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Smart-Ai: Strengthening Media Advancement And Resourceful Teaching Through Artificial Intelligence – A Capacity Building Program For Teachers

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Abstrak: Teachers have both possibilities and problems as a result of the rapid growth of artificial intelligence (AI) in education, especially in rural regions where internet literacy is still low. The goal of this community service project, SMART-AI: Strengthening Media Advancement and Resourceful Teaching with Artificial Intelligence, was to improve the ability of SMAN 1 Sirenja instructors to create instructional media that incorporates AI. The program's goal was to improve instructors' confidence, understanding, and proficiency using AI technologies like Magic School AI and Canva AI. Pretest and posttest questionnaires were used as part of a quantitative method to evaluate improvements in teacher competency. SPSS was used for the analysis of data from 25 individuals. Participants' posttest scores significantly improved, according to the results, demonstrating a greater grasp of AI-assisted media creation. Additionally, educators expressed increased enthusiasm and a move toward more creative, student-centered teaching methods. Notwithstanding obstacles including uneven internet connection and disparities in digital skills, the initiative was able to accomplish its goals. In summary, SMART-AI showed the value of consistent AI integration in teacher professional development and made a significant contribution to the preparation of educators for the future.

Keywords : Artificial_Intelligence, Instructional, Media, Teacher

INTRODUCTION

The use of artificial intelligence (AI) into teaching and learning processes has become a game-changer in the quickly changing field of education (Hamal et al. 2022; Korteling et al. 2021). With the advent of AI, big data, and automation, the Fourth Industrial Revolution requires educators to not only adapt but also take the lead in pedagogical innovation (Ivanenko et al.

2024). Despite this, there is empirical evidence of a major digital divide and skill gap among educators in rural and semi-urban regions like Sirenja District, Central Sulawesi (Siradjuddin 2021). This is especially true when it comes to their ability to create effective digital teaching materials utilizing AI-based technologies.

The potential of AI to provide individualized and adaptable learning experiences is demonstrated by recent research. discovered that instructional media powered by AI enhances student engagement and academic performance (Ahmar and Azzajjad 2023; Azzajjad and Ahmar 2020). However, the majority of these research concentrate on metropolitan schools with sophisticated technology infrastructure or higher education institutions. However, there is still a substantial study vacuum in the use and empowerment of AI-assisted teaching at the secondary school level due to the understudied digital capabilities of teachers in more rural or underresourced settings (Khaled AlKoheji and Al-Sartawi 2023; Rahiman and Kodikal 2024).

Furthermore, a preliminary poll at SMAN 1 Sirenja found that over 70% of instructors knew very little about using AI technologies like Magic School AI or Canva AI or ChatGPT to create educational materials . This disparity between teacher skill and technology availability highlights the critical need for focused capacity-building initiatives that are applicable, realistic, and in line with regional requirements.

This community engagement program's uniqueness is found in its integrated, practical approach to teacher preparation, which not only introduces AI-powered media tools but also fosters pedagogical thinking about how these tools may significantly improve learning in the classroom. In order to develop innovative teaching methods, SMART-AI uses a dual lens technological and instructional whereas other programs have mostly concentrated on the technical components.

The objectives of Education 4.0, which demand that instructors serve as facilitators of dynamic, technologically enhanced learning environments, further emphasize the significance of this endeavor (Ahmar, Muhammad Fath Azzajjad, and Ahmar 2023; Satria Ahmar, Fath Azzajjad, and Saleh Ahmar 2023). Teachers in places like Sirenja must not fall behind as education undergoes a digital revolution. Rather, they need to be given the tools they need to become AI-savvy teachers who can connect regional issues with worldwide trends in education.

In light of this, the SMART-AI program's goals are to: Improve SMAN 1 Sirenja instructors' capacity to use AI applications to provide interesting and

pertinent digital teaching materials. enhance educators' comprehension of the educational uses of AI in the classroom. Encourage environmentally friendly digital teaching methods that meet requirements for education that are prepared for the future. This program's theoretical framework is based on Mishra & Koehler's (2006) Technological Pedagogical Content Knowledge (TPACK), which highlights the interplay of technology, pedagogy, and content as essential to successful digital education. Additionally, Vygotsky's socio-cultural theory specifically, the importance of community support and scaffolding in promoting teacher learning—informed the training module's design. Given the aforementioned, the study's working hypothesis is that "teachers who receive targeted training in AI-based media design will demonstrate significant improvements in digital pedagogical competence and innovation in classroom media production."

METHODS

SMAN 1 Sirenja, situated in Donggala Regency, Central Sulawesi, served as the venue for this community involvement initiative. This activity's main goal was to improve secondary school teachers' digital pedagogical skills by using artificial intelligence (AI) apps to create interactive learning materials. Subject instructors from a range of disciplines who were all actively teaching at the school during the 2024–2025 academic year made up the target participants.

Several AI-based learning platforms and tools, including Canva AI, ChatGPT, Magic School AI, and other open-source content creation tools, were among the main resources utilized in this training. To support the practical exercises and live demonstrations, supporting equipment including computers, projectors, and internet connections were also necessary.

In order to measure improvements in instructors' knowledge and proficiency, assessment tools in the form of structured questionnaires were used to gather data. These instruments served as both pretest and posttest tools. Prior to and during the intervention, the surveys assessed participants' knowledge and proficiency in creating, modifying, and utilizing AI-driven media. Basic AI literacy, pedagogical application, media creation, and reflective education with AI were among the topics addressed by the questions.

The SMART-AI training program serves as the study's independent variable, and the instructors' proficiency with digital pedagogy specifically, AI-powered media design is its dependent variable. The capacity of instructors to comprehend, apply, and incorporate AI tools into the creation of instructional

material that promotes dynamic and captivating learning experiences is the operational definition of digital pedagogical competency.

Software called the Statistical Package for the Social Sciences (SPSS) was used to evaluate the data gathered from the pretest and posttest assessments. The significance of the increase in instructors' abilities before and after the training was assessed using a paired sample t-test. The outcomes were analyzed to assess how well the SMART-AI program accomplished its stated aims and advanced the more general objectives of teacher preparation for the future.

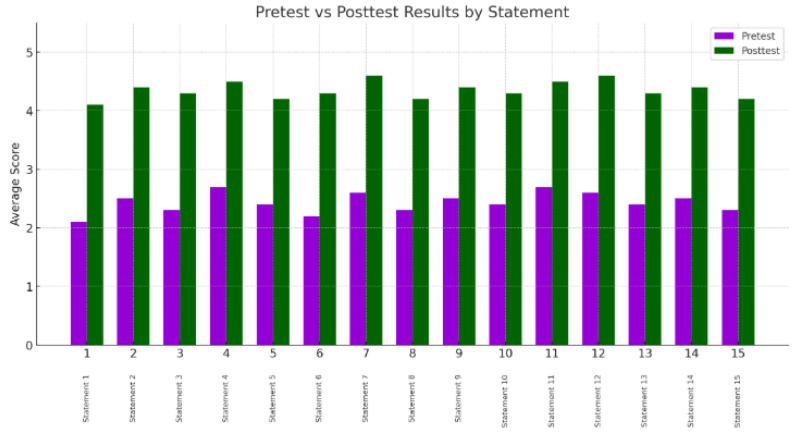
RESULTS AND DISCUSSION

A pretest and posttest were given to 25 instructor participants at SMAN 1 Sirenja in order to assess the efficacy of the SMART-AI training program. The tool assessed digital pedagogical proficiency in artificial intelligence-based media creation. SPSS was used for both descriptive and inferential analysis of the data.

Table 1. Descriptive Analysis of Pretest and Posttest Scores

Statistics	Pretest Score	Posttest Score
N	25	25
Minimum	48	74
Maximum	71	95
Mean	59.24	85.16
Standard Deviation	6.58	5.47

Following the training, participants' scores significantly improved, according to the descriptive analysis. The mean score increased from 59.24 to 85.16, suggesting that instructors' proficiency in creating instructional material with AI integration has significantly improved. Following the training, the standard deviation dropped from 6.58 to 5.47, indicating more consistent performance among the participants.



No.	Questionnaire Statement
1	I understand the concept and potential of Artificial Intelligence (AI) in education.
2	I am able to identify AI tools that are useful for developing instructional media.
3	I can effectively use AI-based design tools like Canva AI.
4	I can create learning materials using AI tools.
5	I understand the ethical considerations when using AI in teaching.
6	I am confident in integrating AI tools into classroom activities.
7	I can differentiate between traditional and AI-enhanced instructional media.
8	I can guide students in using AI tools for learning purposes.
9	I believe AI can improve the quality of learning delivery.
10	I am motivated to explore more about AI in education.
11	I am able to evaluate the effectiveness of AI-based teaching media.
12	I can modify AI-generated content to suit my students' needs.
13	I know how to access and utilize free AI educational platforms.
14	I can work collaboratively with colleagues to develop AI-based learning materials.
15	I plan to apply AI-based media in my teaching practice regularly.

Figure 1. Results of evaluation analysis of community service activities

Table 1. Inferential Analysis (Paired Samples T-Test using SPSS)

Paired Differences	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Posttest - Pretest	25.92	5.76	1.15	22.53	24	0.000

The findings of the paired samples t-test show that the difference between the pretest and posttest scores is statistically significant ($t = 22.53$, $p < 0.001$). This indicates that the participants' knowledge and proficiency in AI-based media creation were significantly and favorably impacted by the training course. Additionally, the significant t-value suggests that the observed difference is not likely the result of chance.

The analysis unequivocally demonstrates that the SMART-AI training program improved the instructors' digital pedagogical proficiency at SMAN 1 Sirenja. Teachers showed more assurance when creating innovative, flexible, and student-centered learning materials utilizing AI technologies like Canva AI and Magic School AI. Numerous participants stated that the AI technologies improved the speed, engagement, and student-centeredness of material development.

Participants' attitudes about technology-enhanced instruction underwent a dramatic change as a result of the SMART-AI training program. The practical experience that educators had while investigating AI tools that were completely

unfamiliar to them was among the most influential elements. Many people were utilizing Canva AI, ChatGPT, and Magic School AI for the first time, so the chance to actively interact with these tools in a safe setting gave them a lot more confidence. Participants therefore gained new technical abilities as well as a greater comprehension of how AI may significantly improve their teaching methods.

Additionally, instructors' passion and intellectual curiosity were rekindled by the curriculum. Many participants expressed interest in attending follow-up workshops and individually studying AI applications for education, indicating that exposure to cutting-edge digital technologies sparked a desire to learn more after the training (Li et al. 2023; Olstad and Boyland 2023). This suggests that the training acted as a catalyst for ongoing professional development in addition to simply improving abilities.

Crucially, fresh educational viewpoints were also presented throughout the course. Teachers started to regard AI as a strategic element of instructional design rather than just a technical add-on. They were urged to consider the ways in which AI may enhance formative assessment, learner engagement, and differentiation. Many reorganized their instructional design as a result of this mentality change, abandoning static, one-way communication tools like conventional PowerPoint slides in favor of interactive, AI-driven modules that could adjust to the needs of the students, encourage inquiry, and customize the learning process.

Notwithstanding the numerous advantages, there were some difficulties in putting the instruction into practice. Limited internet access during some sessions was one of the main problems, which interfered with real-time engagement with online AI platforms and disturbed the flow of operations. In addition to delaying the learning process, these technical issues made participants frustrated, especially during tool demonstrations and group activities.

The instructors' varying degrees of digital literacy presented another significant obstacle. Some participants found it difficult to grasp AI instructions or navigate web interfaces, while others rapidly adjusted to the new capabilities. Because of the unequal training pace caused by this disparity, facilitators had to offer extra mentorship and tailored instruction to make sure no one was left behind.

Furthermore, one of the limiting factors was the training's time limitation. Many instructors believed that the sessions were too brief to thoroughly examine the sophisticated aspects of AI applications or to

thoughtfully consider the educational implications of these tools, despite the fact that they were intended to be intense and practice-oriented. In order to facilitate incremental mastering, participants suggested that future workshops be delivered in numerous phases or spread out over several weeks.

Finally, a small but significant problem was found to be linguistic obstacles. A number of AI systems displayed their user interfaces and material mostly in English, which was difficult for teachers who didn't speak the language well. Some participants' overall performance was decreased as a result of sporadic misinterpretations of tool operations or directions (Feng et al. 2023; Pratiwi, Sanusi, and Hasibuan 2022). Future iterations of the curriculum may address this issue by improving accessibility and inclusion through the use of translated materials or localized technologies.

CONCLUSIONS

Enhancing teachers' proficiency in using artificial intelligence for educational media production has been made possible by the SMART-AI capacity building program at SMAN 1 Sirenja. Teachers were able to greatly enhance their comprehension and practical abilities in incorporating AI technologies into their teaching methods through practical training, organized assessments, and cooperative learning. Following the training, participants' knowledge and digital pedagogical competency significantly increased, according to the findings of both descriptive and inferential analysis. In addition to exposing participants to cutting-edge technology, the program changed their perspective on education by promoting more inventive, flexible, and student-centered methods of instruction. The program's overall impact was unquestionably good, despite a number of difficulties, including uneven internet access, disparities in digital proficiency, and a short training period. The participants indicated a great desire to keep investigating digital advances and incorporating them into their instruction in a meaningful way. To sum up, our community service project has helped achieve the larger objective of training educators who are prepared for the future and can use AI to satisfy the demands of 21st-century learning. To guarantee the long-term sustainability and scalability of integrating AI in education, it is advised that comparable programs be expanded to other schools, get ongoing mentorship, and receive sustained follow-up assistance.

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