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Artificial Intelligence Introduction Training for Teachers to Improve Learning Effectiveness at SMPN 2 Buay Pemuka Peliung

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Article Info	ABSTRAK
Keywords : Artificial Intelligence Teacher training Learning effectiveness Digital technology Educational transformation	The rapid advancement of digital technology demands that educators develop competencies in utilizing artificial intelligence (AI) to enhance learning effectiveness. However, many teachers still lack adequate training in integrating AI into pedagogical practices. This study evaluates a hands-on AI training program aimed at improving the professional skills of 20 teachers at SMPN 2 Buay Pemuka Peliung. The training consisted of three phases: preparation (needs assessment), implementation (workshops, Canva AI, and Quizizz), and evaluation (pre/post-tests and participant feedback). Results showed an 80% improvement in teachers' ability to apply AI tools in instructional design and a 90% increase in confidence toward digital instruction. These outcomes align with previous research emphasizing AI's potential in promoting innovation and efficiency in teaching. Despite infrastructural challenges, the program proved effective in fostering digital transformation at the junior high school level. This study recommends scaling similar training models and conducting longitudinal research on the impact of AI integration on student learning outcomes.

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1. INTRODUCTION

Technology education today is very important considering the rapid development of artificial intelligence (AI) technology, which has a significant impact on various areas of life, including education [1]. In the digital era, AI has become an important tool in improving the quality and efficiency of learning. Artificial Intelligence refers to the ability of a computer system to perform tasks that usually require human intelligence, such as natural language processing, decision-making, learning from experience, and other cognitive tasks [2]. At the junior high school level, the potential of AI is actually very large, from helping the learning process that is tailored to students' needs to simplifying the assessment system. Unfortunately, the use of this technology in schools is still very limited, one of the reasons being that not many teachers feel ready to use AI in teaching and learning activities [3].

The implementation of AI technology in education still faces various challenges, especially among educators such as teachers. The lack of knowledge and skills in utilizing AI is a major obstacle, which can widen the educational gap between students who are able to access technology and those who are not. Teachers often find it difficult to understand the basic concepts of AI, the types of algorithms used, and how to integrate them effectively into the teaching and learning process. In fact, adequate training is needed so that educators can use this technology well and create innovative, interactive, and efficient learning experiences.

Based on these problems, the community service team saw the urgency to introduce and train teachers at SMPN 2 Buay Pemuka Peliung regarding the use of Artificial Intelligence in learning. SMPN 2 Buay Pemuka Peliung, as an educational institution, is expected to optimize the use of advances in Artificial Intelligence technology in its learning process. This training aims to equip teachers with an understanding of the basic concepts of AI and practical skills in integrating it into the learning process, such as finding ideas for creating creative questions, materials, teaching materials, and learning videos. Thus, it is hoped that this training can increase the effectiveness of learning, prepare

students to face an increasingly automated world, and support the school's efforts to produce graduates with good quality and noble morals.

2. METHOD

The training method used in this training is a hands-on training method that includes various stages, namely the preparation, implementation, and evaluation stages, with an approach that emphasizes direct practice of using various AI platforms in developing media and teaching materials [4]. The subjects of this study were seven teachers from SMP Negeri 2 Buay Pemuka Peliung who taught different subjects, thus providing various perspectives on learning technology training. The object of the study included teacher knowledge and skills related to Artificial Intelligence (AI) and its impact on learning effectiveness, with a focus on increasing understanding through direct practice training and its application in the teaching and learning process. The training activity was carried out on Friday, May 16, 2025, at 09.00-11.00 WIB. The location of the activity was at SMPN 2 Buay Pemuka Peliung, Bantan Pelita Village, Buay Pemuka Peliung District, East Ogan Komering Ulu Regency, South Sumatra Province.

Figure 1. Stages in the Training Method

There are several stages used in this activity, namely:

1. Preparation Stage

In the initial stage, the implementation team conducted a survey and initial interviews to identify the level of understanding and needs of teachers regarding the use of AI tools. Low digital literacy among teachers and a lack of understanding of how to utilize information technology to prepare teaching materials and learning administration [5]. Teachers may also tend to use certain books as sources without innovation and adaptation to technological developments, making students less interested in learning [3].

Based on the problem analysis, the team designed a solution that focused on the use of AI technology to overcome the obstacles faced, by offering training in the use of AI to assist in the creation of digital teaching materials that can maximize the effectiveness of learning. The implementation team carried out initial coordination with the principal, determined the activity schedule, and coordinated the location of the training. Then ensure the availability of tools and materials needed for training, such as laptops with a stable internet connection, as well as software or applications related to AI that will be used (ChatGPT, Gamma AI, Invideo AI).

The team designed the training materials in a simple and easy-to-understand presentation that covers key topics, such as a basic introduction to Artificial Intelligence (AI), the use of AI in educational contexts, the application of AI in everyday life, and a guide to using certain AI tools to help teachers design questions, compile learning materials, and compile educational administration such as teaching materials. In addition, before the training began, the team prepared a pre-test or initial instrument in the form of statements to measure the extent of participants' understanding of basic AI concepts. The goal was to gain an overview of teachers' initial knowledge levels, so that the team could adjust the training approach more effectively.

2. Implementation Stage

The process of implementing the Artificial Intelligence (AI) introduction training in schools involves a series of activities designed to provide teachers with a practical understanding and skills. This stage is generally interactive and oriented towards direct practice [1]. The training was held on Friday, May 16, 2025, at 09.00-11.00 WIB. The activity was opened with an introduction to the basic concepts of Artificial Intelligence, examples of AI that exist around us, the use of relevant AI in the world of education, and its usefulness in everyday life, as well as a guide to using ChatGPT, Gamma AI, and Invideo AI. The team delivered the material through lectures to provide an overview

of AI and its potential in education, as well as showing examples of prompts that can be used to design questions in ChatGPT, create presentations in Gamma AI, and create interactive learning videos in Invideo AI. After that, teachers were guided to create accounts and register on the websites that would be used, namely ChatGPT, Gamma AI, and Invideo AI. The hands-on practice session is an important component of the training, as it allows participants to actually implement the concepts they have learned.

In this session, teachers are given the opportunity to create digital teaching materials, presentations, and find ideas for questions and lesson materials. They can also use AI to automate administrative tasks such as managing student data. During the practice, participants will be directly assisted by the implementation team to help overcome the challenges faced. In addition to practice, this training also provides an interactive discussion and collaboration space, where teachers can share experiences, challenges, and solutions in implementing AI technology in educational environments. The opportunity to ask questions and discuss actively is also facilitated to support deeper understanding and application. With this hands-on practice approach, participants can learn while experiencing in real terms how AI technology can be used to improve effectiveness and efficiency in the teaching and learning process. After that, the activity ended with an interview with one of the teachers participating in the training.

Figure 2. Documentation of Training Implementation

3. Evaluation Stage

The evaluation stage in Artificial Intelligence (AI) introduction training in schools is designed to assess the level of success and effectiveness of the implementation of activities, as well as identify aspects that need to be improved in the future. This evaluation is carried out after the entire series of training has been completed [6]. A pre-test is conducted before the training begins to measure teachers' initial knowledge of basic AI concepts. After the training, a post-test is prepared with the same or relevant material to measure the increase in teachers' knowledge and understanding after participating in the training. A comparison of scores between the pre-test and post-test is used to evaluate the effectiveness of the training and the extent to which teachers have mastered AI concepts and skills. An average increase in score of 0.80 indicates the success of the training in improving participants' understanding.

Participants are given the opportunity to fill out a questionnaire containing statements related to: the training as a whole, whether or not the material presented is relevant to the teacher's needs, the extent to which teachers understand the material presented, such as the use of ChatGPT to help understand the material, how capable students are in delivering the material, and whether the duration of the training is sufficient to understand the material. The results of this feedback are used as an evaluation for the implementation of further community service.
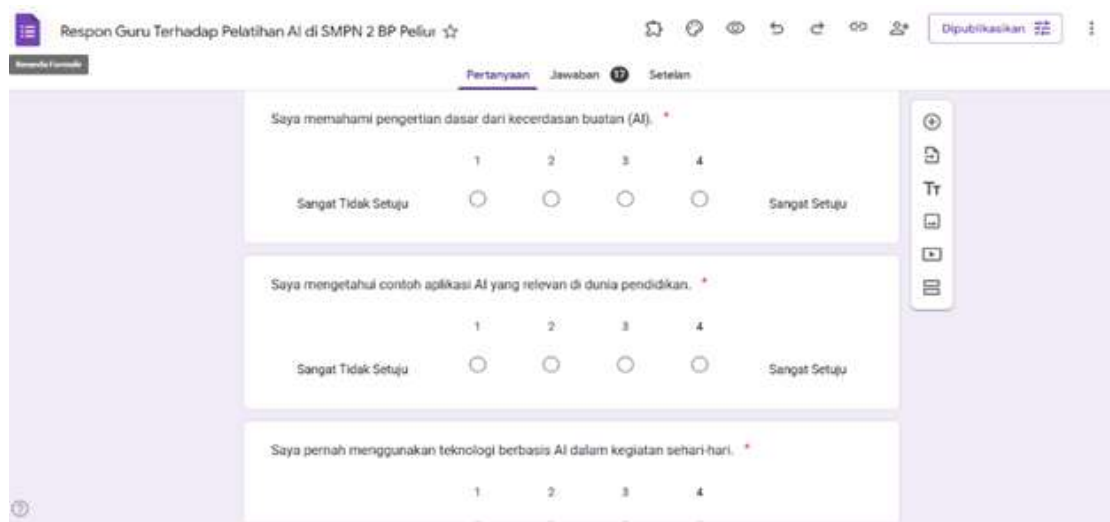
Figure 3. Teacher Response Questionnaire

3. RESULTS AND DISCUSSION

The implementation of the AI introduction training activity began with a systematic preparation stage to ensure the smooth running of the activity. At this stage, the student group acting as facilitator identified the needs of the participants through an initial survey, prepared relevant training materials, and asked for permission from the partner school regarding the time of the AI training. In addition, technical preparations such as the availability of training rooms, provision of supporting devices (laptops, internet connections, and LCD projectors), and providing an official permit letter from the head of the physics education study program to the partner school are required. The main objective of this stage is to create a strong foundation so that the training runs effectively and in accordance with the needs of the participants. The implementation stage was carried out according to the predetermined schedule by following the flow of activities prepared by the students.

The activity began with the opening and filling out of the questionnaire as a form of initial assessment of the participants, then continued with the presentation of the AI introduction material, which contained the definition of AI, simple examples of AI around us, how to create prompts for generative AI, and its application in the world of education. Students presented the material interactively, accompanied by examples of the use of AI-based tools such as ChatGPT, Gamma AI, and Invideo AI. Participants also attended a hands-on practice session with guidance from the facilitator, so that they could understand how to use AI technology in compiling questions, creating teaching media, and simplifying learning administration. The training was conducted actively and participatively, marked by the high enthusiasm of participants in discussing and exploring AI technology.

The evaluation stage was carried out after the entire series of training activities was completed to assess the effectiveness and impact of the activities. The evaluation carried out after the training was a summative evaluation by distributing questionnaires to obtain feedback from participants regarding the training as a whole, whether the material presented was relevant or not to the teacher's needs, the extent to which teachers understood the material presented, such as the use of ChatGPT to help understand the material, how well students were able to deliver the material, and whether the duration of the training was sufficient to understand the material. The evaluation results showed that most participants felt that this training was very useful in improving their understanding of AI and its potential in supporting learning innovation.

To determine the effectiveness of the training in improving teachers' understanding of artificial intelligence (AI) material, a pre-test and post-test were conducted. The pre-test was given before the training began to measure participants' initial knowledge, while the post-test was conducted after the training was completed to evaluate the increase in understanding. The pre-test results showed that the average score obtained by participants was 2.77 out of 4, with a score range between 1 and 4. This value reflects that most teachers still have limited knowledge about the basic concepts and applications of AI in learning. Meanwhile, the post-test results showed an increase in the average score to 3.57 out of 4, with a score range between 1 and 4. There was an increase in the average score of 0.80 points, indicating an increase in knowledge after participating in the training. This increase can also be seen from the calculation of the gain score, where the average normalized gain (N-gain) value reached 0.65, which is categorized as a moderate to high increase. Based on these data, the AI introduction training has been proven to have a positive impact on improving participants' understanding, especially in terms of using AI for learning personalization, teaching content creation, and administrative efficiency.
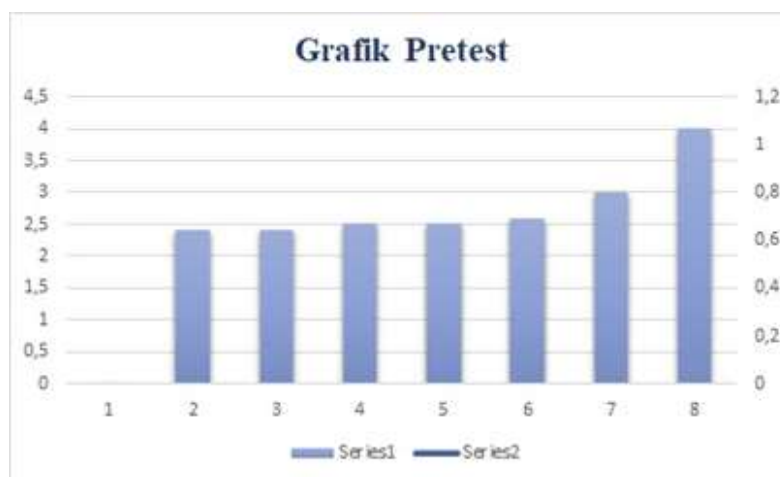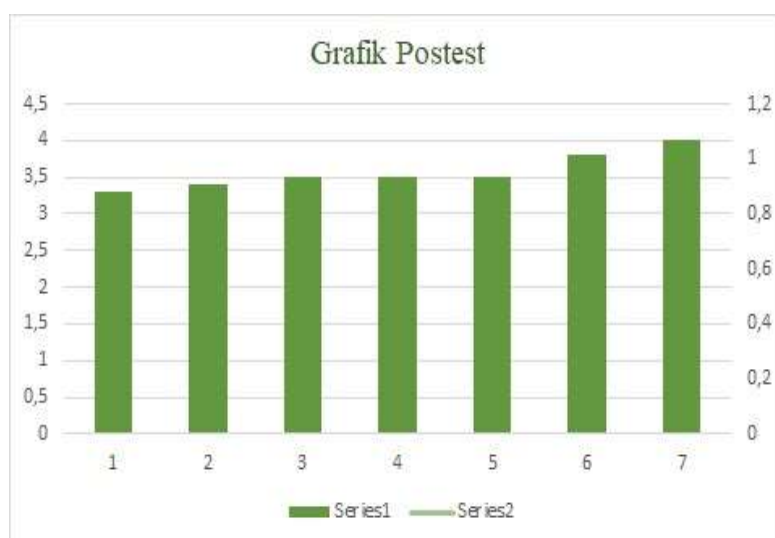
Figure 4. Chart Pretest
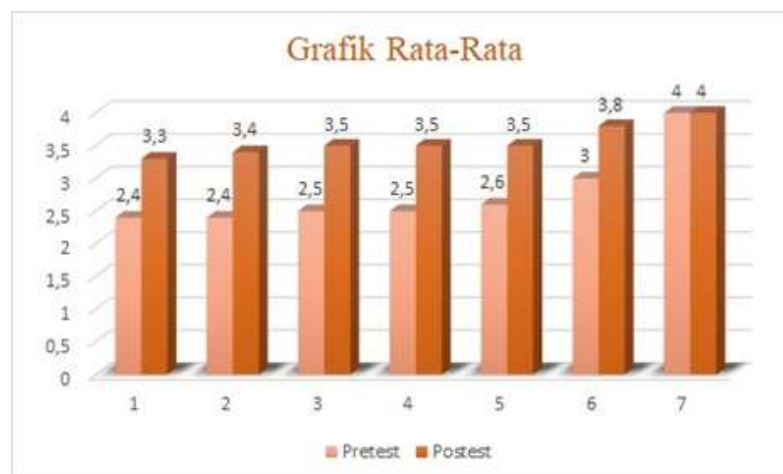

Figure 5. Chart Posttest

Figure 6. Chart Average

4.   CONCLUSION

The Artificial Intelligence (AI) introduction training for teachers at SMPN 2 Buay Pemuka Peliung has succeeded in improving teachers' understanding and skills in utilizing AI technology in the learning process. Through the hands-on training method, participants gained direct experience using AI platforms such as ChatGPT, Gamma AI, and Invideo AI in designing questions, materials, and interactive teaching media. The evaluation results showed an increase in understanding scores from pre-test to post-test with an N-gain value of 0.65, which is included in the medium to high category. This training is effective in equipping teachers with digital competencies while encouraging educational transformation that is more innovative and adaptive to technological developments. Based on the results of the activity, it is recommended that training like this be carried out continuously so that teachers can better understand and get used to using AI in learning. After the training, there should also be assistance so that teachers are not confused when they start implementing it in class. Schools also need to be supported with adequate facilities, such as smooth internet and sufficient devices. In addition, it would be better if a teacher community were formed to share and learn together about the use of AI. Long-term evaluation is also important to see the real impact of this training on the teaching and learning process.

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