

## ACCELERATING THE USE OF EDUCATIONAL TECHNOLOGY: A PRACTICAL APPROACH TO ICT SUPPORT AT SD INPRES 3 TALISE

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### Abstract

SD Inpres 3 Talise, located in the Palu Disaster Alert Area, was the target of the community service activity "Accelerating the Use of Educational Technology: A Practical Approach to ICT Mentoring and Empowerment in PMM" aims to improve teachers' ICT capabilities to implement innovative and effective learning methods. Canva and artificial intelligence applications will be covered in in-depth training and mentoring sessions in this project. More than 80 percent of the teachers were successful in using technology, according to the post-training evaluation, which showed a great improvement from the initial condition. With contract number Manual.164/E5/DT.05.00.2024, the project funded by the Directorate of Research, Technology and Community Service (DRTPM) aims to support the improvement of teaching quality. It also prepares teachers to face contemporary education challenges and improves education resilience in disaster-prone areas.

**Keywords:** Educational Technology, ICT Support, PMM, Practical Approach

### INTRODUCTION

The Talise area in Palu, Central Sulawesi, is designated as a disaster red zone because it is highly vulnerable to tsunamis. Its place in Palu Bay increases the risk, especially due to the earthquake and tsunami that occurred on September 28, 2018 (Pradoto et al., 2022; Sulbadana, 2020). This earthquake caused tsunami waves up to 5 meters high in some places, including in Talise (Mazova et al., 2022; Monecke et al., 2017). This impacted the social and economic life of local communities in addition to physical damage. The massive damage that occurred suggests that early warning and disaster mitigation systems should be improved. In addition, the research and experience of this disaster provide important lessons on how important it is to prepare communities and build infrastructure that is more resilient to disasters in vulnerable coastal areas such as Talise. After the earthquake and tsunami hit Palu on September 28, 2018, the education system in Palu faced many challenges in the recovery process. Thousands of students had to study in makeshift tents or other temporary structures as many schools suffered severe damage. When education infrastructure is significantly damaged, it hinders the teaching

and learning process and leads to non-ideal education conditions. (Anda et al., 2021; Sari Ismail & Rahaditya, 2023).

The government, together with various aid agencies and non-governmental organizations, is trying to rebuild schools and other educational facilities in this context. These programs include training teachers to help students who have experienced post-disaster trauma, rebuilding more disaster-resistant school buildings, and implementing disaster education in the school curriculum.

Education recovery has begun with a holistic and collaborative approach between institutions. This is happening despite the gradual pace of recovery. To build community resilience and preparedness for future disasters, teacher education and training programs continue to be strengthened. Through these efforts, the education community in Palu seeks to ensure that all children can continue their education in a safe and supportive environment.



**Figure 1. Red Zone View of Talise Area, Palu, Central Sulawesi Province**

The Community Service activity (PkM) "Accelerating the Use of Educational Technology: A Practical Approach to ICT Assistance and Empowerment in PMM at SD Inpres 3 Talise (Palu Disaster Alert Area)" aims to improve the quality of education through the application of information and communication technology (ICT). The purpose of this initiative is to encourage the utilization of educational technology that can assist the teaching and learning process in disaster-prone environments and to encourage access and utilization of such technology.

Specifically, PkM activities aim to: 1) Integrating Technology in the Curriculum, encouraging the use of digital tools during the learning process, making learning more interactive and interesting for students, 2) Building Teacher Capacity, providing training and mentoring to teachers at SD Inpres 3 Talise to improve their ability to use educational technology and manage the classroom with digital tools, 3) Increasing Resilience to Disasters, building and implementing an education system that can function in the event of a disaster, such as a learning management system that can be accessed remotely and e-learning. 4) Innovation in Education, encouraging the use of new learning approaches and media supported by the latest technology to improve student engagement and learning effectiveness. And 5) It is hoped that these efforts will result in flexible education models that are relevant for disaster-affected areas such as Palu and can be applied elsewhere experiencing similar issues.



**Figure 2. Service Activity Program at SD Inpres 3 Talise**

Leveraging Canva and AI to transform education. To support dynamic learning needs in disaster-prone areas (Biswas et al., 2022; Rusmanto et al., 2022), this program aims to integrate efficient and accessible technological solutions. Using Canva, a user-friendly graphic design platform, teachers and students can create visual and engaging learning materials. Canva enables the creation of presentations, infographics and other teaching materials that can enhance students' learning experience and improve their understanding of complex concepts (Yuma et al., 2023).

In addition, this activity involves the use of adaptive learning systems, which have the ability to analyze students' learning styles and automatically adjust learning materials to meet the individual needs of each student. AI is also used to provide real-time feedback to students, which makes it possible to detect and deal with learning problems quickly and efficiently. (Husain, 2024; Kamruzzaman et al., 2023). The combination of Canva and AI not only makes learning materials better, but also ensures that education can continue even in a state of disaster. This technology enables SD Inpres 3 Talise to address various issues facing education in disaster areas, including physical and psychological disruptions that can interfere with traditional learning processes. With this innovation, learning becomes more durable, flexible and inclusive.

The program uses Canva and AI to support and enrich learning experiences in disaster-prone environments. This effort is called "Accelerating the Use of Educational Technology: A Practical Approach to ICT Assistance and Empowerment in PMM at SD Inpres 3 Talise (Disaster Alert Area of Palu)." Teachers can use Canva, an easy-to-use graphic design platform, to create engaging and interactive learning materials. It enables the creation of infographics, posters and presentations that are easier for students to understand (Husain, 2024). In addition, the application of AI in this program focuses on developing an adaptive learning system that can adjust educational content according to students' learning needs and preferences. (Abdalgane & Othman, 2023; Tanveer et al., 2020; Varone et al., 2020). AI also plays a role in providing in-depth analytics on students' learning progress, allowing teachers to customize their learning methods in real-time. The combination of these two technologies is intended to create a robust, mobile and responsive learning environment that improves learning outcomes even in disaster situations.

The Community Service Team (PkM) conducted training for teachers to improve digital skills and the use of educational technology so that teachers of SD Inpres 3 Talise have the expected ICT capabilities. In this training, there are practical modules that discuss various aspects of information and communication technology. These modules range from the basics of using computers and the internet to more complex educational applications, such as learning management systems, using Canva for teaching materials, and artificial intelligence-based learning tools. This approach not only increases teachers' confidence in using technology, but also helps them integrate ICT into their daily teaching strategies. Each training session has many hands-on activities that allow teachers to apply what they learn directly. To ensure that all educators achieve the set competencies, progress evaluations are conducted periodically. The program aims to improve teachers' ICT capabilities to enhance richer and more engaging learning experiences for students. It will also prepare them and the teaching staff to be more resilient to challenges, including the impact of disasters.

## **IMPLEMENTATION METHOD**

The Community Service (PkM) activity at SD Inpres 3 Talise is a broad initiative that aims to improve the quality of education by using technology in the learning process. A series of interrelated processes are involved in this project, starting from socialization, training, technology implementation, mentoring, and evaluation. To achieve the main goal, which is to improve the quality of learning in schools located in disaster-prone areas, each of these steps is crucial.

### **a. Socialization**

This is the first stage of the project. The main objective of this step was to help the Service Team and everyone at SD Inpres 3 Talise understand the purpose, benefits, and implementation mechanism of the activities. The community organized a meeting attended by representatives from the local community, teachers, and school staff. The service team introduced the technology that would be used in this meeting. They also demonstrated how the technology can improve learning and increase the school's resilience to disasters.

The needs analysis for the Community Service (PkM) activities at SD Inpres 3 Talise was conducted through a series of systematic approaches aimed at thoroughly understanding the specific needs of school stakeholders regarding the development of ICT capabilities. This analysis process involved data collection, surveys, in-depth interviews, and focus group sessions with various stakeholders, including teachers, school staff, parents, and community representatives.

The results show that teachers at SD Inpres 3 Talise need to improve their ability to use information and communication technology as a learning tool. This is due to a lack of knowledge about the latest technology and a lack of previous formal training. In addition, with the inclusion of Merdeka Curriculum, which requires the use of technology in the learning process, there is a need to increase teachers' capacity to effectively utilize ICT in their work.

The needs analysis also shows that teachers should be trained in the management of the PMM system. Skills in managing and analyzing digital learning data are critical components in assessing and improving teaching effectiveness. The results of this analysis indicate that PkM

activities are intended to provide comprehensive and structured training that focuses on improving teachers' abilities in the use of ICT, how to use ICT media effectively in learning, and how to manage an effective PMM system to support the implementation of Merdeka Curriculum. It is expected that this activity will help improve the quality of learning at SD Inpres 3 Talise and meet the real needs of teachers.

#### b. Training

The next stage is training after socialization. At this time, teachers at SD Inpres 3 Talise receive intensive training on how to use ICT in learning. Software and hardware usage, digital content management, use of e-learning platforms, and development of interactive teaching materials using tools such as Canva and AI-based learning applications are all examples of this training. The training is designed to be interactive and practical, so teachers can immediately apply the skills they learn.

As part of a larger initiative to support the implementation of Merdeka Curriculum and ensure that educators at SD Inpres 3 Talise have the ability to implement Merdeka Curriculum, intensive training was designed to improve teachers' skills in the use of ICT media in learning.

Training Preparation The PkM team prepared before the training. This included creating the curriculum, selecting and working with ICT and education management experts, and preparing logistics. The selected presenters are education and technology practitioners who have extensive experience in the application of ICT in classrooms as well as education management and evaluation. The training covered both the theory and practice of using ICT in education. The first session focused on using various ICT media for teaching. This included the use of digital whiteboards, interactive software and e-learning platforms. The teachers were taught how to use these technologies to make the subject matter more engaging and interactive.



**Figure 3. Training Activities**

The next session covered technology in real life. Trainees have hands-on opportunities to use the tools and software they have learned. This hands-on workshop gives teachers a better understanding of how to use technology in real learning situations. They can also see the benefits first-hand.

#### c. Application of Technology

Application of technology in the classroom. At this stage, instructors start applying the technologies they have learned in a real classroom environment. This includes the use of media

in education, the use of management systems for assignments and assessments, and the use of online platforms for student interaction. By providing the necessary software and hardware, as well as ensuring that the school's IT infrastructure supports digital learning activities, the service team assists with this step.



**Figure 4: Technology Implementation Activity in the Classroom**

d. Assistance

An important stage in which the Service Team provides ongoing support to teachers as they use the technology in their daily teaching. The team visits schools regularly to track progress, help resolve technical issues, and provide pedagogical advice on how best to utilize the technology. To make teachers confident and feel supported when using new technology, mentoring is essential.

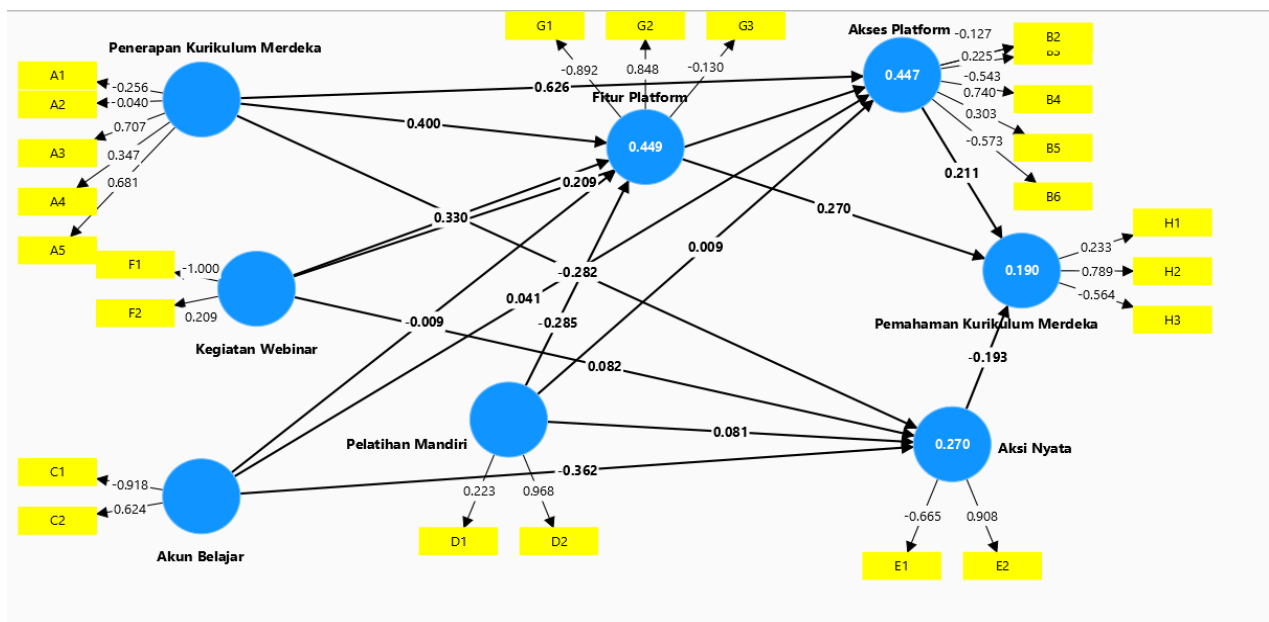
e. Evaluation

This is the final stage of the project. The purpose of this evaluation is to find out how effective the service program is in improving the quality of learning and the use of technology at SD Inpres 3 Talise. This is done by collecting teacher and student feedback, analyzing student learning outcomes, and assessing how effectively technology is used in daily learning. The results of this evaluation will be used to make decisions about future program improvements and adjustments.

The project created an education model that is responsive to local needs and resilient to future disasters through socialization, training, technology application, mentoring and evaluation. The strong relationship between the Service Team and SD Inpres 3 Talise ensured that activities were conducted with clear objectives and mutual support, resulting in a creative and flexible learning environment.

## RESULTS AND DISCUSSION

At SD Inpres 3 Talise, the Community Service activities succeeded in improving teachers' ability to use educational technology. The educators are now more proficient in using Canva applications and AI technology to improve the teaching and learning process through various trainings and mentoring. The following is information on the validation of evaluation instruments for PkM activities:



**Figure 5. Graphical Output of Instrument Evaluation Indicators of PkM Activities**

To ensure that research instruments are able to measure what they are intended to measure in a consistent manner, it is important to assess the validity and reliability of the constructs used. The evaluation results showing that most of the constructs did not meet the validity and reliability criteria indicate that there were problems with the design of the instrument or with the selection or development of the constructs. However, the R-square values of the regression tests for the indicators of platform access, real action, platform features, and independent curriculum understanding yielded quite different values, 0.447, 0.270, 0.449, and 0.190, respectively. Higher R-square values indicate that the model explains the variability of the data better than its independent variables (Indayanti & Malik, 2023).

According to the values of 0.447 and 0.449 for platform access and platform features, the model used in the study can explain almost 45% of the variability in the results associated with these indicators. This is a pretty good indication that the model has significant predictive power for these elements of the instrument. In the context of this study, this could mean that the variables incorporated into the research model adequately explain respondents' understanding of access to the platform and its features. In contrast, the R-square values for concrete action and understanding of the independent curriculum were lower, at 0.270 and 0.190 respectively. This suggests that the model was not able to explain the variability of outcomes relating to the implementation of concrete action and understanding of the independent curriculum well. This could indicate that the constructs used to measure these variables may not be fully valid or

credible, or that there are additional variables not included in the model that impact on the outcomes in these two areas.

The results show that the research instruments need to be revised to improve validity and reliability, especially for constructs with low R-square values. Improving the quality and reliability of research results can be achieved by adding or changing the variables used in the model, as well as reviewing the measurement methods of the constructs. In addition, this analysis emphasizes how important it is to understand how the variables in the study interact with each other to create a more efficient instrument. (Azzajjad et al., 2024; Thuruthel & Tungol, 2021).



**Figure 6: Results of Identifying Teachers' Ability Level Before and After Training**

The results of the research conducted on the training program at SD Inpres 3 Talise show that teachers have become better at using Canva and AI applications as learning tools. Before the training, only 6 teachers had mastered the use of Canva and AI, and the other 17 did not know how to use either. The training that focused on introducing and utilizing Canva and AI resulted in considerable improvement. There are now 21 teachers who can use Canva in real classrooms. However, there are only 2 teachers who are not yet fully proficient in using both technologies as learning tools. These changes indicate that the training was successful and that some participants needed additional mentoring.

**Table 1. Results of Evaluation of Teachers' ICT Mastery Level**

Mastery Level	ICT Mastery Before Training (%)		ICT Mastery After Training (%)	
	Canva	Artificial Intelligence	Canva	Artificial Intelligence
Very good	8.69	4.35	65.22	52.17
Good	17.39	17.39	26.09	39.13
Good enough	0	8.69	8.69	8.69
Less Good	73.91	69.57	0	0

The evaluation results of the ICT training at SD Inpres 3 Talise showed that teachers were more proficient in using Canva application and artificial intelligence (AI) technology. However, the pre-training evaluation showed that most teachers did not have sufficient skills in using these technologies. Specifically, 73.91% of teachers did not master the Canva app and 69.57%



had a low level of AI mastery. In response, a series of trainings were created and implemented to help teachers become better at integrating educational technology into their teaching. The training included theoretical sessions that provided a general understanding of digital tools and how best to use them in the classroom, as well as practical sessions that allowed teachers to apply their new knowledge in control situations.

After the training, evaluations showed better mastery of technology. Data shows that 91.31% of teachers now have abilities classified as excellent or good in using Canva, and a similar figure for AI mastery. This progress suggests that training programs designed to address specific technology skills are effective, and that teachers are motivated and ready to adapt new tools to improve their learning. This increase in proficiency has several significant consequences. First, with a better ability to use tools such as Canva and AI, teachers can create more interactive and engaging subject matter, which can increase student engagement and improve student understanding of the subject matter. Second, effective use of technology allows teachers to customize teaching materials to meet students' unique learning needs, which is a key principle of Merdeka Curriculum.

In addition, the utilization of big data in education can be achieved through technological capabilities such as AI. This can enable more accurate and timely assessment of student progress and better plan interventions to help students who may be falling behind. By using Canva, teachers can convey complex information in an easy-to-understand visual format, which can improve retention and understanding. The success of this training also demonstrates the importance of ongoing training and professional development for teachers in the digital age. Investing in educator capacity building not only improves the quality of classroom learning but also prepares educational institutions to be more responsive to future changes and challenges. Overall, the improvement in teachers' ability to use technology at SD Inpres 3 Talise shows great progress in the transformation of digital education at the school. It shows a major shift in the way of teaching, moving away from the traditional approach to a more modern, technology-based approach that suits the needs of the 21st century.

## **CONCLUSION**

The results of the Community Service activities at SD Inpres 3 Talise show that teachers have made great progress in their understanding and use of information and communication technology (ICT). Through structured and focused training, this activity has successfully improved teachers' ability to incorporate technology into lesson plans and to use digital media and learning management systems to manage the classroom more efficiently. Many teachers said they were unsure of technology before the course, indicating limitations in using ICT tools in the learning process. However, surveys conducted after the training showed that more than 80 percent of teachers felt more comfortable and proficient with current technology. In addition, they felt more capable of integrating these technological solutions into the curriculum and daily teaching. The trainings also helped teachers improve their technical skills when using digital tools. They also help them run and utilize learning management systems well. This is an important component of an independent curriculum as it allows them to better monitor and evaluate students' learning progress as well as customize learning resources to

meet students' individual needs. Teachers' responses after the training indicate that they have greater confidence in incorporating technology as an important part of their teaching methods. The skills acquired through this training not only help improve teaching effectiveness, but also help them prepare to meet the demands of education in the digital era. Overall, the PkM activities at SD Inpres 3 Talise have demonstrated how important it is for educators to invest in improving their ICT capabilities. The training program has played an important role in providing teachers with the ability to deliver effective teaching that is relevant to the needs of modern education. This underscores how important it is to continue to support and strengthen educators with digital skills to ensure classroom learning can continue to change and keep up with technological advancements.

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