

The Use of AI Tools in Supporting Academic Activities for High School/Vocational School Teachers in Bekasi

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Abstract

The goal of this community service project was to improve lecturers' and teachers' abilities to use cutting-edge prompting strategies based on artificial intelligence (AI) as a breakthrough in teaching. Chain of Thought (CoT) and Role Prompting, two crucial prompting techniques that have been demonstrated to greatly enhance human-AI interaction in educational settings, were the main topics of the course. Twenty-five participants from different educational institutions participated in a series of workshops, practical exercises, and case-based discussions. The findings showed that participants' capacity to create efficient and contextually relevant prompts had significantly improved. Additionally, the training helped teachers become more technologically literate and acted as a link to assist the continuous digital transformation of education. The initiative highlights the importance of equipping educators with AI-related skills that are both practical and pedagogically meaningful, especially as generative technologies become increasingly embedded in learning environments.

Keywords: *Artificial Intelligence in Education, Prompt Engineering, Chain of Thought, Role Prompting, Digital Literacy for Educators*

1. INTRODUCTION

Numerous facets of life, including education, have undergone radical transformation as a result of the quick development of digital technology, especially in the domain of artificial intelligence (AI). The use of intelligent conversational technologies like Microsoft Copilot, Gemini, and ChatGPT is one of the most well-known uses of AI in education [1]. These tools are useful for a variety of tasks, such as writing assistance, idea generation, curriculum design, and student assessment, because they can comprehend and react to natural language inputs. Many secondary school teachers are still unsure about how to use these technologies in an ethical, contextual, and successful manner, despite their increasing prevalence. This digital divide, especially at the level of pedagogical innovation, represents a significant challenge in ensuring that AI is used responsibly and productively in schools [2].

This circumstance served as the basis for the creation and execution of a community service initiative that aims to improve the technical literacy of Bekasi's high school and vocational school teachers. Teachers who had previously had limited access to advanced technology training, especially in the area of artificial intelligence, were the program's target audience. By offering direct, practical encounters with AI tools in educational contexts, the course was purposefully designed to go beyond theoretical principles [3]. The course gave participants the skills they needed to investigate and effectively incorporate AI tools into their teaching practices through a combination of hands-on demonstrations, supervised experimentation, and group discussions. This methodology guaranteed that the education was both pertinent and based on practical classroom implementations [4].

Teachers voiced significant and frequently recurring worries about the validity of implementing AI in the classroom during the sessions. The ambiguity that frequently follows technology progress in education was expressed in questions such "Is it acceptable to use AI to generate test items or lesson content?" These worries are similar to the skepticism that surfaced

when search engines like Google gained popularity. But just like with previous technological changes, the teacher's position is still crucial [5]. Teachers who can effectively use AI will be better prepared to handle the challenges of a quickly changing educational world; AI is not meant to replace educators. As such, it is critical for educators to understand not only the capabilities of AI tools but also their limitations and the ethical frameworks necessary for their responsible use [6].

This program also reflects the university's larger dedication to bringing research and technology innovations to the community for practical use. Teachers need to possess 21st-century skills, such as technological fluency and topic expertise, since they are the front-line educators. AI integration into their daily work routines has the potential to improve academic results, encourage instructional creativity, and increase job efficiency. By providing research-based training that is in line with real classroom requirements, the program advances the overarching objective of closing the gap between the advancement of technology and its application in the classroom. To guarantee that all educators are equipped to take the lead in the era of digital transformation, comparable programs should be institutionalized and expanded in the future [7].

2. METHOD

The practical prompt engineering session, which exposed participants to the organized method known as ROLE-TASK-FORMAT-CONSTRAINT-COVERAGE (RTFCC), was a key aspect of the program. With the aid of this framework, educators were able to create prompts with increased accuracy and clarity, allowing AI technologies to provide more pertinent and context-specific answers. For example: "As a third grade science teacher, create a lesson plan on photosynthesis using problem-based learning." Participants were invited to create a challenge like this. Participants in this activity developed a better awareness of how prompt specificity and structure directly affect the caliber and usefulness of AI-generated outputs.

Additionally, participants were urged to test out other AI platforms in order to compare the responses of each tool to the same prompt. Teachers were able to evaluate each chatbot's advantages, disadvantages, and potential biases thanks to this comparative method. Additionally, they received training on how to assess AI responses critically, particularly with regard to cultural appropriateness, factual accuracy, and pedagogical congruence. These thoughtful conversations prompted participants to see AI technologies as assistants whose outputs need to be vetted using professional judgment rather than as perfect information sources.

The training's interactive and participatory elements created a stimulating learning atmosphere where educators felt free to share their experiences, challenge preconceptions, and ask questions. The facilitators placed a strong emphasis on moral issues including intellectual copyright, data privacy, and plagiarism, especially when it comes to employing AI to create instructional materials. Emerging regulatory viewpoints on AI in education from both international frameworks and country education regulations were also presented to the participants. Through these conversations, they became more conscious of the obligations that come with using AI and the significance of setting an example of moral online conduct for students.

All things considered, the training was successful in bridging the gap between theory and practice. Through the combination of fundamental knowledge, live demonstrations, and practical exercises, participants gained both technical expertise and a critical attitude toward integrating AI. The course was very thorough and useful because it included resources for research, academic writing, and teaching. After the event, educators had a better grasp of how AI may be used as a strategic partner in education, one that, when applied properly, encourages critical thinking, boosts productivity, and encourages innovation.

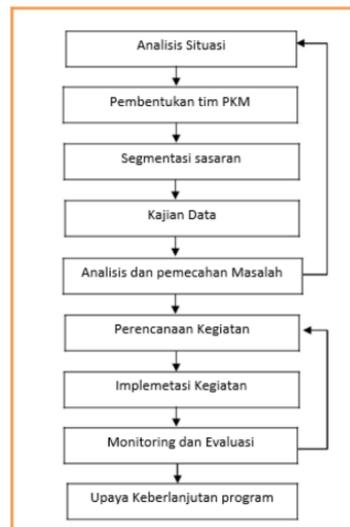


Figure 1. PKM Method Activity

3. RESULT AND DISCUSSION

The results of the training were very favorable. According to participant conversations and post-training observations, more than 80% of participants said the program greatly enlightened and helped them. Many interviewees acknowledged that they had never utilized AI tools for teaching before because they thought the technologies were either too complicated or unrelated to their teaching setting. But following the practical practice sessions, participants were more assured and started to think of ways to incorporate AI into their teaching methods. One of the program's major successes was the transition from fear to active investigation.

After comprehending the fundamentals of successful prompting, participants' prompt creation clearly improved. Additionally, they were able to assess the caliber of AI-generated responses from various chatbot platforms. Participants used the same structured prompt in both ChatGPT and Gemini, for example, when given the job of creating a lesson plan based on the Merdeka Belajar curriculum. They then critically examined the advantages and disadvantages of each output. Their digital literacy and critical thinking abilities were enhanced by this comparative activity, which also helped them develop a more critical and perceptive attitude toward the application of AI.



Figure 2. Discussion of PKM material

Together with the technical skills learned, group discussions also demonstrated a greater understanding of the moral implications of AI in the classroom. Instructors recognized the significance of preventing plagiarism, confirming information produced by AI, and utilizing AI technologies as cooperative partners rather than complete substitutes for human input. The core

of teaching creative thinking, contextual understanding, and professional judgment remains a human obligation, the facilitators stressed, even though AI can be a potent help. In order to prepare teachers to mentor children in responsible technology use, this ethical lens is essential.

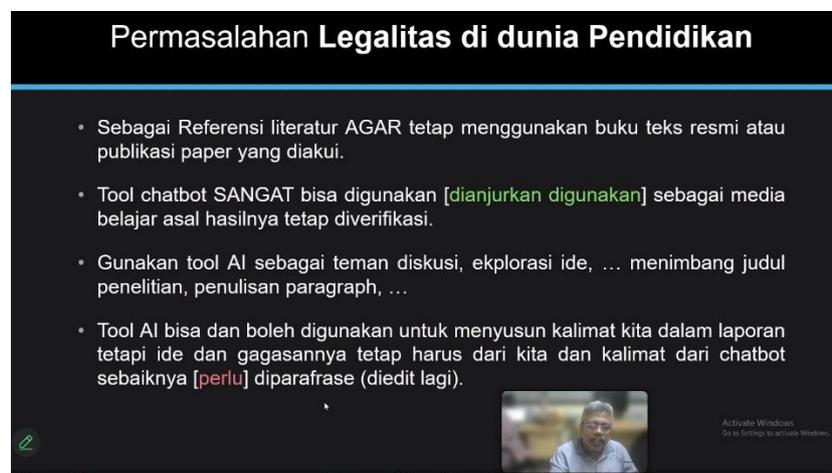


Figure 3. Discussion of advanced PKM material

During the training, several technical difficulties were observed, especially for individuals who did not have active accounts or whose equipment were incompatible with specific AI platforms. Nevertheless, temporary trial accounts and on-site technical support helped to overcome these difficulties. To support further independent research, participants were also given carefully chosen lists of resources, such as educational videos and learning platforms. This made sure that the training continued beyond the program and started a continuous path of digital empowerment and professional development.

4. CONCLUSION

High school and vocational teachers' comprehension and practical abilities in using AI technologies to support their academic activities were effectively improved by this community engagement project. In addition to gaining technical expertise in using AI-based platforms, educators also gained understanding of their potential, constraints, and ethical implications in the educational setting through a practical and interactive approach. Through the use of organized exercises and real-world examples, participants were able to gain a critical awareness regarding the ethical usage of AI in educational settings.

By redefining AI as a chance to increase productivity, spur instructional creativity, and enhance administrative efficiency rather than as a danger to educators, the program assisted in changing the participants' viewpoints. Participants were able to create precise and pedagogically relevant inputs that produced correct and context-specific AI replies when the structured ROLE-TASK-FORMAT-CONSTRAINT-COVERAGE (RTFCC) prompt framework was introduced. In addition to improving output quality, this approach gave teachers the confidence to interact with AI as knowledgeable users who could adapt tools to suit particular classroom requirements.

This program is an important first step toward improving teachers' digital literacy, especially in the new area of integrating AI into the classroom. As long as the tools are introduced with clear instruction, contextual relevance, and ethical concern, instructors are ready and eager to embrace technological innovation, as evidenced by the good response and high level of participation. Similar training programs should be frequently presented and supplemented by online modules to reach a wider audience of educators in various places in order to maintain this momentum.

To keep instructors at the forefront of educational innovation, higher education institutions must play a crucial role in escalating the technological change in classrooms. In addition to providing training and outreach, universities also need to actively participate in content curation, instructional framework development, and promoting cooperation between academic institutions and educational institutions. Such projects can greatly contribute to a more egalitarian and future-ready educational system by connecting research, technology, and classroom practice.

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