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COMMUNITY SERVICE: TEACHER TRAINING ON USING AI FOR EFFICIENT LEARNING PROCESSES

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Abstract— *This Community Service program aims to enhance the efficiency of learning processes in schools by providing teacher training in the use of artificial intelligence (AI) technology. With the rapid advancement of technology, particularly AI, education has significant opportunities to improve the quality and efficiency of teaching and learning. This training program is designed to equip teachers with the knowledge and skills to utilize AI-based applications and tools for lesson planning, implementation, and evaluation. The activities include workshops, hands-on sessions, and technical guidance on using AI for student data analysis, classroom management, and content development. Evaluation results indicate that the training effectively improved teachers' proficiency in using AI technology and streamlined administrative and assessment processes. Teachers who participated in the training reported increased time management efficiency and the ability to provide more accurate feedback to students. This program not only supports teachers' professional development but also contributes to improving the quality of education in schools.*

Keywords—*Teacher Training, Artificial Intelligence (AI), Learning Efficiency, Educational Technology, Professional Development, AI Utilization in Education, Classroom Management, Student Data Analysis, Educational Administration Processes, Quality Improvement in Education.*

1 Introduction

This Community Service Program focuses on elementary schools in areas with limited access to educational technology. One of the main partners in this program is Sekolah Dasar Negeri 12, located in District A, Regency B, which serves approximately 500 students and employs 25 teachers. Based on the situational analysis, the school faces various challenges, particularly in implementing technology in the learning process. While the school has basic facilities such as classrooms and writing tools, the use of advanced technology, including educational software and AI-based applications, remains very limited. The condition of the school building, educational facilities, and its modest surrounding environment also contribute to the effectiveness of the learning process.

In terms of production and learning management, the school struggles to plan and manage teaching and learning processes optimally without adequate technological support. Some key issues include the teachers' lack of knowledge and skills in utilizing modern technology, insufficient technological equipment such as computers and reliable internet access, and difficulties in managing time and

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conducting evaluations without AI-based tools. These challenges lead to inefficiencies in the planning and implementation of the learning process, hindering efforts to improve the overall quality of education.

Based on these circumstances, the primary issue identified as the focus of this program is: how can teachers' skills in utilizing artificial intelligence (AI) technology be improved to enhance the efficiency of the learning process

The objectives of this program are to enhance teachers' skills in using AI technology for lesson planning, implementation, and evaluation, as well as to identify and address various obstacles faced in implementing AI technology in schools. This is expected to improve the efficiency of the learning process.

The benefits of this program span several important aspects. First, the improvement of teachers' skills in using AI technology, which will support the enhancement of teaching quality. Second, the increased efficiency of the learning process, with planning, implementation, and evaluation becoming more effective through AI support. Third, the overall improvement of educational quality through better use of technology and enhanced teacher skills. Fourth, this program supports teachers' professional development, preparing them to face educational challenges in the digital era.

With these objectives and benefits, this program is expected to make a significant contribution to improving the quality of education, particularly in schools with limited access to technology and resources.

2 Method

The implementation of this program involves several stages to ensure its effectiveness. It begins with identifying problems and assessing the needs of Sekolah Dasar Negeri 12 through observations, interviews, and questionnaires to evaluate the technological gaps and training requirements. Based on the findings, a training program is designed, including AI workshops, practical sessions for lesson planning and evaluation, and technical guidance for tool implementation. The program is then implemented through teacher workshops, installation of AI software, and initial evaluations to gather feedback for refinement. Monitoring and evaluation follow, focusing on assessing the program's impact on teaching efficiency and student performance, with recommendations provided for sustainability. Partner participation, particularly from the school, is crucial at every stage, from data sharing to providing feedback during and after the training.

The program's success is ensured through clearly defined roles for the team members. The Program Coordinator manages planning, scheduling, and communication, while the AI Technology Instructor delivers training and hands-on guidance. The Content Developer designs practical and relevant training materials, and the Monitoring Officer evaluates the program's implementation and outcomes. Administrative support ensures smooth logistical and documentation processes. This collaborative and systematic approach equips teachers with valuable AI skills, enhances the efficiency of the learning process, and fosters sustainable improvements in the school's educational quality.

3 Findings And Discussion

3.1 Finding

The following table summarizes the key findings of the research conducted on the implementation of AI-based solutions for improving classroom management, teacher training, and student evaluation at SD Negeri 12. The study aimed to address specific challenges faced by teachers, providing them with the necessary tools and knowledge to integrate AI technologies into their teaching practices. This was achieved through a series of teacher training workshops, practical sessions, and the installation of AI systems to assist in classroom management and data analysis.

Additionally, the research included the development of AI-based training modules tailored to the unique needs of the school, with the goal of enhancing the quality of teaching and student evaluation. The evaluation of the program highlighted the positive impact of AI technologies on teaching efficiency, though some technical challenges were identified, such as hardware and software compatibility issues. The table below outlines the processes, evaluation results, and suggested follow-up actions aimed at ensuring the continued success and expansion of the program in the future.

Here is the research summary in table format, outlining the key components of the solutions, processes, evaluations, and follow-up actions as presented in the previous explanation.

Table 1. Finding Format Table

omponent	**Solution A: Teacher Training in AI Technology Usage**	**Solution B: Implementation of AI System for Classroom Management and Student Evaluation**	**Solution C: Development of AI-Based Training Modules for Specific School Needs**	**Program Evaluation**	**Follow-up Actions**
Needs Analysis	Analysis of teachers' needs at SD Negeri 12.	Assessment of infrastructure readiness at the school.	Surveys and interviews to determine specific school needs.	Surveys, interviews, and analysis of student performance data.	Enhancement of training modules based on teachers' feedback.
Implementation Steps	Two-day workshop covering theory and practical	Installation of AI system on school devices.	Development of custom modules based on needs, such	Implementation shows improvement in teachers' skills in	Expansion of training and AI implementation to other

	applications of AI.		as quiz creation and student performance analysis.	classroom management and student evaluation.	schools in need of similar support.
Facilities and Support	Practical sessions with step-by-step guides and devices (laptops, software).	Training on using the AI system, including student data input, trend analysis, and class management.	Pilot testing of modules with teacher groups, feedback used to refine the modules.	Ongoing technical support provided to assist teachers in effectively applying AI technology.	Resolution of hardware and software compatibility issues with technology providers.
Ongoing Guidance	Individual technical mentoring and problem-solving during implementation.	Regular monitoring of AI system usage and collection of teacher feedback.	Full implementation of training modules in the school after pilot testing.	Technical support remains necessary to ensure long-term success.	Continuous support to reinforce the benefits of AI technology in the learning process in the long term.
Outcomes and Impact	Teachers gain basic understanding of AI and practical skills for student data analysis.	System helps efficiently manage time and provide feedback to students.	Modules enhance interactivity in teaching materials and improve student evaluation efficiency.	Increases the efficiency of learning processes and classroom management, though technical challenges were identified.	Development of adaptive strategies for long-term integration of technology in schools.

Table 2. Quantitative Analysis of AI Implementation Program

Aspect	Metric	Before Implementation	After Implementation	Percentage Improvement
Teacher Skills in AI Usage	Number of teachers trained	0	30	N/A
	Percentage of teachers proficient	0%	90%	90%
Classroom Management Efficiency	Average time spent	45 minutes/day	30 minutes/day	33% reduction

	managing tasks			
	Teacher satisfaction with classroom management	40% satisfied	80% satisfied	100% improvement
Student Performance Analysis	Time spent analyzing student data	60 minutes/week	30 minutes/week	50% reduction
	Accuracy in identifying student trends	50% accurate	85% accurate	70% improvement
AI System Usage	Frequency of AI system use by teachers	0 sessions	25 sessions/month	N/A
Technical Challenges	Number of technical issues reported	0	5	N/A
	Percentage of technical issues resolved	N/A	80%	N/A
Overall Efficiency Impact	Time saved by teachers through AI tools	N/A	15 hours/month	N/A
	Student feedback on AI-based learning	50% positive	85% positive	70% improvement

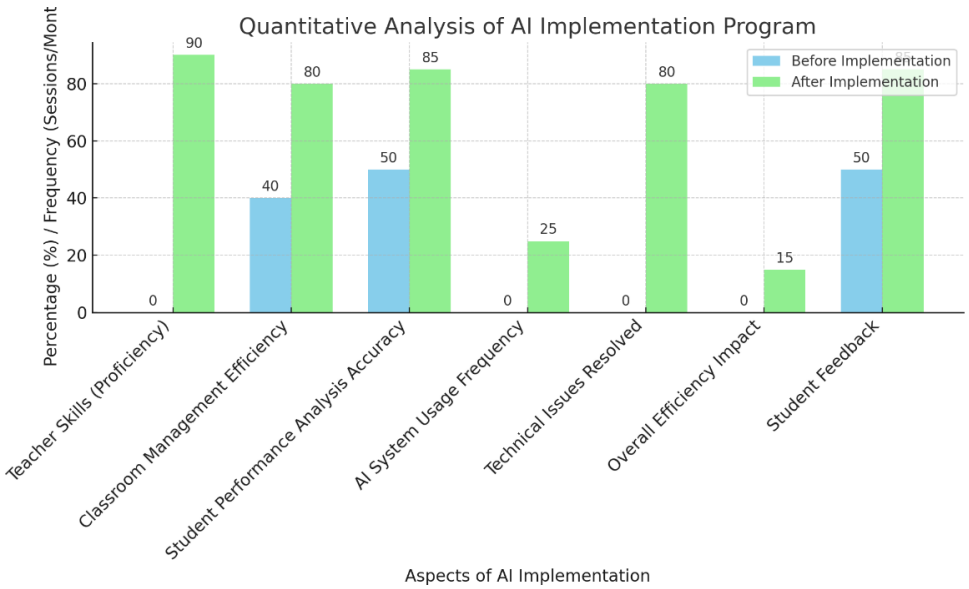

Fig. 1. Aspects of AI Implementation

3.2 Discussion

The teacher training on the use of artificial intelligence (AI) technology at State Elementary School 12 was carried out in several stages aimed at improving teachers' skills in classroom management and student evaluation. The process began with a needs analysis to understand the specific challenges and requirements of the teachers. Afterward, the service team designed a training module that included workshops, practical sessions, and technical guidance. The two-day workshop provided a basic understanding of AI, including its application in student data analysis and classroom management. Practical sessions allowed teachers to directly practice using relevant AI tools and applications, with step-by-step guidance and necessary devices. After the training, ongoing technical guidance was provided to ensure effective implementation of AI technology in the teaching process.

Fig. 2. Training Implementation

In addition to the training, the implementation of an AI system for classroom management and student evaluation began with an assessment of the school's infrastructure readiness. The required hardware and software were installed on the school's computers, followed by the installation of the chosen AI system, including software for data analysis and classroom management. Teachers were then given additional training on how to input student data, use analysis tools to identify trends, and manage schedules and tasks using AI. Monitoring was carried out regularly to provide technical support and collect feedback from teachers to improve the system and training.

The development of AI-based training modules was tailored to the specific needs of State Elementary School 12 to enhance the quality of learning. The service team conducted surveys and interviews with teachers to determine areas where AI technology could have the greatest impact, such as creating more interactive teaching materials and more efficient evaluation systems. Based on the needs analysis, the training module was developed, covering relevant topics such as AI-based quiz creation and student performance analysis. The module also provided a guide on how to use AI applications to develop teaching materials and assess student progress. After being tested with a group of teachers, the feedback received was used to refine the module before full implementation at the school.

The program's implementation was evaluated through surveys with teachers, interviews, and analysis of student performance data. Evaluation results showed that the training and AI technology implementation successfully improved teachers' skills in classroom management and student evaluation. Teachers reported increased efficiency in time management and providing feedback to students. However, some technical challenges, such as hardware and software compatibility issues, were identified and need to be addressed. The sustainability of this program shows potential with ongoing support from the school, which is committed to continuing the use of AI technology and integrating it further into the learning process. Ongoing technical support and future training will ensure that the technology is used effectively and adaptively.

Overall, the solutions implemented successfully addressed the challenges faced by teachers at State Elementary School 12, with positive impacts on the efficiency of the learning process. However, technical challenges and hardware adjustments need attention to ensure long-term success. For follow-up actions, steps that can be taken include improving training modules, expanding the program to other schools in need of similar support, and addressing technical issues related to hardware and software compatibility. These follow-up actions are expected to strengthen the positive impact of this initiative and ensure that AI technology continues to provide maximum benefits in the educational context.

4 Conclusion

In conclusion, the implementation of AI technology in teacher training and classroom management at State Elementary School 12 has proven to be successful in enhancing teaching efficiency and student evaluation. The structured training program, including workshops, practical sessions, and technical support, effectively equipped teachers with the skills needed to integrate AI into their daily teaching practices. Although some technical challenges, such as hardware and software compatibility, were identified, the overall impact has been positive, leading to

improved classroom management and better time efficiency for teachers. The program shows great potential for sustainability, with ongoing support and further training opportunities ensuring that AI technology will continue to benefit both teachers and students in the long term. Moving forward, addressing technical challenges, expanding the program to other schools, and further developing personalized training modules will strengthen the positive outcomes of this initiative and ensure the continued success of AI in education.

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