
Enhance Artificial Intelligence Literacy for Islamic Boarding School Students Using the Asset Based Community Development Method

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ABSTRACT

Use of artificial intelligence (AI) in teaching and learning has become an increasingly important topic in modern education context. AI offers a wide range of potential to enhance students' learning experiences through better personalization and adaptation to individual needs. From initial observations in several Islamic boarding schools in Banjarsari Surakarta, it was found that understanding of students and teachers about AI and AI supporting applications was still lacking. As part of efforts to improve education quality and community readiness to face a digital era, Bina Sarana Informatika University, Surakarta City Campus, took an initiative to implement a community service program in form of training on using AI in education for students. Community service method used in this activity is the Asset Based Community Development (ABCD) approach which aims to empower communities by utilizing existing potential and resources. Implementation stages include needs analysis (Discovery), expectations formulation (Dream), design of training modules (Design), finalization of plans with FGD (Define), and training implementation (Destiny). AI workshop for Islamic boarding schools has been successfully implemented with good results. From questionnaires that have been filled out by all participants, it shows that workshop materials presented are very useful, materials and tutors delivery method are satisfactory. Workshop participants who are satisfied or rate it good are 63% and those who rate it as very satisfied or very good are 32%.

1. INTRODUCTION

Intelligence is ability to acquire and implement specific skills and knowledge in solving existing problems. Along development and increase in human intelligence, this has led to the latest technology emergence to solve problems (Dwi Ardita et al., 2024). As information technology develops, an innovations produced are becoming more diverse, one of which is AI (artificial intelligence) (Sanhaji & Hizbullah, 2023). AI is a computer program that is designed and built to be able to imitate human intelligence, including decision-making abilities, logic, and other intelligence characteristics. (Alief & Nurmiati, 2022). AI is also a branch of computer science that focuses on developing computer systems that are capable of performing tasks like humans. Main goal of AI is to create machines that can learn, understand, plan and adapt so that they have an ability to complete tasks independently (Karyadi, 2023). AI is a technology that uses a data system in its working process, system will test and measure its own performance. From these measurements results, then system produces a new ability. AI is not like humans who need time to rest, AI can do or produce a lot of work in a short time (Fadilla

et al., 2023). AI is expected to be able to handle tasks and problems that involve greater levels of uncertainty with deeper learning processes (Wahyudi, 2023).

Utilization of AI for learning is increasingly being used in all practical. Some the focuses in using AI for learning include problems related to lack of critical thinking, plagiarism, and lack of skills development (Lukman et al., 2024). AI has shown great potential in revolutionizing how to understand, design, and run education systems. One aspect that is the main focus in modern education is the personalization of learning, namely an approach that adapts learning process to the needs, abilities, and preferences of each individual (Widodo et al., 2024). AI-based tools and platforms facilitate immersive and interactive learning experiences. AI-powered virtual reality and augmented reality applications can simulate real world scenarios, allowing students to practice and perfect skills (Yahya et al., 2023). However, on the other hand, use of AI can also have a negative impact, namely making students less critical and creative thinkers and dependent (Arly et al., 2023).

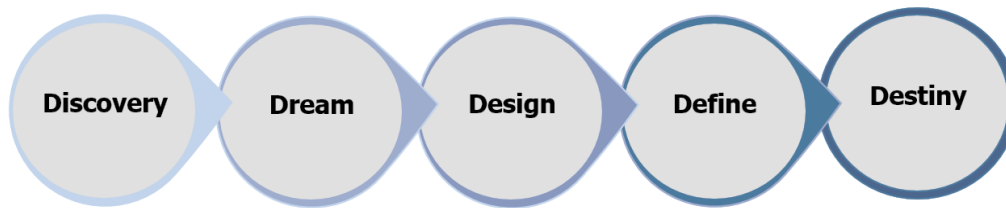
Using AI in teaching and learning has become an increasingly important topic in modern education context. AI offers a variety of potentials to improve students' learning experiences through better personalization and adaptation to individual needs (Andri et al., 2023). There are several community service activities that have been carried out also for training using AI for students. AI introduction training for the RW04 youth organization, Tegal Parang Village, aims to introduce AI to youth organization. An introduction accompanied by demonstrations and practices is carried out in order to be able to use AI for business purposes (Harafani, 2024). Other community service activities, namely using AI in teaching and learning, aim to improve teacher competence in utilizing artificial intelligence (AI) as an assistant in teaching and learning. AI allows materials to be customized to student needs, increases engagement, and creates more personalized adaptive learning (Sabariah et al., 2024).

Santri is a term for students at Islamic boarding schools who study Islamic religious knowledge. They spend a long time at Islamic boarding schools to deepen their religious knowledge, study the Koran, and obey daily life rules (Anam et al., 2024). There are various types of Islamic boarding schools, including modern Islamic boarding schools which are quite well known to public. Modern Islamic boarding schools generally have several advantages, such as integrating religious education with general knowledge, placing emphasis on developing practical skills, formal education, and providing students with relevant knowledge to take on modern era challenges (Isnaeni et al., 2023). Banjarsari District has residents with diverse educational backgrounds, professions, and digital literacy levels. The existing youth organization members also have diverse educational and economic backgrounds. From initial observations in several Islamic boarding schools in Banjarsari Surakarta, it was found that the understanding of students and teachers about AI and AI supporting applications was still lacking. As part of efforts to improve the quality of education and community readiness to face the digital era, Bina Sarana Informatika University, Surakarta City Campus, took the initiative to implement a community service program in the form of training on the use of AI in education and daily life.

2. METHOD

The community service method used in this activity is Asset Based Community Development (ABCD) approach which aims to empower communities by utilizing existing potential and resources (Yuriananta & Asteria, 2024). Stages in finding assets or potential owned by community that must be carried out by facilitator are by means of discovery (study) to understand hidden potential owned by community. Dream stage is stage in sharing hopes and dreams that you want to make come true. Design stage is a stage where community designs

ways or strategies to realize dreams. Define stage is stage in applying strategies to mobilize assets such as socialization, collective collaboration. Destiny (Evaluation) is an evaluation process as a learning process (Rahmawati et al., 2024). Figure 1 is stages in ABCD method.



(Bela et al., 2025)

Figure. 1 The ABCD Method Stages

The ABCD approach has four main things that must be fulfilled, namely discovery, design, mobilize, and evaluate.

1. **Discovery: Identifying Community Assets and Potential**

The first stage is identifying assets process owned by teacher community. An assets identified include knowledge and experience assets and infrastructure.

- a. **Knowledge and Experience Assets:** Mapping the experience and knowledge that students already have in using information and communication technology (ICT) in learning.
- b. **Infrastructure Assets:** Reviewing technological facilities available in Islamic boarding schools, such as computers, projectors, internet access, and other devices that can support using AI.

2. **Design: Designing a Program Based on Found Assets**

Based on identification results, next step is to design a training program that is tailored to potential and teacher community needs. In this stage, community service program will focus on two main things. The two main things can be seen as follows:

- a. **Increased insight into AI:** Training sessions designed to provide a basic understanding of AI, how technology can be applied in education, and trends in AI-based learning media.
- b. **Developing practical skills:** Training that focuses on technical skills in using AI-based software, such as creating interactive learning materials, creating AI-assisted presentation slides, and creating AI-assisted learning videos to improve the learning experience of students.

3. **Mobilize: Mobilizing Assets for Program Implementation**

After the program plan is prepared, next stage is mobilizing the identified assets. This mobilization includes two things as follows:

- a. **Collaboration with AI experts:** Inviting experienced practitioners and academics in AI scope to provide training and technical guidance to teachers and students.
- b. **Strengthening social networks:** Encouraging teachers and students to form learning communities that actively share best practices and challenges in developing AI based learning media.

4. **Evaluate: Continuous Evaluation and Reinforcement**

After training is completed, an evaluation stage is carried out to assess impact and success of program. This evaluation is carried out through several things as follows.

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- a. Teacher and students skills reflection: Measuring the extent to which teacher and student skills have improved in using AI to develop learning media, through real projects produced.
 - b. Participant Feedback: Collecting feedback from teachers and students regarding benefits and obstacles during the training
 - c. Follow-up and mentoring: Providing further assistance to teachers and students who need additional guidance in implementing AI-based learning media in Islamic boarding schools. This program is also expected to become a sustainable program, where successful teachers and students can become mentors for their colleagues.

3. RESULTS AND DISCUSSION

a. Discovery: Identification of Training Needs

Based on survey results distributed to teachers and students in Banjarsari Surakarta, it was found that most students already have basic skills in using information and communication technology (ICT) devices, especially in utilizing computers or laptops to develop various learning media. Mastery of software such as Microsoft Office and simple design applications is also quite adequate among students.

Survey also revealed that although the use of ICT is quite common, using AI in learning has not become a widespread practice. Students generally do not know how to use AI in an educational context, and are not familiar with AI applications or devices that are relevant to learning. This lack of knowledge about AI causes students to miss opportunities to utilize the technology in more interactive and adaptive learning.

In terms of facilities provided by Islamic boarding schools, it is known that most Islamic boarding schools in Banjarsari Surakarta have adequate technological facilities to support the learning process. Almost all Islamic boarding schools surveyed are equipped with projectors in the classroom, which makes it easier for teachers to deliver materials visually and interactively. In addition, the availability of computers and laptops is also quite good, making it possible to develop and access various digital learning media.

Furthermore, internet access in Islamic boarding school is also available, both through wired and wireless (Wi-Fi) networks, which allows teachers and students to access information online, use online learning applications, and communicate more efficiently. Several Islamic boarding schools also have other electronic devices such as tablets and speakers, which further complement the technological infrastructure in the educational environment. Availability of these technological facilities shows that Islamic boarding schools in Banjarsari Surakarta are infrastructurally ready to utilize artificial intelligence (AI) in learning. However, even though technological facilities are available, use of AI is not optimal due to the lack of knowledge and skills of teachers and students in using AI for learning media.

b. Design and Mobilize: Implementation of Training and Mentoring with Experts

Introduction and training use of AI-based applications was held on April 9, 2025 at Bina Sarana Informatika University, Surakarta City Campus, with the aim of improving teachers skills and students in utilizing AI technology to develop more creative and effective learning media. This training was attended by teachers and students from various Islamic boarding schools in Banjarsari Surakarta, as well as lecturers who are interested in the application of AI in education. This program is designed to provide theoretical understanding as well as practical skills in integrating AI into learning process.

In the first session, introduction AI was delivered by Dr. Candra Agustina, M.Kom in

order to open participants' insights into AI and its use. It also explains how certain AI applications can help create more engaging and adaptive learning experiences. Participants listened carefully to material presented by speaker. After the first material was delivered, a discussion session was continued with workshop participants.



Figure. 2 AI Introduction By Dr. Candra Agustina, M.Kom



Figure. 3 Practical Demonstrations Session By Experts

This workshop session is not only theoretical, but also equipped with practical demonstrations. Practical session was delivered by Heribertus Ary Setyadi, S.T., M.Kom who was assisted by Rousyati, M.Kom and Wawan Haryanto, S.E., M.Akt assisted by three students to guide participants through concrete steps in creating AI-based learning media. From creating visual materials, creating AI-powered adaptive quizzes, to automatically analyzing student learning outcome data, participants receive training that can be directly applied in their teaching activities. In this session, participants are expected to be able to design AI-based learning media that are in accordance with the needs and characteristics of students, so that the learning process becomes more dynamic and relevant to the times.

c. Evaluate: Continuous Evaluation and Reinforcement

After the training is completed, an evaluation stage is carried out to assess the impact and success of the program. This evaluation is carried out through several things as follows.

- a. Reflection of training participants' skills: measuring the extent to which participants' skills have improved in using AI to develop learning media, through real projects produced.
- b. Feedback from Participants: Collecting feedback from teachers and students regarding the benefits and obstacles during the training
- c. Follow-up and Mentoring: Providing further assistance to teachers who need additional guidance in implementing AI-based learning media in Islamic boarding schools. This program is also expected to become a sustainable program, where successful teachers and students can become mentors for their colleagues.

From the recapitulation results of the questionnaires filled out by the participants, it is known that the participants assessed that the workshop went well and as expected. Here are some graphs of the processed questionnaire recapitulation results.



Figure. 4 Questionnaire Recapitulation Results Graph

d. CONCLUSION

Workshop on using AI to improve learning in Islamic boarding schools is an urgent strategic step to answer the challenges of the digital era. Using the ABCD method, this training is designed based on the needs and potential of students and teachers, ensuring relevant and sustainable solutions. The implementation stages include needs analysis (Discovery),

formulation of expectations (Dream), design of training modules (Design), finalization of plans through FGD (Define), and implementation of training (Destiny).

The AI workshop for Islamic boarding schools has been successfully implemented with good results. From the questionnaires that have been filled out by all participants, it shows that the workshop materials presented are very useful, the materials and the way the tutors deliver them are satisfactory. Workshop participants who are satisfied or rate it good are 63% and those who rate it as very satisfied or very good are 32%.

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