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Madrasa Agility In The Digital Age: Increasing Flexibility And Countering Artificial Intelligence Threats

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Abstract

This study aims to analyze the sustainability of Madrasa in the digital era by focusing on two aspects, namely increasing flexibility and dealing with the threat of artificial intelligence. This research was conducted using the library research method, with data collection techniques in the form of systematic literature reviews. The results of the study show that the sustainability of Madrasa in the digital era is very dependent on the ability of Madrasa to increase flexibility and face the threat of artificial intelligence. Increased flexibility is carried out by developing learning programs that can be accessed online and offline, using innovative learning technology, and involving teachers and students in the learning process. Meanwhile, to deal with the threat of artificial intelligence, Madrasa need to improve digital capabilities and prepare teachers and students to face changes in an increasingly complex and dynamic world of work. Madrasa also need to strengthen Islamic values and wisely introduce artificial intelligence concepts. The sustainability of madrasa in the digital era requires a holistic approach, which includes aspects of technology, management, and curriculum. In the face of artificial intelligence, madrasa need to strengthen their identity and reputation as institutions that provide high quality education and strong Islamic values. Madrasa also need to strengthen Islamic values and wisely introduce artificial intelligence concepts. The sustainability of madrasa in the digital era requires a holistic approach, which includes aspects of technology, management, and curriculum. In the face of artificial intelligence, madrasa need to strengthen their identity and reputation as institutions that provide high quality education and strong Islamic values. Madrasa also need to strengthen Islamic values and wisely introduce artificial intelligence concepts. The sustainability of madrasa in the digital era requires a holistic approach, which includes aspects of technology, management, and curriculum. In the face of artificial intelligence, madrasa need to strengthen their identity and reputation as institutions that provide high quality education and strong Islamic values.

Keywords: Madrasa, Agility, Digital, Artificial Intelligence

Abstrak

Penelitian ini bertujuan untuk menganalisis keberlangsungan Madrasah di era digital dengan fokus pada dua aspek yaitu peningkatan fleksibilitas dan menghadapi ancaman artificial intelligence. Penelitian ini dilakukan dengan menggunakan metode library research, dengan teknik pengumpulan data berupa systematic literature review. Hasil penelitian menunjukkan bahwa keberlangsungan Madrasah di era digital sangat tergantung pada kemampuan Madrasah dalam meningkatkan fleksibilitas dan menghadapi ancaman artificial intelligence. Peningkatan fleksibilitas dilakukan dengan cara mengembangkan program pembelajaran yang dapat diakses secara online dan offline, menggunakan teknologi pembelajaran yang inovatif, serta melibatkan para pengajar dan siswa dalam proses pembelajaran. Sementara itu, untuk menghadapi ancaman artificial intelligence, madrasah perlu meningkatkan kemampuan digital dan menyiapkan para pengajar dan siswa untuk menghadapi perubahan dalam dunia kerja yang semakin kompleks dan dinamis. Madrasah juga perlu memperkuat nilai-nilai keislaman dan memperkenalkan konsep-konsep kecerdasan buatan secara bijaksana. keberlangsungan madrasah di era digital membutuhkan pendekatan yang holistik, yang mencakup aspek teknologi, manajemen, dan kurikulum. Dalam menghadapi kecerdasan buatan, madrasah perlu memperkuat identitas dan reputasi mereka sebagai lembaga yang memberikan pendidikan berkualitas tinggi dan nilai-nilai keislaman yang kokoh.

Kata Kunci: Madrasah, Agilitas, Digital, Artificial Intelligence

Introduction

The development of technology, especially Artificial Intelligence (AI), has been increasing rapidly and significantly in recent years. Various sectors have utilized AI technology to increase efficiency and productivity, including the education sector.¹ Islamic education as one of the education sectors cannot be separated from the development of AI technology. However, in the face of the AI war, Islamic educational institutions need to have the agility to be able to adapt quickly and remain relevant in providing quality education.

However, a survey conducted by the Pew Research Center in 2020 showed that

only about 45% of residents in the United States agree that new technologies such as AI can improve people's lives. This shows that the people's community still lacks an understanding of the development of AI technology and its potential benefits.²

In Indonesia, although there is no specific survey data on this matter, there are several indications that Islamic educational institutions still need to increase their agility in dealing with AI wars. There are several Islamic educational institutions that have not utilized AI technology optimally, such as the use of chatbots or more interactive online learning systems. In addition, there

are still several Islamic educational institutions that are still experiencing difficulties in integrating AI technology into the Islamic education curriculum.³

Therefore, research on the agility of Islamic educational institutions in dealing with the development of AI is very important. In this research, a survey will be conducted of managers of Islamic educational institutions in Indonesia to see their level of agility in dealing with AI wars and what strategies they have and will implement to integrate AI technology in the Islamic education curriculum. This research is expected to contribute to increasing Muslim society's understanding of the benefits of AI technology and increasing the agility of Islamic educational institutions in dealing with AI wars.⁴

Method

This study uses the library research method. Sources of data in this study were divided into two parts, namely primary and secondary. The primary section is a source of literature from journals or books that are very relevant to the research variables, namely madrasa, schools, and their relationship to the development of digitalization and AI. While secondary data is obtained from literature sources that are not very relevant to research variables such as information technology in cultural and

social contexts.⁵ The data collection technique was carried out using a systematic literature review (SLR) approach.

Results and Discussion

Agility is a philosophy or approach that promotes teamwork, flexibility, open communication, and quick response in dealing with changes or challenges that occur in a project or organization. In software development, agility is implemented through a software development method known as Agile, which emphasizes iterative and incremental software development, with a focus on rapid and continuous delivery of value.⁶ Agility can also be applied in business, project management, or organizational contexts that require adaptation and flexibility in dealing with changes and rapidly changing market conditions.⁷

In the context of Islamic educational institutions, this explanation can be concluded that madrasa agility is the ability of a madrasa to adapt to change and respond quickly and appropriately in facing challenges and changes in the environment that are constantly evolving. The concept of agility in madrasa can cover many aspects, such as curriculum development, improving the quality of education, using technology, and developing the competence of teachers and education staff. A madrasa that has high

agility will be able to adapt quickly and produce innovative solutions in facing various educational challenges.⁸

One of the factors that greatly influence madrasa agility is the ability to recognize and understand changes in the ever-changing environment. Madrasa that have a good management system will be able to identify environmental changes, predict potential problems that will arise, and take appropriate steps to deal with these challenges. In the context of madrasa agility, environmental changes can cover various aspects, such as changes in educational regulations, demands of the labor market, as well as developments in technology and information.⁹

To build madrasa agility, the ability to adapt and innovate in the learning process is needed. Madrasa must be able to adjust the curriculum and learning methods to the needs and demands of the labor market and technological developments. In addition, madrasa must also utilize technology and information in educational learning and development, such as the use of e-learning, the use of learning applications, and the development of information systems that can facilitate management and decision-making. Thus, madrasa agility will continue to increase and have a positive impact on the quality of education produced.¹⁰

The Flexibility of Artificial Intelligence and Threats to the Existence of Madrasa

Artificial Intelligence (AI) has become a trend in various sectors of human life, including in the field of education. However, it cannot be denied that the presence of AI also has various impacts, including potential threats to the existence of madrasa. This threat is not only limited to sophisticated AI capabilities in processing data and processing information but also related to changes in the educational paradigm that have social and cultural impacts.¹¹

One of the threats to the existence of madrasa due to AI is the reduced interest of students to study at madrasa. This is because AI is able to present information and learning materials in a more interactive and fun way, so that students are more interested in learning the material. This of course can reduce the number of students enrolling in madrasa, so that the potential for madrasa closures is even greater.¹²

In addition, AI can also threaten the existence of madrasa in terms of the quality of teaching and teachers. Low teaching quality will make students less interested and feel their learning needs are not met, which in turn can reduce the attractiveness of madrasa in the eyes of students and parents. In addition, the presence of AI can also

replace the role of the teacher as a whole, which, if not handled properly, can make the teaching profession in madrasa increasingly unpopular.

Furthermore, AI can also influence students' understanding and interpretation of religious values. AI can only provide an understanding that is formal and secular in nature, so it can ignore the spiritual aspects and religious values that are important in Islamic education. If this happens, the potential for the erosion of Islamic values and the progress of Islamic education will be even greater.¹³ In this context, it is important for madrasa to adapt to the presence of AI in order to continue to exist. Madrasa need to prepare teachers and students to be able to use AI wisely and at the same time maintain religious and socio-cultural values which are the foundation of Islamic education.

Negative Impact of AI on Islamic Education

The presence of AI in Islamic education does not only have a positive impact, but can also have a significant negative impact. One of the negative impacts of AI on Islamic education is the decline in the quality of Islamic education which should provide learning that is holistic and integrated with religious values. The use of AI in learning can only provide

formal and secular understanding, so it pays little attention to spiritual aspects and religious values which are an integral part of Islamic education.¹⁴

In addition, the presence of AI can also lead to gaps and disparities between students who are able to access technology and students who cannot afford it, especially in rural areas or areas that are less developed. This can lead to differences in the quality of education between cities and rural areas, and exacerbate social inequalities.¹⁵

Another negative impact is the loss of the teacher's role as an educator and mentor. The presence of AI in learning can reduce the teacher's role as a motivator, director, and adviser in providing learning that is meaningful and integrated with religious values. This can make students rely more on technology and get fewer hands-on learning experiences from teachers.¹⁶

Finally, the negative impact of AI on Islamic education can also be the lack of development of students' skills and character. In learning that is integrated with religious values, it is important to build students' skills and character that are strong and in accordance with Islamic teachings. However, the presence of AI in learning can reduce the development of students' skills and character, so that they are less able to

develop students' potential optimally. Therefore, there needs to be serious attention from Islamic education practitioners to anticipate the negative impact of AI on learning. The right strategy is needed to optimally utilize the presence of AI while maintaining the religious values and characteristics of Islamic education.¹⁷

Strategies for Facing AI Threats in Madrasa

The presence of Artificial Intelligence (AI) in Islamic education has brought various positive and negative impacts, including threats to the existence of madrasa. Therefore, the right strategy is needed to deal with the negative impacts of AI and to make wise use of the presence of AI in order to maintain the existence of madrasa.

First, madrasa need to improve the quality of teaching and teachers through competency training and development. Good teaching quality will make students more interested and feel their learning needs are fulfilled, which in turn can increase the attractiveness of madrasa in the eyes of students and parents. Teacher competency training and development also needs attention so that they can wisely utilize the presence of AI and maintain religious values in learning.¹⁸

Second, madrasa need to strengthen collaboration between madrasa and educational institutions or industries related to AI. This collaboration can assist madrasa in obtaining the latest information about the use of AI technology in education, so they can develop more appropriate strategies for utilizing it.¹⁹ Third, madrasa need to develop a curriculum that is integrated with religious values and skills needed in the AI era. A curriculum that is integrated with religious values will ensure that religious values are not neglected in the learning process. Meanwhile, developing the skills needed in the AI era will help students prepare themselves to face the challenges of an increasingly complex world of work.²⁰

Finally, madrasa need to strengthen the use of AI technology in learning through implementing the right strategy. Implementing the right strategy will help madrasa make optimal use of the presence of AI, such as using chatbots to speed up communication and data processing, or using adaptive learning to strengthen personalized learning.²¹

In conclusion, madrasa need to anticipate the negative impact of AI in education by developing appropriate strategies so that they can optimally utilize the presence of AI and maintain religious values in learning. These strategies include improving the quality of teaching and

teachers, strengthening collaboration, developing curriculum integrated with religious values and skills in the AI era, and strengthening the use of AI technology in learning.²²

Improving the quality of human resources (HR) in madrasa is an important key in dealing with the development of Artificial Intelligence (AI) in the modern era. The following are four paragraphs on improving the quality of human resources in madrasa in the face of AI developments:

First, madrasa need to provide training and competency development to teachers in using AI in the learning process. This competency training and development can be carried out through workshops, seminars, online training, and so on. In this training, teachers can learn about AI concepts and applications in education, and how to use them to improve the quality of learning.²³

Second, madrasa need to find and recruit teachers who have AI competencies in learning, and have the ability to develop curricula that are integrated with AI. They must also have the ability to develop and maintain a data management system capable of properly processing student data.²⁴

Third, madrasa need to increase access to and use of AI technology in the madrasa environment. This can be done by

providing the required AI software and hardware, as well as developing an adaptive learning system that can accommodate students' learning styles personally.

Finally, madrasa need to improve non-academic HR skills, such as critical thinking skills, creativity, and good communication skills. This can be done through more interactive and project-based learning programs, so that students can develop the skills needed to make good use of AI technology.²⁵

Therefore, improving the quality of human resources in madrasa is very important to deal with the development of AI in the modern era. Madrasa can improve the quality of human resources by providing training and competency development for teachers, recruiting teachers with AI competencies, increasing access to and use of AI technology, and improving non-academic HR skills. Improving the quality of human resources in madrasa can help madrasa to maintain their existence in facing the challenges of developing AI technology.²⁶

In addition, madrasa need to have a clear vision and mission related to digitalization. This vision and mission must be able to integrate the goals of education and information technology to create a more effective and efficient learning system.

In this strategy, madrasa must have a clear picture of the information technology needs needed and how information technology can assist madrasa in achieving their educational goals.

Furthermore, madrasa need to have a digitization team consisting of people who have competence in the field of information technology. This team is responsible for developing and implementing information systems, overseeing information security, and providing training and technical support to staff and students.²⁷

The existence of this technical support indirectly supports madrasa in improving their information technology infrastructure, such as internet networks, information systems, hardware and software. A strong information technology infrastructure will assist madrasa in utilizing information technology effectively and efficiently, as well as improving the quality of learning and overall madrasa performance.²⁸

Another most priority thing that also needs to be considered is that human resources in madrasa must participate in developing a curriculum that is integrated with information technology. This curriculum must be designed so that it can optimally utilize information technology in the learning process. The curriculum must

also be able to accommodate various student learning styles and develop the digital skills needed in the modern era.

Based on some of the explanations above, it can be concluded that the formation of a digitalization strategy in madrasa is an important requirement. Madrasa can build a digitization strategy by having a clear vision and mission, forming a skilled digitalization team, improving information technology infrastructure, and developing a curriculum that is integrated with information technology. With a strong digitization strategy, madrasa can improve the quality of learning, increase the efficiency and effectiveness of the educational process, and prepare students to face challenges in the digital era.

Making Islamic Education Innovations

Making innovations in Islamic education is an important requirement in this modern era. These innovations can help madrasa improve the quality of learning and prepare students to face challenges in the digital era. Here are five paragraphs on creating Islamic education innovations:

First, learning innovation that integrates information technology. This innovation includes the use of software, online platforms, and other digital media to facilitate the learning process and increase the efficiency and effectiveness of learning.

This innovation can help madrasa face challenges in the digital era and prepare students to face a world that is increasingly dependent on information technology.²⁹

Second, project-based learning innovations. This innovation emphasizes experiential learning. Students will be given assignments that require them to apply the knowledge and skills they have learned in class to real-world situations. This innovation can help students develop practical skills needed in the world of work.³⁰

Third, learning innovations that involve the community. This innovation involves students in activities outside the classroom, such as visits to local communities, participation in volunteer programs, and other social activities. This innovation can help students develop social and leadership skills and broaden their perspectives about the world.³¹

Fourth, learning innovations based on Islamic values. This innovation emphasizes learning that strengthens Islamic values in students' lives. This includes programs that help students understand and apply values such as moderation, hard work, gratitude, and cooperation. This innovation can help students build strong characters and face an increasingly complex world.³²

Finally, learning innovation based on an integrated curriculum. This innovation integrates the Islamic education curriculum with the general curriculum, so students can understand how Islamic values can be applied in fields such as science, technology, arts and culture. This innovation can help students broaden their insights about the world and prepare them to face challenges in the global era.³³

From there it can be understood that making innovations in Islamic education is an important requirement in this modern era. These innovations include the integration of information technology, experiential learning, involving the community, based on Islamic values, and an integrated curriculum. With these innovations, madrasa can improve the quality of learning.

Strengthening Islamic Values

Safeguarding Islamic values in the development of technology and information is a very important thing to do. Today, technology and information have become part of our daily lives. However, technology and information that are not maintained properly can have a negative impact on Islamic values. Therefore, the maintenance of Islamic values in the development of technology and information must be taken

seriously by the community, especially by educational actors such as madrasa.³⁴

Developments in technology and information can have both positive and negative impacts on Islamic values. On the one hand, technology and information can facilitate the spread of Islamic values through social media or the internet. However, on the other hand, technology and information can also have negative impacts such as pornography, violence, and things that are contrary to Islamic teachings. Therefore, safeguarding Islamic values must be taken seriously.³⁵

Madrasa as Islamic educational institutions must play an active role in maintaining Islamic values in the development of technology and information. Madrasa must provide strong teaching about Islamic values, especially values related to the use of technology and information. In addition, madrasa must also teach students about the ethics of using technology and information in accordance with Islamic teachings.

Supervision is also very important in maintaining Islamic values in the development of technology and information. Madrasa must strengthen supervision of activities that are inconsistent with Islamic teachings, such as bullying, fighting, or other negative behavior in the

use of technology and information. Madrasa must also ensure that students follow the rules set by the madrasa and maintain a safe and comfortable environment for students.³⁶

Parental involvement must also be strengthened in maintaining Islamic values in the development of technology and information. Parents must be invited to participate in teaching Islamic values, especially in the use of technology and information in accordance with Islamic teachings. In addition, parents must also be invited to participate in madrasa activities that aim to strengthen Islamic values in students.³⁷

The importance of maintaining Islamic values in the development of technology and information must also be understood by the whole society. The whole community, especially Muslims, must have a strong commitment to maintaining Islamic values in the use of technology and information. In this case, the role of the mass media is also very important to help spread positive messages about the use of technology and information in accordance with Islamic teachings.

Conclusion

From some of the explanations above, it can be concluded that the existence of the development of the digital world in the education system, including in the

context of madrasa, is a necessity. Therefore, there is a development of digitalization in the form of artificial intelligence(AI) in the learning system as well as from all aspects of the madrasa system need to be addressed wisely. In another sense, resistance to the development of AI immediately without any in-depth consideration is an attitude that cannot be justified in its totality. On the other hand, madrasa also need to instill caution in responding to the development of the digitalized world which continues to grow in flexibility. The purpose of this attitude is to protect Islamic and humanist values in madrasa so that they remain sustainable and not eroded by the currents of digitalization and AI which are so heavy hitting subjective values in madrasa.

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