and
Communication Technology (ICT) and provide the best educational facilities. This is important to create a younger generation that is ready to participate in modern society and contribute to the knowledge era. Despite the benefits, there are also challenges and obstacles. ICT plays a crucial role in education.

Although the implementation of technology in the management of Islamic education at MAN 4 Pandeglang has significant benefits, it is not without several challenges and obstacles. Here are some of the challenges faced in the implementation of technology at MAN 4 Pandeglang:

a. Limited access and infrastructure: The main challenge is the limited access to the internet, as the school is located in a rural area. In addition, the limited availability of adequate hardware infrastructure can also be a hindrance in the implementation of technology at MAN 4 Pandeglang.

b. User readiness and understanding: The implementation of technology in education management requires sufficient readiness and understanding from all users, including teachers and administrative staff. The challenge is to prepare and empower the staff to effectively and optimally use technology. Adequate training and support are needed to enhance their understanding and skills in utilizing technology.

c. Security and privacy: In the utilization of educational technology, appropriate policies and actions are needed to ensure the security and privacy of the data being used. This challenge is related to the management and protection of student data, personnel records, and other important information collected and used in the educational technology system. Policies and actions focused on data security and user privacy are required. (Guru, Staff TU, 2023)

In facing these challenges and obstacles, MAN 4 Pandeglang needs to take strategic steps, such as improving technology infrastructure and internet access, providing regular training and support to school staff, and implementing strict security and privacy policies. By overcoming these challenges, the implementation of technology in the management of Islamic education at MAN 4 Pandeglang can proceed more smoothly and effectively.

9. **Recommendations and Strategies for Technological Development in Islamic Education Management at MAN 4 Pandeglang**

The following are recommendations and strategies for technological development in Islamic education management at MAN 4 Pandeglang:

a. Provide training and competency enhancement programs: It is important for MAN 4 Pandeglang to provide training and competency enhancement programs for teachers and educators regarding the use of technology in Islamic education.
management. This training can include understanding the use of relevant applications, platforms, and software, as well as effective teaching strategies with technology. With improved competency, teachers and educators will be better prepared to integrate technology into teaching and school management.

b. Enhance technology infrastructure and internet access: MAN 4 Pandeglang needs to focus on improving technology infrastructure and ensuring adequate internet access. This includes acquiring necessary hardware such as computers, laptops, and mobile devices, as well as ensuring stable and fast internet connectivity throughout the school environment. With adequate infrastructure, the implementation of technology in Islamic education management can run smoothly and efficiently.

c. Develop applications and systems tailored to specific needs: MAN 4 Pandeglang can consider developing applications and systems that cater to the specific needs of the madrasah. This may involve the development of specialized mobile applications that facilitate communication and collaboration among students, teachers, and parents. Additionally, the development of an academic information system that effectively facilitates student and personnel data management should also be considered.

By implementing these recommendations and strategies, MAN 4 Pandeglang can strengthen the utilization of technology in Islamic education management. This will help improve the efficiency, effectiveness, and quality of Islamic education in the school, as well as assist students in gaining a better understanding of religion and Islamic values.

**D. Conclusion**

In the context of MAN 4 Pandeglang, the implementation of technology in Islamic education management has had a significant impact. The use of Information and Communication Technology (ICT) in school administration has improved the efficiency and effectiveness of education management. Additionally, the utilization of e-learning, mobile applications, and multimedia technology has enhanced the quality of Islamic education and the engagement of students and teachers in the educational process.

However, challenges and obstacles also need to be addressed in the implementation of technology at MAN 4 Pandeglang, such as limited access and technology infrastructure, user understanding and competency, as well as data security and privacy. Therefore, recommendations and strategies for technological development become important, including training and competency enhancement for teachers and educators, improving technology infrastructure and internet
access, developing suitable applications and systems, as well as monitoring and evaluating the implementation of technology.

MAN 4 Pandeglang can continue to develop the sustainable implementation of technology in Islamic education management. This will help create a modern, efficient, and effective educational environment, capable of providing high-quality Islamic education for students and strengthening the school's role in disseminating good and correct Islamic values.

References


