

DEVELOPING TEACHER PROFESSIONALISM COMPETENCIES THROUGH ARTIFICIAL INTELLIGENCE TECHNOLOGY DIGITALIZATION TRAINING

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Abstract

This activity aims to investigate the development of competencies of teachers at SMA Negeri 9 Pontianak through Artificial Intelligence (AI) technology training. The method used in this research involves training and mentoring in creating AI products. The teachers are provided with an introduction and explanation of the advantages, disadvantages, benefits, and steps in using AI. They are then given the opportunity to use AI in creating learning products. The results of this activity indicate that AI technology training can empower teachers in enhancing their skills in creating learning products. Teachers can integrate AI into the learning process. This activity provides an important contribution to understanding the development of teacher competencies through AI training. The practical implication of this activity is the importance of developing teacher competencies to face technological advancements in the field of education.

Keywords: Artificial Intelligence, Teacher Competencies, Technology Training

INTRODUCTION

Education is one of the crucial aspects in the development of a nation as it shapes the quality of human resources (Iwan Ramadhan, 2023). Teachers are one of the key factors in determining the quality of education (Ramadhan, 2024). Therefore, it is important for teachers to continuously develop their competencies (Imran, 2023) in order to provide quality teaching to students (Imran, Utami, et al., 2024). In the era of rapid technological advancements like today, the use of Artificial Intelligence (AI) technology can be a solution to enhance teacher competencies (Arisanti et al., 2024).

Education is a field that constantly evolves along with the rapid development of technology (Nurillahwaty, 2022). One of the latest innovations that can have a positive impact in the field of education is the implementation of Artificial Intelligence (AI) to support teachers' performance (Rochmawati et al., 2023). SMA Negeri 9 Pontianak is an example of a school that has started to recognize this opportunity by providing AI training to its teachers. The AI

training to support teachers' performance at SMA Negeri 9 Pontianak marks a progressive step in improving the quality of education (Raup et al., 2022).

With the integration of AI technology, teachers can be more efficient in designing curricula tailored to individual students' needs (Imran, 2023). AI can also assist in evaluating students' performance more objectively through accurate and in-depth data analysis (Manongga et al., 2022). Artificial Intelligence, or AI, refers to the ability of machines to mimic human intelligence (Riza et al., 2023). This technology enables machines to learn, think, and make decisions like humans (Lubis, 2021). In the context of education, AI can be utilized to enhance the efficiency and effectiveness of the learning process (Afrita, 2023).

Furthermore, AI training also enables teachers to develop more innovative and engaging teaching methods (Ramadhan, 2021). With the assistance of AI technology, teachers can create more personalized and interactive learning experiences for students (Mambu et al., 2023). For example, through the adoption of AI chatbots, students can access learning materials whenever needed and receive individual guidance (Okonkwo & Ade-Ibijola, 2021). However, despite the significant benefits offered by AI training, there are also challenges that need to be addressed (Shadiqin et al., 2023). One concern is the fear of teachers being replaced by technology (Efison, 2023). Although AI can assist in the teaching process, the emotional connection between teachers and students cannot be replaced by technology (Sarah Hanawald, 2023).

This training is provided to teachers at SMA Negeri 9 Pontianak because teachers are at the forefront of the learning process (Imran, Ramadhan, et al., 2024). They play a crucial role in shaping students' character and knowledge. Therefore, teachers need to have adequate competencies in order to provide quality teaching (Fauziah, 2020). Teacher competencies encompass the knowledge, skills, and attitudes required to carry out their duties as educators (Novauli, 2021). The development of teacher competencies is an ongoing process, and teachers need to keep up with the latest developments in the field of education and technology (Hasnawati, 2020). In the digital era, teachers need to master AI technology in order to integrate it into the learning process (Alfalah, 2022)

IMPLEMENTATION METHOD

The method of implementing this activity involves training and mentoring in product development. The training consists of several stages, including introduction, explanation of advantages and disadvantages, benefits, usage guidelines, and mentoring in the creation of products using Artificial Intelligence (AI). The activity took place in March 2024 at SMA Negeri 9 Pontianak, located at Jalan Tanjung Raya 2, Pontianak Timur District, Saigon Village, Pontianak City, West Kalimantan.

During the introduction to Artificial Intelligence (AI), the teachers were provided with several AI websites. They were then given guidance, explanations, and training on the advantages, disadvantages, benefits, and application usage procedures. In the core activity, the teachers were given the opportunity to use one of the AI tools to create a product. During the product creation process, the teachers were accompanied by PPG Prajabatan students who formed the AI training team.

After the mentoring in product development, the teachers and the AI training team

conducted an evaluation of the existing products and provided reinforcement to the teachers to further develop their skills in using AI to enhance their teaching and learning product development skills. The instruments used in this training activity involved the use of survey percentages and descriptive analysis (Sugiyono, 2019).

RESULTS AND DISCUSSION

This activity began with an opening speech by the Principal of SMA Negeri 9 Pontianak, Mrs. Krisnawati Purnamasari, S.Pd., followed by presentations from Wewen Darmawan, S.Pd., Laditia Dillah Relawati, S.Pd., and Benedictus Audy Andarto, S.Pd., as the AI training team. The topics covered in the AI presentations included beta.diffit.me, conker.ai, gemini.google, gamma.app, chat.pdf, heyzine, and puzzle.org. To facilitate the teachers' access to AI websites, our AI training team provided the access links through Padlet, as it allows us to share links through its interactive collaboration feature (Hadi et al., 2022).



Image 1: Using Padlet to Access Links to AI Websites.

Artificial Intelligence (AI) is usually used by teachers to find answers to questions that they may not know for certain. However, they are unaware that AI has evolved beyond that. Nowadays, Artificial Intelligence (AI) has become a perfect working partner in the current era of technological advancement (Klarisa et al., 2023).



Image 2: Delivery of Material by the AI Training Team

After the presentation of the materials, the AI training team provided guidance and assistance to the teachers of SMA Negeri 9 Pontianak in creating educational products using AI.

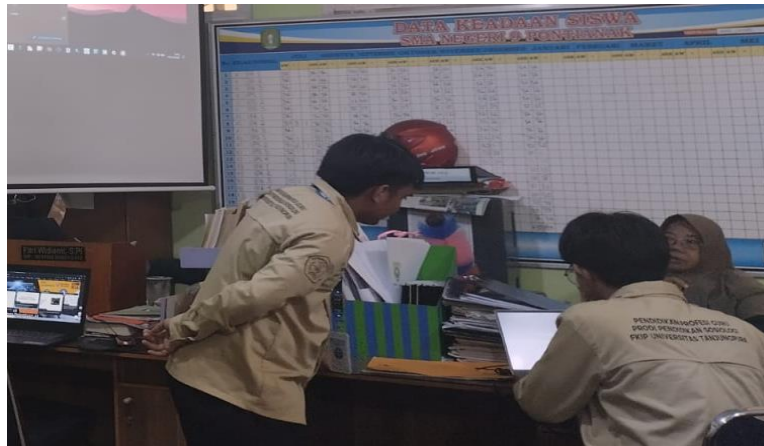


Image 3: Practice and Mentoring for Teachers at SMA Negeri 9 Pontianak

Following the guidance, the participating teachers had the opportunity to practice creating products using AI as explained by the AI training team. The completed products were then presented to the team. The teachers were given the freedom to create products according to the interests of the teachers of SMA Negeri 9 Pontianak using the explained AI. The products created by the teachers included AI-based assessment questions, AI-based learning media, and reading materials for students.

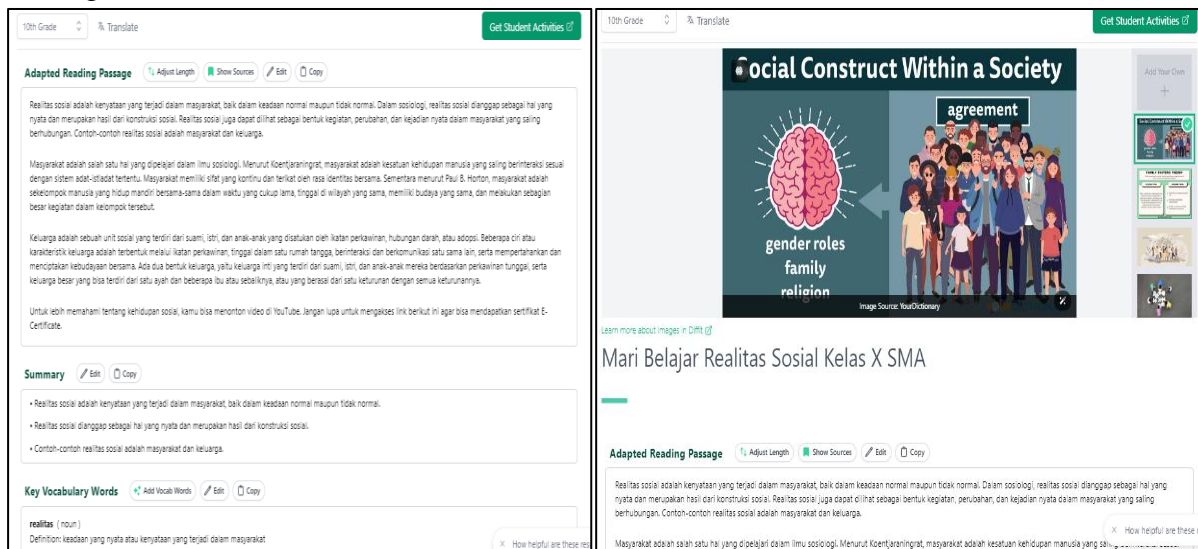


Image 4: One of the Results of AI Utilization

After the AI training and guidance activities, the team conducted an evaluation by asking questions about the use of AI to the teachers. The purpose of this evaluation was to provide reinforcement to the teachers who participated in the training in using AI and to appreciate their success in using AI. It is hoped that the teachers will continue to use and develop AI to enhance their teaching skills in the classroom.

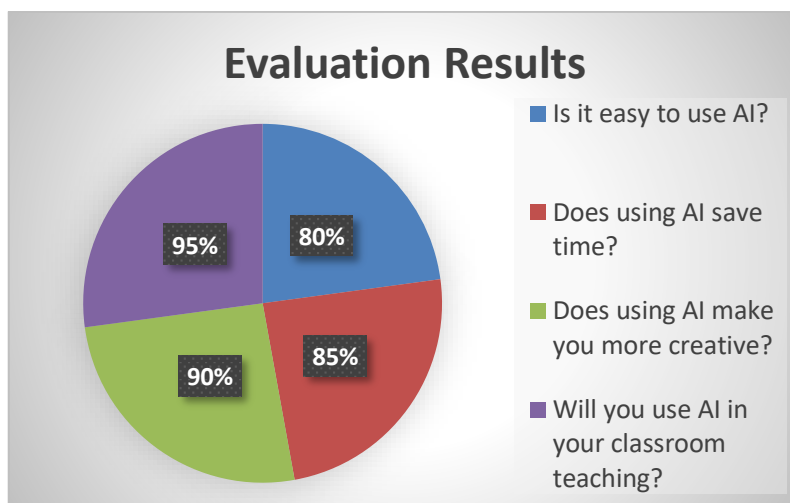


Image 5: Results of AI Training Activity Evaluation

Based on the evaluation data, the question "Is it easy to use AI?" received an 80% positive response. The question "Does using AI save time?" received an 85% positive response. The question "Does using AI make you more creative?" received a 90% positive response. The question "Will you use AI in your classroom teaching?" received a 95% positive response.

The development of teacher competencies is important for improving the quality of education. In the current era of technological advancement, training in Artificial Intelligence can be a solution to develop teacher competencies. This training helps teachers understand the basic concepts of AI, the application of AI in education, and the integration of AI in the teaching process. SMA Negeri 9 Pontianak has implemented AI training for teachers with positive outcomes. The teachers have become more confident and capable of creating engaging learning experiences for students.

The training activities in developing teacher competencies through AI technology at SMA Negeri 9 Pontianak can be categorized as having a positive impact. The participating teachers were given guidance and training on the use of artificial intelligence (AI) to enhance their teaching skills in the classroom. In order to achieve the main objectives and targets of the training, guidance is needed at every step (Purwasih & Rahmadhani, 2022). Initially, the teachers had limited knowledge about the wide-ranging functions of artificial intelligence (AI). Only a few teachers were aware of it, but they had not yet put it into practice.

Training in Artificial Intelligence provides significant benefits to teachers. Fellow teachers acknowledge that there are many benefits to using artificial intelligence (AI). Many tasks can be accomplished using this technology (Lubis, 2021). Firstly, the training helps teachers understand the basic concepts of AI, enabling them to use it effectively. Secondly, the training provides insights into the application of AI in education, allowing teachers to create more engaging and interactive learning experiences. Thirdly, the training helps teachers develop technological skills that they can apply in their daily activities at school. Lastly, the training provides opportunities for teachers to collaborate and exchange experiences with their peers. Therefore, the development of teacher competencies through AI training is an important step in improving the quality of education at SMA Negeri 9 Pontianak.

The mentoring and training activities conducted by the team have proven to be

beneficial for the teachers. Fellow teachers acknowledge that there are many benefits to using artificial intelligence (AI). Many tasks can be accomplished using this technology (Lubis, 2021), such as creating questions, providing reading materials, creating modules, automatic summarization, and interactive learning media.

The school administration is highly supportive of providing training in artificial intelligence (AI) because of its numerous and sustainable benefits in the field of education. Teachers are expected to master current technologies, and they are encouraged to utilize the available resources and facilities to ensure diverse and varied teaching materials for students. We, as members of the PKM team, are very grateful for the trust given to us by SMA Negeri 9 Pontianak. Thanks to the support from all parties, this activity has been successfully completed. We hope that this activity will be beneficial for fellow teachers at SMA Negeri 9 Pontianak, and we look forward to future collaborations between the PKM team and SMA Negeri 9 Pontianak on other occasions.



Image 6. The members of the PKM team presented a plaque of appreciation to the Principal of SMA Negeri 9 Pontianak.

CONCLUSION

In the era of rapid technological development, the use of AI can be a solution to enhance teacher competencies. The AI training provided to teachers at SMA Negeri 9 Pontianak enables them to be more efficient in designing curricula tailored to individual student needs. Additionally, AI can assist in objectively evaluating student performance through accurate data analysis. With the adoption of AI technology, teachers can create more personalized and interactive learning experiences for students. Although AI training offers significant benefits, challenges such as concerns about the replacement of teachers by technology still need to be addressed. The AI training activities were carried out through introduction, explanation, training, product creation assistance, and product evaluation.

The results of these activities demonstrate that teachers at SMA Negeri 9 Pontianak can access and utilize various AI websites with the assistance of Padlet to enhance their skills in creating learning and teaching products. Artificial Intelligence is not just a tool for finding answers, but also a perfect working partner in the current era of technological development. Therefore, AI training is a progressive step in improving the quality of education and enhancing teacher competencies in facing the digital era.

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