



Building Digital Skills and Introducing AI for Santri Through a Training Program at the As-Sunniah Islamic Boarding school in Kencong Jember

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ABSTRAK

Minimnya orang yang mengetahui pemanfaatan AI di lingkup Pondok Pesantren membuat para santri tidak memiliki naluri untuk menjelajahi dunia digital yang luas yang sangat bermanfaat bagi kehidupan. Tujuan penelitian ini yaitu untuk menganalisis peran program pelatihan dan pembimbingan terhadap keterampilan digital dan pengenalan AI bagi santri pada pondok pesantren. Penelitian ini merupakan penelitian dengan metode PAR (Participatory Action Research), melalui langkah-langkah kolaboratif yang melibatkan diskusi, dialog, dan partisipasi aktif dari semua pihak terkait. Subjek yang terlibat dalam penelitian yaitu santri pondok pesantren. Metode pengumpulan data dilakukan dengan observasi dan wawancara. Analisis data dilakukan secara deskriptif. Hasil dari penelitian ini yaitu program pemberdayaan melalui pelatihan ini efektif meningkatkan keterampilan digital dan pengenalan AI bagi santri pondok pesantren. Melalui program pemberdayaan dan pembinaan keterampilan digital ini memberikan pengetahuan dan keterampilan bagi mereka untuk dapat melihat berbagai peluang pembelajaran di sekitarnya, serta kreatif dalam memanfaatkan segala sesuatu yang ada di dunia digital untuk mempermudah segala urusan.

ABSTRACT

The lack of people who know about the use of AI in Islamic boarding schools means that students do not have the instinct to explore the vast digital world, which is very beneficial for life. This research aims to analyze the role of training and mentoring programs on digital skills and the introduction of AI for students at Islamic boarding schools. This research uses the PAR (Participatory Action Research) method through collaborative steps involving discussion, dialogue, and active participation from all related parties. The subjects involved in the research were Islamic boarding school students. Data collection methods were carried out by observation and interviews. Data analysis was carried out descriptively. This research shows that the empowerment program through training effectively improves digital skills and introduces AI to Islamic boarding school students. Through this digital skills empowerment and development program, they provide knowledge and skills to see various learning opportunities around them and be creative in utilizing everything in the digital world to make everything easier.

1. INTRODUCTION

Education must be coordinated and interconnected with the current system to achieve the stated goals. Education aims to improve the quality of human life in all aspects. Learning is the most fundamental aspect of human life (Hazin & Rahmawati, 2021; Mulianingsih et al., 2019). Education is a tool to cultivate children's natural strengths, helping them as individuals and members of society. So that in the future, they can achieve the highest safety and happiness as individuals and as part of society (Hazin & Rahmawati, 2021; Lase, 2019). In Indonesia, the first Islamic educational institutions were Islamic boarding schools. Gain knowledge and participate in their religious beliefs under the guidance of kiyai or ustadz as their role models (Erwin Rifal Fauzi, 2018; Rahayu, 2021). Islamic boarding schools are a "social laboratory" for organizing Islamic education. Islamic boarding schools or Islamic schools have an important role in shaping the character and education of students (Saputri et al., 2023; Wahyudi, 2022). One of the things that needs to be developed in the world of Islamic boarding school education is technology skills. The development of

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the times requires students to keep up with all changes and prepare the abilities and skills needed to obtain a good standard of living (Khaerul umam, 2022; Yani et al., 2023).

In today's digital era, digital skills and understanding artificial intelligence (AI) have become increasingly relevant and necessary aspects of everyday life. Digital skills are important because they can open access to various learning sources and information supporting academic development, creativity, and innovation (N. Amelia & Dafit, 2023; Parwati & Pramatha, 2021). In addition, an understanding of AI provides a strong foundation for understanding future technology, helping students understand the role of technology in transforming society and the economy. By integrating digital skills and understanding AI in the curriculum, students can be ready to face the challenges and opportunities in the digital era, preparing them to become competitive leaders in the future (Subowo et al., 2022; Widiyanto et al., 2023).

Unfortunately, based on observations, information was obtained that there are still obstacles to integrating technology and AI into the curriculum and learning in Islamic boarding schools. Through the mentoring process and previous research with Islamic boarding school partner communities, the main focus problems that need to be addressed have been identified. Students in Islamic boarding schools still need adequate access and understanding regarding digital skills and AI (Nastiti & Abdu, 2020; Samsudin, 2020). Limited infrastructure, lack of adequate training, and limited knowledge about the potential of AI are obstacles in preparing students to face rapid technological developments. As-sunniyyah Islamic boarding school is one of the Islamic boarding schools in East Java, with several students. This Islamic boarding school is synonymous with religious knowledge because it only provides religious education, such as Madrasah Diniyah and the study of the Yellow Book. However, as time progresses and circumstances demand modern moderation of lessons. These changes must be in line with the demands of the times. The response from Islamic boarding schools was that initially, they felt stiff or even closed themselves off to advances in science and technology.

Data collected from previous research and mentoring also reveals an urgent need to expand digital access and knowledge for students (Munawar et al., 2021; Mutaqin et al., 2022). There is a huge opportunity to increase students' empowerment by introducing AI and digital skills to help them face future challenges. Based on this problem, a solution is needed, including training and guidance regarding digital skills and the introduction of AI for students in Islamic boarding schools (Makridakis, 2018; Subowo et al., 2022). This training and guidance will likely provide provisions for students to improve their digital abilities or skills to be utilized in facing the realities of the field (Farisi, 2018; Hidayatulloh et al., 2023).

This is supported by previous research stating that there was an increase in students' digital skills through training in Islamic boarding schools. This research conveys the success of Islamic boarding schools in managing their assets and potential as an important basis for developing training and mentoring programs (Paramita et al., 2023; Prasetya et al., 2023). Islamic boarding school partner communities have demonstrated success in managing their assets as a means of livelihood, and this can be used as a basis for building digital skills and understanding of AI for Islamic boarding school students (Nastiti & Abdu, 2020; Rahayu, 2021). This research also aligns with previous research regarding digital training programs in Islamic boarding schools. Training and mentoring that integrates digital skills and contextual understanding of AI in Islamic boarding schools can effectively expand access and build students' skills in facing future technological challenges (Hakeu et al., 2023; Hidayatulloh et al., 2023). Thus, this research aims to analyze the role of training and mentoring programs on digital skills and the introduction of AI for students at Islamic boarding schools. This research is hoped to significantly contribute to increasing digital empowerment and preparing students in Islamic boarding schools to face the digital era and the increasingly rapid development of AI.

2. METHOD

The research method used to implement this service program is Participatory Action Research (PAR). The PAR method prioritizes active collaboration between researchers and community service partners, namely Islamic boarding schools and Santri. This method ensures strong participation and community empowerment in the research and solution development (Khaerul umam, 2022; Purnomo & Nastiti, 2023). In the context of service in Islamic boarding schools, the PAR method is the right choice because it allows direct and participatory involvement of all parties involved. In this method, researchers not only act as external observers or researchers but also as facilitators who work with the community to identify problems, plan actions, and implement desired changes. The subjects involved in this research included Islamic boarding school students. The data collection methods used were observation and interviews. The PAR method involves collaborative steps involving discussion, dialogue, and active participation from all relevant parties. Researchers will work closely with Islamic boarding schools and Islamic boarding schools to understand the challenges faced in terms of digital skills and understanding AI.

Together, they will formulate concrete actions relevant to the community's needs and aspirations. The findings were then analyzed descriptively.

3. RESULT AND DISCUSSION

Result

The PRA Technical Study includes several stages, with the findings presented sequentially. First, a facilitation process was carried out, which was obtained from the results of deliberations, which involved the Islamic Boarding School and carried out observations and interviews with all parties involved in the service. So that there is input from the Islamic Boarding School. We reduce existing problems to make improvements and raise basic and important problems in this case because of the students' lack of knowledge about AI-based platforms, which can make it easier to carry out tasks so that the students are more concerned with other activities than doing the task. Therefore, observations are carried out. The second stage determines the problem tree. Based on the problem tree found by the students at the As-Sunniah Kencong Islamic Boarding School, Jember Regency, it can be concluded that the problem for the majority of the students is the lack of facilities at the Islamic boarding school that support the student's curiosity about the digital world, such as the use of AI which can make everything easier, including carrying out assignments. , there is no prior knowledge regarding anything in the digital world that can be used to complete their tasks, like AI.

Regarding existing potential, it was discovered that the As-Sunniah Kencong Jember Islamic Boarding School is located close to the Al-Fallah As-Sunniah Kencong University Campus so that it is close to international students who understand the use of AI. So it cannot be denied that apart from students receiving training related to digital skills and an introduction to AI from inside Islamic boarding schools, students can also make study visits to the main campus of Al-Fallah As-Sunniah University Kencong to get various kinds of information and AI digital skills. Apart from that, in the Islamic boarding school, there are also external students (not boarding) from Al-Fallah As-Sunniah Kencong University who conduct lectures in the Islamic boarding school for certain study programs which are certainly familiar with AI which can be used to work together to introduce AI to improve digital skills of students at the As-Sunniah Kencong Islamic Boarding School.

The As-sunniah Islamic Boarding School is one of the stakeholders involved in the digital skills training and mentoring program and the introduction of artificial intelligence (AI) for students. This Islamic boarding school has the characteristics of an Islamic religious education institution based on Islam. Located in a specific area, this Islamic boarding school has a long history of religious education and is home to many Islamic boarding school students. As a stakeholder, the As-sunniah Islamic Boarding School has valuable expertise and resources. This institution has qualified religious teachers, and teachers experienced in the Islamic field. Apart from that, the facilities available also support students' educational activities.

To obtain cooperation with the As-sunniah Islamic Boarding School, the service team will explain in detail the objectives of the service program to the boarding school administrators. Discussions will also be held to discuss the benefits Islamic boarding schools will gain from implementing this program. Apart from that, cooperation mechanisms involving the resources and infrastructure owned by Islamic boarding schools will also be discussed to create good synergy between the two parties.

Al Falah As Sunniyyah University is another stakeholder who has the potential to become a partner in implementing this program. This university focuses on Islamic religious education and is in a certain area. The expertise possessed by this university is related to the development of artificial intelligence (AI) and information technology. University lecturers have knowledge and expertise in AI, computational intelligence, and information technology. Al Falah, Sunniyyah University needs to gain access and collaborate with Islamic boarding schools to implement and test AI applications in religious education. To obtain cooperation with the university, the service team will contact and discuss with the university. On this occasion, the service team will explain the objectives of the service program and the benefits for the university in supporting the development of AI technology in religious education. Collaboration between Islamic boarding schools and universities can include joint research, training, and knowledge exchange to support the development of AI technology and the application of artificial intelligence concepts in religious education. This collaboration will enable both parties to strengthen each other and utilize their expertise and resources.

With the collaboration between the As-Sunniah Islamic Boarding School and Al Falah As Sunniyyah University as two partner stakeholders, it is hoped that digital skills training and mentoring programs, as well as the introduction of AI for students, can be financed and implemented with the support of wider resources, expertise, and infrastructure. This collaboration will bring significant benefits to both parties. Islamic boarding schools will gain access to knowledge and expertise in developing information

technology and artificial intelligence from universities. They can improve the quality of learning and innovation in the Islamic boarding school environment. On the other hand, Al Falah As Sunniyyah University will have the opportunity to apply knowledge and expertise in the field of AI and information technology in religious education. Collaboration with Islamic boarding schools will also provide universities with access to the field as a place to implement and test AI applications relevant to religious education. In addition, this collaboration will help the university develop networks and relationships with religious and educational institutions with a wide influence and reach.

The steps to obtain cooperation with these two stakeholders involve in-depth discussions and explanations about the objectives of the service program, the benefits that can be obtained, and the potential for synergy and collaboration that can be realized. The service team will take an approach that focuses on mutual interests and mutual benefits between Islamic boarding schools, universities, and the students who will be program participants. By building a solid understanding of the values and interests held by both stakeholders, this collaboration can be realized and positively impact the development of digital skills, understanding of AI, and learning innovation in Islamic boarding schools.

In the stakeholder analysis matrix (MAS), the As-Sunniyyah Islamic Boarding School and Al Falah As Sunniyyah University are the two main stakeholders with complementary characteristics and needs. Through this collaboration, the hope is to optimize the potential for developing digital skills, understanding AI, and learning innovation in Islamic boarding schools and contribute to developing information technology and artificial intelligence in religious education.

The activities and impacts carried out in Community Service are known through several stages. Data mapping is an activity carried out to obtain valid data to be used as a reference for service activities, namely for students to build digital skills by introducing AI through a training program at the As-sunniyah Kencong Jember Islamic Boarding School. Conducting a Focus Group Discussion (FGD) with the students at the As-sunniyah Kencong Jember Islamic Boarding School, which aims to find out in-depth about the obstacles faced during the learning carried out by the students towards submitting final assignments to make it easier for the students who have minimal use of technology to complete their tasks effectively and efficiently by utilizing AI.

Problem analysis, namely analyzing as detailed as possible to solve the problems that exist within the scope of students in Islamic boarding schools regarding the problems they face, especially regarding the facilities used by students to complete their final assignments, which so far have only relied on studies through books from conventional libraries.

Mentoring and mapping are about empowering the potential of students with digital skills to make it easier for students to complete their final assignments effectively and efficiently, namely by presenting a team of UAS Kencong Jember Regency lecturers who are qualified in the field of Digitalization. Assistance carried out continuously is needed in every empowerment program. Regular and planned mentoring is provided to students at the As-Sunniyyah Kencong Islamic Boarding School to build digital skills in the students' environment by placing the right mentors who are experts in the field of Digitalization. Assistance for students at the As-Sunniyyah Kencong Islamic Boarding School, especially for students who are working on their final assignments but need more digital skills and are less able to utilize existing and currently developing AI technology to make completing their final assignments easier.

As discussed in this service, the process uses participatory action research with several activity stages: planning, implementation, observation, and reflection. The planning stage in the PAR program was prepared in a participatory manner involving the students of the As-Sunniyyah Kencong Islamic Boarding School after first observing and analyzing needs so that this activity was expected to be by the things required by the students in working on their final assignment. Observations were carried out with one of the students. He explained that he became a student because he wanted to be someone religious and felt good for many people. Many students need more skills and knowledge regarding Digitalization.

Furthermore, the second observation found several findings: 1. Students generally want to improve their knowledge; 2. There needs to be more creativity and knowledge of digital skills, especially AI, which can make everything easier; 3. Some students must be on time to complete their final assignments due to limited skills in utilizing digital platforms and AI development.

The implementation stage of this activity uses the PAR method, which is characterized as participatory and uses a mentoring cycle. The researcher provides sufficient opportunities for the As-Sunniyyah Kencong Islamic Boarding School students to carry out the activities specified in the activity schedule. Through activities in several cycles, it is hoped that students can improvise and become more creative and innovative to be more productive in carrying out the tasks given to them. Based on the priority of choosing the types of activities above, implementing these activities is carried out periodically. First student mentoring: Discussion to increase students' insight into problems in carrying out various tasks by

carrying out and planning activities. It is hoped that discussions on increasing insight into digital skills and the use of AI will build understanding among students.

Based on observations made during this community service, the students participated enthusiastically. In observations regarding digital skills material and the use of AI, the students are confident that they will be able to independently utilize AI in carrying out their assignments, as explained by one of the students who revealed that so far, the students have been a little indifferent (less social) regarding the use of technology because few people in Islamic boarding schools understand this field and can share it with other students, so many still need to learn about the renewable platforms that are currently developing. During the observation of this service activity, this activity received good attention from the students, as evidenced by the students actively asking questions and looking very interested in this activity. After that, reflection and evaluation were carried out regarding any obstacles found due to the observations carried out.

Lastly, the reflection on this empowerment activity received a good response from the As-Sunniah Islamic Boarding School students. During the activity, there were small obstacles. However, these obstacles can be overcome well. Research shows that this training positively impacts students' digital skills at Islamic boarding schools.

Discussion

This research was carried out at the As-Sunniah Islamic Boarding School and focused on students needing digital skills and knowledge. The various potentials can be directed by carrying out empowerment and activities so that they have the skills needed in the student (Lase, 2019; Nucifera et al., 2022). Building digital skills and introducing artificial intelligence (AI) for students through training programs at Islamic boarding schools is important because it is an investment in preparing the younger generation to face the challenges of an ever-growing digital world. By understanding technology and AI, students can develop skills relevant to the needs of the future job market, broaden their horizons regarding innovation, and help improve their ability to solve complex problems (Kuntari, 2023; Mulianingsih et al., 2019). Apart from that, this training can also strengthen the religious and ethical values taught in Islamic boarding schools by promoting the use of technology that is responsible and beneficial to society. Thus, the training program prepares students for a future full of technology and ensures they remain rooted in religious and moral values (D. Amelia et al., 2021; Pratama & Yani, 2018).

From empowering students at the As-Sunniah Kencong Islamic Boarding School to improve digital skills and introduce AI, assistance was provided until the students could independently utilize AI. The lack of people who know about the use of AI in Islamic boarding schools means that students need the instinct to explore the vast digital world, which is very beneficial for life (Paramita et al., 2023; Rahayu, 2021). On the other hand, students are the same as international students who have the potential and opportunity to know and utilize AI independently. Through the digital skills empowerment and development program, students are given the knowledge and skills to see various learning opportunities around them and be creative in utilizing everything in the digital world to make everything easier (Prasetya et al., 2023; Purnomo & Nastiti, 2023).

In this case, community empowerment is seen as a step where each student in an Islamic boarding school is aware of their needs. So, based on their needs, they are encouraged to learn to improvise their abilities in all aspects and areas of need, especially in digital skills and the introduction of AI. Through this training, students can improve their digital skills and expand their understanding of the concepts and applications of artificial intelligence (Erwin Rifal Fauzi, 2018; Parwati & Pramatha, 2021). Apart from that, this program can also encourage learning innovation in Islamic boarding schools by utilizing information technology. The results of this research are supported by previous relevant research related to digital world training for students at Islamic boarding schools. This research found that the students had great enthusiasm and interest in utilizing technology to acquire future skills, and this training could help them improve their skills (Hidayatulloh et al., 2023; Paramita et al., 2023). This research also aligns with research on training using artificial intelligence (AI) in Islamic boarding schools. This research shows that the training provided positively impacts the students' digital skills development (Mutaqin et al., 2022; Rahayu, 2021).

This research has the advantage of improving students' technological skills and knowledge, preparing them to face the demands of an increasingly digital world of work, and opening up opportunities for students to be involved in technological innovation that can support wider community development (Hazin et al., 2022; Indarta et al., 2022). This research has implications for increasing the adaptation of Islamic boarding schools to technological developments, which can expand the reach of Islamic boarding school education and increase its relevance in a modern society increasingly connected digitally. Thus, this research directly benefits students and positively impacts the transformation of Islamic education in the

digital era. However, this research still has several areas for improvement due to the limited scope of the research, so it should be used as a reference or consideration for future similar research. These suggestions for improvement can help optimize the benefits of research on building digital skills and introducing AI for students in Islamic boarding schools.

4. CONCLUSION

This empowerment program, through digital skills training and the introduction of AI, is effective in improving the digital skills of Islamic boarding school students. The training program has been running and obtained results by the aim of this program, which is oriented towards the potential digital skills of the students; they have become more technologically literate and dare to try all AI platforms that can make life easier.

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