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Teacher Empowerment Through Digital Learning Media Training in Outlying Schools

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Abstract

This research is motivated by the low ability of teachers in remote schools to utilize digital learning media, which impacts the less than optimal teaching and learning process in the era of technological transformation. The purpose of this study is to empower teachers through systematically designed digital learning media training so that they are able to design, develop, and implement more interactive and effective learning media. The study used a qualitative approach with observation, interview, and documentation techniques to explore the experiences, competency changes, and responses of teachers after participating in the training. The results showed that the training was able to improve teachers' digital literacy, expand their abilities in using learning applications, and encourage the creation of more creative and relevant teaching practices to the needs of students in remote schools.

Keywords: *teacher empowerment, digital learning media, suburban schools.*

INTRODUCTION

Background Of The Study

The development of digital technology over the past two decades has brought significant changes to the world of education (Ar, Aini, and Hidayatillah 2024). Digital transformation not only impacts communication patterns and social interactions but also demands updates to learning methods in schools. The use of digital learning media—such as instructional videos, interactive applications, Learning Management Systems (LMS), and online-based evaluation platforms—has become the new standard for improving the effectiveness and quality of the teaching and learning process. However, this development has not been fully felt evenly,



especially by schools in remote areas. Limited access, lack of facilities, and teachers' limited capacity to utilize technology pose major challenges to realizing learning that is adaptive to the digital era (Resmini, Satriani, and Rafi 2021).

Schools in rural areas generally face various structural issues that impact educational quality. Their geographical distance from urban centers severely limits access to information, training facilities, and technology. Furthermore, many teachers in rural schools still use traditional teaching methods centered on lectures and conventional delivery (Tinggi 2022). This unpreparedness is not solely due to low motivation, but is more likely due to a lack of opportunities for relevant training, minimal policy support, and limited facilities such as laptops, stable internet connections, and other supporting multimedia devices. Consequently, a gap in learning quality exists between schools in urban areas and those in rural areas (Ramadhani et al. 2021).

The demands of the current national curriculum encourage teachers to be more creative, innovative, and adaptive in presenting learning. The Independent Curriculum, for example, places technology as a crucial element in creating differentiated and student-centered learning. Teachers are required to develop interactive teaching materials, utilize digital learning platforms, and conduct technology-based evaluations. Without adequate training, teachers in remote schools will struggle to implement this curriculum optimally. Consequently, the curriculum's goal of developing creative, critical, and adaptable students will be difficult to achieve (Pande, Putra, and ... 2023).

Teacher empowerment through digital learning media training also has a direct impact on improving the quality of student learning outcomes (Ramdani, Jufri, and ... 2021). The use of digital media can increase learning motivation, facilitate understanding of abstract concepts, and encourage student engagement through more engaging and interactive learning activities. For schools in rural areas that often experience limited physical learning resources, digital media can be an alternative solution to enrich learning materials. Teachers skilled in using technology will be able to develop more creative, relevant, and contextual learning that is tailored to student needs and regional characteristics (Anjani, Novianti, and Wear 2021).

From an empowerment perspective, digital learning media training not only improves teachers' technical skills but also strengthens their professional capacity, self-confidence, and willingness to innovate. Teachers who feel empowered are more motivated to develop themselves, take initiative, and deliver more meaningful learning. Teacher empowerment is also



linked to increased professional status and recognition of their role as agents of change in schools. When teachers possess adequate digital skills, they can become key drivers of educational transformation, particularly in remote areas that are in dire need of innovation and accelerated quality of education services (Raibowo, Ilahi, and ... 2024).

Furthermore, digital training for teachers can foster a collaborative ecosystem in rural schools. Teachers can share best practices, develop learning communities, and collaborate on creating relevant learning content. This collaboration is crucial given the shortage of highly qualified educators in many rural schools. With ongoing training and support, teachers can collectively improve their digital competencies and ensure that the use of learning media is not just a one-off activity but is consistently integrated into teaching and learning activities (Risnasari et al. 2024).

Ultimately, the importance of teacher empowerment through digital learning media training in rural schools is rooted in the need to achieve educational equity. The digitalization of education should not be the sole privilege of urban schools. All students, regardless of location, have the same right to receive quality education (Purwaningrum and Ahyani 2021). Through planned, structured training supported by adequate facilities and policies, teachers in rural schools can improve their professional competencies and provide learning that is relevant to current demands. This way, the digital transformation in education can be more equitable, inclusive, and sustainable (Robby et al. 2022).

Research Gap

Advances in educational technology have encouraged schools to integrate digital learning media as part of the teaching and learning process. Previous studies have shown that digital media training can improve teachers' pedagogical competence and creativity in designing engaging lessons. However, most of these studies have focused on urban schools or schools with adequate technological facilities. This situation creates a gap in research because schools in rural areas, which often have limited technological resources, are rarely the subject of in-depth research (Angraini and Azhari 2023).

On the other hand, research on teacher empowerment in marginalized areas generally emphasizes managerial and motivational aspects, rather than strengthening digital competencies. Yet, teachers in marginalized schools face dual challenges: limited facilities and limited access to technology training. Existing research has not explored how digital learning media training can



be tailored to the context of limited infrastructure and the specific needs of teachers in these areas. This indicates a gap between field needs and the focus of previous research.

Thus, there is a significant research gap to be filled: examining digital learning media training models that not only enhance teachers' technical skills but also empower them to creatively adapt technology to local conditions. New studies are needed to understand effective empowerment strategies, relevant training formats, and their impact on learning quality in rural schools. This research can significantly contribute to the development of more equitable and inclusive education policies.

Rationale Of The Study

Schools in rural areas generally face limited facilities, access to technology, and opportunities for teacher competency development. This situation results in the learning process remaining conventional, lacking variety, and failing to stimulate students' critical thinking and creativity. Amidst the development of 21st-century education, which demands mastery of digital literacy, the gap in teacher competency in rural schools is a crucial issue that requires attention. Therefore, teacher empowerment is a strategic necessity for sustainably improving the quality of learning (Khairunnisa and Ritonga 2023). Digital learning media training presents an effective approach to enhancing teacher capacity. Digital media can help teachers present material in a more engaging, interactive, and contextual manner, thereby increasing student learning motivation. However, in reality, many teachers in rural areas lack the skills to use digital devices and platforms due to a lack of systematic and ongoing training. This research arises from the urgency to bridge this gap through a training program tailored to the needs, characteristics of rural schools, and teachers' initial competencies. This study is crucial because teacher empowerment focuses not only on improving technical skills but also on strengthening self-confidence, independence, and innovative abilities in designing learning (Tapo 2019). By providing digital learning media training, schools in rural areas have the potential to improve the quality of education and expand equitable access to learning. This research is expected to provide a model for applicable, sustainable training interventions, and serve as a reference for schools and policymakers in developing teacher capacity in areas with limited access to technology.

Literature Review



Digital learning media training has become one of the most effective strategies for improving teacher capacity, particularly in rural schools that often face limitations in facilities, access to information, and professional development. Various studies have shown that teacher competence in utilizing educational technology is closely related to the quality of the learning process and student engagement (Huda and Wikarya 2024). With structured training, teachers are able to understand the functions of various digital platforms, such as Learning Management Systems (LMS), interactive presentation applications, educational videos, and online quiz applications (Ramadhani et al. 2021). The literature also confirms that improving teachers' digital literacy significantly impacts classroom learning innovation.

In the context of rural schools, digital media training not only serves to improve teachers' technical skills but also serves as a means of professional and social empowerment. Recent research confirms that teachers in these areas often experience a technological gap compared to schools in urban areas, making training a bridge to increase their confidence and motivation in classroom management (Pande et al. 2023). Furthermore, digital training enables teachers to develop more contextual, creative, and interactive teaching materials, even in areas with minimal infrastructure. This aligns with the concept of empowerment, which strengthens individuals' ability to take control of their own learning practices and innovations.

Furthermore, literature shows that the effectiveness of teacher empowerment through digital learning media training is greatly influenced by program sustainability, school institutional support, and the availability of basic facilities such as internet access. One-off training without follow-up support often has no significant impact. Therefore, research emphasizes the importance of a continuous training model, based on teacher needs, and involving professional learning communities. In rural schools, collaborative approaches such as peer mentoring, teacher working groups, and distance learning have been shown to strengthen the effectiveness of digital training. Therefore, teacher empowerment through digital media training is not only an effort to improve technological skills but also to build an adaptive learning culture in rural schools.

Novelty Of The Study

The novelty of this study lies in its focus on empowering teachers in rural schools through digital learning media training designed based on local needs. Unlike previous research, which generally only addresses general teacher competency improvement, this study offers a specific approach that combines digital needs mapping with the socio-cultural characteristics of rural



schools. Thus, the training provided is more contextual, applicable, and relevant to the limited infrastructure that is characteristic of rural schools.

Another novelty lies in the training model, which emphasizes not only the technical aspects of digital media use but also the integration of practical digital pedagogy that can be directly applied in the learning process. This research develops a step-by-step training model—starting from digital orientation, media practice, and intensive mentoring—which has previously been rarely used in studies of teacher competency development in remote areas. This model transforms teachers into not just digital media users but also learning innovators capable of modifying and creating media to suit students' needs.

Furthermore, this study presents a novel approach through evaluating the impact of ongoing teacher empowerment using the teacher digital autonomy indicator. This indicator measures the extent to which teachers are able to independently design, implement, and evaluate digital learning media after participating in training. This evaluative approach is rarely used in similar research, making this study a novel contribution to both the academic and practical domains of teacher competency development, particularly in the context of rural schools that require more inclusive and sustainable educational interventions.

Purposes/Hypothesis Of The Study

Teacher empowerment through digital learning media training in rural schools aims to improve teachers' pedagogical and professional competencies in addressing developments in educational technology. Teachers in rural areas often face limited access, making this training a strategic tool for expanding their knowledge of various digital tools and platforms that can be used in the teaching and learning process. With this enhanced competency, teachers are able to design more creative, interactive, and relevant learning experiences that meet the needs of students in the digital age.

Furthermore, digital learning media training aims to strengthen teachers' confidence in optimally utilizing technological devices. Many teachers in remote schools remain hesitant or unfamiliar with using technology due to a lack of support. Through systematic training, teachers are given the opportunity to practice using applications, software, and digital media directly, thereby developing their familiarity and confidence in implementing learning innovations in the classroom. This confidence is crucial for teachers to fulfill their role as facilitators of modern learning.



Another goal is to create a more effective, adaptive, and inclusive learning ecosystem for students in remote schools. By utilizing digital media, learning can become more accessible, varied, and engaging, thereby increasing student motivation. Furthermore, teacher empowerment through digital training is also expected to reduce the educational quality gap between remote and urban schools. Ultimately, digitally empowered teachers can act as agents of change, driving educational transformation in their regions.

METHODS

Research Design

The research design used in this study was a descriptive qualitative approach aimed at understanding in-depth the process of teacher empowerment through digital learning media training in rural schools. Qualitative research was chosen because it could explore subjective experiences, training dynamics, and the socio-cultural context of rural schools, which often have limited facilities and access to technology. This approach enabled researchers to obtain a comprehensive picture of teachers' abilities, motivations, and challenges before and after participating in the training (Ramdani et al. 2021).

Data collection was conducted using participatory observation, in-depth interviews, and documentation techniques, allowing researchers to capture the empowerment process in a natural and authentic way. Observations were used to assess interactions during training, teachers' skills in operating digital media, and changes in teaching behavior. Meanwhile, in-depth interviews provided a space for teachers to express their experiences, hopes, and obstacles in adopting digital technology. Documentation—such as training modules, photos of activities, and teachers' work—was used as supporting data to strengthen the research findings (Raibowo et al. 2024).

Data analysis was conducted using the Miles & Huberman model, which includes data reduction, data presentation, and conclusion drawing. Each finding was analyzed thematically to identify patterns, competency changes, and factors influencing training effectiveness. Data validity was maintained through triangulation of sources and methods, ensuring that the research results are accountable and truly reflect the conditions of teacher empowerment in remote schools. This research design is expected to provide a holistic understanding of how digital learning media training can improve teacher competency while strengthening the quality of learning in remote areas.



Research Target/Subject

The research target of the Teacher Empowerment Through Digital Learning Media Training in Outlying Schools program is aimed at improving teachers' professional capacity in mastering educational technology in a practical and applicable manner. This research aims to improve teachers' competency in designing, developing, and using digital learning media appropriate to the context of outlying schools, including limited infrastructure and diverse student characteristics. Through structured training interventions, this research seeks to ensure that teachers are able to effectively integrate technology into daily learning.

In addition to improving technical skills, this research also targets changes in teachers' attitudes and confidence in utilizing technology as a pedagogical tool. Teachers in rural schools often face barriers such as limited digital access, minimal experience using digital media, and limited exposure to innovative learning models. Therefore, this research focuses on ensuring improvements in teachers' digital literacy and professional readiness so they can develop more engaging, interactive, and relevant learning experiences that meet students' needs.

The next research goal is to develop a digital learning media training model that is adaptive, sustainable, and replicable in other rural schools. This model will not only strengthen technical aspects but also consider school managerial support, the availability of simple facilities, and ongoing post-training mentoring strategies. Thus, this research is expected to make a tangible contribution to improving the quality of learning in rural schools by empowering teachers as the spearheads of digital education transformation.

Research Procedure

The research procedure in this study began with a preliminary study to identify teachers' needs, challenges, and initial capabilities in utilizing digital learning media in remote schools. Researchers conducted initial observations of technology infrastructure, interviews with principals and teachers, and analyzed the curriculum and teacher workload. This information was used to map the actual conditions, determine the most relevant training focus, and develop digital training modules tailored to the limited context of remote schools.

The next stage was design and implementation, namely designing a digital learning media training program that was applicable and easily adapted. The training was designed to include an



introduction to simple digital platforms, the creation of technology-based teaching materials, and practical use of digital media in classroom learning scenarios. After the program design was finalized, researchers conducted training for teachers in several sessions, both face-to-face and through blended learning, adapting to available infrastructure. During the training, researchers provided direct guidance, provided demonstrations, and facilitated teachers in trying out digital media in their respective lesson plans.

The final stage is evaluation and reflection. Researchers assessed the effectiveness of the training using observation sheets, teacher perception questionnaires, and analysis of digital media products produced by participants. The evaluation was conducted to assess the extent of teacher competency improvement, identified challenges, and changes in teaching practices following the training. Furthermore, researchers held reflection sessions with teachers to explore the training's impact on their motivation, creativity, and confidence in utilizing technology. The evaluation results then served as the basis for developing recommendations for the sustainable development of teacher empowerment programs in remote schools.

RESULTS AND DISCUSSION

Research Results

Improving Teachers' Digital Competence in Outlying Schools

Research on improving teachers' digital competencies in remote schools shows that the initial conditions of education in these areas still face various challenges, both in terms of infrastructure and human resource readiness. The schools studied are located in areas with limited transportation access and relatively low socioeconomic conditions. Technological facilities such as computers, internet connections, LCD projectors, and other digital learning support devices are not yet widely available. However, teachers' enthusiasm and motivation to improve their digital competencies are relatively high. Many teachers learn technology independently through online tutorials or with the help of colleagues, even though their initial skills are still at a very basic level. Before the digital competency improvement program was implemented, most teachers only mastered basic computer skills such as typing, creating simple presentations, and using an internet browser. When faced with using learning platforms like Google Classroom, school LMSs, or digital report card apps, many teachers struggled. They preferred using WhatsApp to send assignments or communicate with students. Furthermore, their skills in creating creative learning media such as videos, infographics, or digital modules were still very limited. This situation

resulted in classroom learning tending to be conventional and less interactive, thus failing to meet the demands of 21st-century learning.

The digital competency improvement program in this study was implemented through a series of structured training sessions and intensive mentoring. The training covered basic mastery of technological devices, creating digital learning media, utilizing e-learning platforms, and practicing teaching using technology. For two months, teachers attended workshops twice a week. Attendance was very high, reaching over 90 percent, indicating that they felt the training was important and relevant to their needs. During the training, teachers had the opportunity to practice directly using applications such as Google Workspace, Canva, interactive PowerPoint, Quizizz, and basic video editing techniques using smartphones.



The research results showed a significant increase in teachers' digital competency after participating in the training. The majority of teachers were able to operate laptops more effectively, including managing documents, uploading files to cloud storage, and utilizing advanced features in presentation applications. They also became accustomed to using Google Classroom as a medium for managing learning materials, assigning assignments, assessing student work, and interacting online. Teachers who previously struggled were now able to create simple learning videos, design digital modules, and create more engaging visual media. These improvements impacted classroom learning patterns. Students appeared more enthusiastic because the media teachers used was more varied and enjoyable.

Interviews with teachers revealed that the training had a significant impact on their skills and confidence. An Indonesian language teacher revealed that before the training, she could only create simple slides, but now she can create learning videos and manage online classes. A science teacher stated that the biggest obstacle was the internet connection, but the mentoring enabled them to continue learning through applications that can be used offline. The principal also stated that the changes were very visible, with even senior teachers who initially lacked confidence in

using technology now daring to try various learning applications. Meanwhile, a ninth-grade student stated that the use of digital media made learning more interesting and less boring. He said that the process of submitting assignments was made easier because it could be done through Google Classroom.

On the other hand, the study also found supporting and inhibiting factors in the implementation of the digital competency improvement program. The main supporting factors were high teacher motivation and the support of the principal, who provided time and opportunities for teachers to participate in training. Collaboration between teachers was also a strength, as they helped each other understand new technologies. The dominant inhibiting factors included limited internet access, a lack of technological devices, and the persistence of senior teachers who needed more time to adapt to digital technology.

Overall, this study shows that improving teachers' digital competency in rural schools can be effectively achieved through structured training, ongoing mentoring, and a supportive school environment. Despite various obstacles, strong commitment from teachers is a key factor in the program's success. The impact of digital learning is beginning to be felt in the classroom, for both teachers and students. The changes are not only technical but also affect teachers' mindsets, which are increasingly open to using technology as a tool to improve the quality of learning. This study confirms that digitalization of education in rural schools is not impossible, but rather a process that requires the right strategies, adequate facilities, and a shared commitment to providing a better education for students.

Increasing Creativity and Variety of Learning Methods

The research results showed that teacher creativity and the variety of learning methods significantly increased after the pedagogical competency strengthening program was implemented. Prior to the intervention, the teaching and learning process tended to be conventional, dominated by lectures, and minimal use of innovative learning media. However, after mentoring, training, and evaluation, teachers began to demonstrate their ability to design more creative, engaging, and student-centered learning.

This increase in creativity is evident in several indicators. First, teachers are able to develop more varied lesson plans by combining discussion, collaborative learning, problem-based learning (PBL), role-playing, and project-based learning (PjBL) methods. Second, the use of learning media is increasingly enriched, ranging from simple visual media, infographics,

flashcards, digital applications, and interactive videos. Third, teachers are able to develop classroom activities that stimulate students' activeness, imagination, and critical thinking skills. Furthermore, the success of increasing creativity is also supported by a change in teachers' perspectives on learning. Previously, some teachers considered creativity difficult to implement due to limited facilities and time. However, after training, they understood that creativity can be realized through simple yet effective approaches. For example, using local case studies, educational games, or group activities based on real-world problems in the local community.

Observations also showed that students responded positively to the changes. Learning activities became more lively, class discussions were more dynamic, and students demonstrated increased interest in learning. This was evident in their active participation in answering questions, expressing ideas, and participating in group activities. Quantitative data from questionnaires showed that 82% of students felt learning was "more enjoyable," and 76% felt "it was easier to understand the material" when the methods used were more varied.



The variety of learning methods has also increased not only in quantity but also in quality. Teachers not only try new methods but are able to adapt them to the characteristics of the material, learning objectives, and student needs. For example, for material requiring an understanding of abstract concepts, teachers use demonstration methods and visual media. Meanwhile, for material requiring analysis, teachers utilize debate techniques and small group discussions. This flexibility in choosing methods is one of the important achievements of this research.

Research also found that the use of technology is a key factor in increasing creativity. As many as 68% of teachers have started using digital tools such as Canva, creative PowerPoint presentations, learning videos, and interactive online quizzes (Quizizz, Kahoot, or Google Forms). This technology adoption not only enriches the learning environment but also increases student motivation by making the learning environment more engaging and interactive.

In terms of classroom management, teachers appear to be better able to manage collaborative learning flows. Classes are no longer teacher-centered but provide more space for student activities. For example, brainstorming, gallery walks, peer teaching, and group presentations are increasingly being implemented. These strategies boost students' confidence and provide opportunities for them to develop communication skills.

Another finding indicates that teachers are increasingly able to reflect on their learning. Before the training, reflections typically consisted of simple evaluations of "it went well" or "it didn't go well." However, after the mentoring, teachers' reflections became more analytical, such as analyzing factors that caused ineffective activities, identifying student obstacles, and designing improvements for the next meeting. This reflective ability is a crucial foundation for sustainable creativity in learning.

Overall, research shows that increasing creativity and variety in learning methods is influenced not only by training but also by a supportive school environment. The role of principals and supervisors is crucial, particularly in providing experimental spaces, simple facilities, and appreciating teacher innovation. A collaborative environment among teachers also plays a crucial role, where they share ideas and best practices in learning.

Improvements in the quality of learning are also evident in students' academic and non-academic achievements. Teachers report improvements in assignment performance, discussion engagement, and collaborative skills. This is reinforced by increasingly creative documentation of student work, including posters, short videos, project reports, and simple products produced through project-based learning.

However, the study also identified several challenges. Some teachers still struggle to manage their time when implementing methods that require more complex preparation. Furthermore, limited facilities such as LCDs, crowded classrooms, and internet access remain obstacles in some schools. Nevertheless, teachers are still able to adapt by utilizing creativity without relying on high technology, for example through paper-based educational games or simple simulations. The results of this study confirm that teacher creativity is not a talent, but a skill that can be trained, honed, and improved. With appropriate guidance, a supportive school environment, and teachers' willingness to continue learning, increased creativity and variety in learning methods can be achieved sustainably. Creative and varied learning has been shown to have a positive impact on student motivation, understanding, and participation, thus making a significant contribution to improving the quality of education in schools.



Positive Impact on Student Participation and Learning Motivation

The research results show that the implementation of educational programs or interventions, whether in the form of innovative learning models, the use of digital media, or project-based approaches, has a significant positive impact on student participation. During classroom observations, students were seen to be more actively involved in discussions, asking questions, and working collaboratively in groups. Activities that were previously passive became more dynamic as students felt they had the space to express their opinions and ideas.

Observational data shows that approximately 78% of students showed increased engagement compared to before the program was implemented. Students were more enthusiastic about responding to teacher questions and were able to maintain focus longer during lessons. This change was also evident in the increasing number of students arriving on time and preparing their own learning materials. Students' emotional and social engagement increased as they found learning more enjoyable, relevant, and provided opportunities for contribution. Furthermore, interactions between teachers and students became warmer and more communicative. Teachers acted more as facilitators, while students took an active role in discovering concepts and solutions for themselves. This learning pattern strengthened students' self-confidence and created an environment that supported them to participate optimally.

This study also found that students' learning motivation significantly increased after the program was implemented. This improvement was seen in two main aspects: intrinsic motivation and extrinsic motivation. Regarding intrinsic motivation, students stated that learning became more engaging and challenging. Relevant learning media, such as videos, simulations, field projects, or educational games, made them more enthusiastic about participating in the learning process. Students felt that the material became easier to understand and more relevant to their daily lives, fostering a natural curiosity.

Meanwhile, in terms of extrinsic motivation, a transparent assessment system, appreciation for work results, and constructive feedback from teachers also strengthen students' motivation to learn. Some students reported being more enthusiastic about completing assignments because they felt valued and cared for. Teachers who provided positive reinforcement such as praise, achievement stars, or recognition of work in front of the class also



increased self-confidence. This change in motivation was reflected in improved assignment grades, commitment to completing group projects, and interest in participating in additional activities such as study clubs or special tutoring. Overall, students demonstrated a greater willingness to learn, both in and outside of class.

This study also demonstrated a positive impact on students' attitudes and learning resilience. After the learning program was implemented, students demonstrated a more positive attitude toward the subject and teachers. They were more willing to ask questions when they didn't understand the material and were more open to criticism. Furthermore, students' ability to overcome learning difficulties improved. They were less likely to give up when faced with difficult problems and were better able to work independently and collaboratively. This was supported by a more conducive classroom atmosphere, where mistakes were seen as part of the learning process, not failure. This made students feel safer to try, experiment, and learn from their experiences. Students also demonstrated better self-discipline, including completing assignments on time and following class rules. This demonstrates an improvement in positive learning behaviors, which are essential for long-term educational success.

Discussion

Digital learning media training for teachers in remote schools is a strategic necessity to improve the quality of education and bridge the gap in technology access between urban and rural schools. Discussions on the results of the activities indicate that this empowerment program not only improves teachers' technical knowledge in using digital devices but also fosters self-confidence, learning motivation, and the ability to innovate in the teaching and learning process. In the context of remote schools that often face limited resources, this training serves as a starting point for transforming the learning culture from conventional methods to more interactive and adaptive 21st-century learning.

First, digital learning media training significantly improved teachers' pedagogical and technological competencies (TPACK). Prior to the training, most teachers still viewed technology as an optional supplementary tool in the teaching and learning process. Limited facilities, minimal prior training, and low digital literacy led teachers to maintain lectures and the use of whiteboards as their primary learning strategies. After the training, teachers began to understand that technology integration not only replaces traditional methods but also enriches the learning process through visualization, interactivity, and personalized student learning. For example,



teachers were able to create interactive PowerPoint-based media, instructional videos, digital quizzes, and online worksheets that further motivated students to engage actively.

Second, the empowerment activities demonstrated that training plays a strategic role in building teacher independence. Initially, many teachers found it difficult to operate basic digital tools such as presentation apps, video applications, or web-based evaluation platforms. After mentoring sessions, teachers became more skilled at creating materials independently without having to wait for technicians or other parties for assistance. This signifies the achievement of the empowerment goal, which is to move teachers from a position of "dependence on facilities and others" to "confident, productive, and creative users." Teachers also reported that the training helped them solve simple technical problems, such as editing images, adjusting sound in videos, or converting files into formats that are easy to use in the classroom.

Third, the discussion revealed that the training had a positive impact on building a culture of collaboration among teachers. In rural schools, collaboration is often limited due to workloads and a lack of professional discussion spaces. Through the training, teachers engaged in group work, shared best practices, and supported each other when facing digital challenges. Activities such as peer teaching, microteaching, and reflective discussions created a collective learning atmosphere that encouraged teachers to continuously develop their competencies. This culture of mutual learning serves as important social capital for the sustainability of learning innovations in schools, especially after the formal training has concluded.

Fourth, in terms of classroom implementation, this training encouraged a transformation in student learning methods. Teachers began adopting project-based learning approaches, videos, digital quizzes, and image- or animation-based discussions. Students became more enthusiastic because the media used were more engaging and relevant to the current generation's digital learning style. Field discussions showed that the use of digital media helped students understand abstract concepts more easily, for example through graphic visualizations, process animations, or simulations. Furthermore, teachers reported that digital media helped overcome student boredom that often occurs with traditional lecture methods. Thus, this training had a dual impact: increasing student engagement and strengthening teachers' capacity as learning facilitators.

Fifth, this training also contributed to a shift in teachers' mindsets and attitudes toward technology. Before the training, some teachers felt that technology was burdensome, complicated, or unsuitable for the conditions of rural schools. However, the systematic and practical training process made teachers realize that technology can be used simply yet effectively. This mindset



shift is a crucial aspect of empowerment, because without mental readiness, any technology will be difficult to adopt sustainably. Teachers began to view technology as a solution, not simply an administrative requirement. This was evident in teachers' initiatives to try new applications, improve the quality of materials, and adopt digital innovations in assessment activities and student projects.

However, discussions also revealed that this training still faces several structural and technical challenges. Limited internet access, uneven computer hardware availability, and a lack of multimedia rooms are significant obstacles in rural schools. Even though teachers are skilled and motivated, limited resources prevent optimal implementation of digital media at all times. Another challenge is the often time-consuming administrative burden on teachers, resulting in irregular digital practices. Therefore, the sustainability of the program needs to be supported by school policies, such as providing minimum infrastructure, regular scheduling for peer learning, and special assignments for teachers who become digital champions.

Furthermore, this training demonstrated the importance of adopting a contextual and sustainable training model. Teachers in rural schools have different characteristics and needs than those in urban schools. Therefore, one-off training is insufficient. A training model based on long-term mentoring, regular coaching, and evaluation of teacher competency development is needed. Coaching and mentoring approaches have proven effective because they provide space for teachers to ask questions, experiment, and consistently develop ideas. In other words, teacher empowerment must be understood not as a one-time activity, but as a continuous process of competency transformation.

It's also important to note that digital learning media training has significant potential to improve educational equality. The disparity in educational quality between the central and peripheral regions has long been a national challenge. Through digital training, teachers in peripheral schools have equal opportunities to develop modern competencies, enabling the quality of learning to approach the standards of urban schools. In the long term, empowering teachers through technology can be a strategy to reduce the learning gap between regions and expand students' access to quality education.

Finally, the discussion revealed that digital learning media training in remote schools had a multidimensional impact: increased competency, changed attitudes, transformed learning methods, collaboration among teachers, and strengthened teacher professionalism. The success of this training demonstrates that investing in teacher capacity building is a key factor in developing



quality education. This training provides evidence that with the right approach, teachers in remote schools are able to adopt technology and innovate in learning despite limitations. This program not only empowers teachers but also fosters a digital learning ecosystem that can be sustainable in the long term.

CONCLUSIONS AND SUGGESTIONS

Conclusions

The implementation of digital learning media training in rural schools demonstrates that teacher empowerment is a strategic step in strengthening the quality of the learning process. Through structured training, teachers gain increased knowledge, skills, and confidence in operating educational technology. This also demonstrates that access to appropriate training can reduce the competency gap between teachers in rural schools and those in urban areas. Furthermore, this training program not only improves technical skills but also stimulates teachers' creativity in designing more engaging and relevant teaching materials. Teachers are beginning to utilize various digital platforms, such as instructional videos, interactive applications, and Learning Management Systems (LMS), making the learning process more varied and responsive to student needs. This improvement has a positive impact on student motivation and classroom effectiveness.

Overall, teacher empowerment through digital learning media training demonstrates that, with appropriate intervention, rural schools can deliver innovative and adaptive learning. Sustainability of the program is key to ensuring the continued development and long-term benefits of digital transformation in rural educational institutions. Therefore, support from the government, educational institutions, and local communities is essential to ensure sustainable and equitable teacher competency development.

Suggestions

Empowering teachers in remote schools requires strategies that not only improve technical competency but also motivate them to be more creative in the learning process. Digital learning media training can be a solution to strengthen their capacity to face the challenges of 21st-century learning. Teachers need to be introduced to a variety of simple yet effective applications, such as Canva, interactive PowerPoint, Google Classroom, and Quizizz, so they can gradually utilize technology without obstacles. In addition to technical training, ongoing mentoring is needed to

ensure teachers not only understand the use of digital media but also integrate it into their daily teaching practices. This mentoring can be provided through teacher learning communities, peer teaching, and monitoring by the training team. With consistent mentoring, teachers in remote schools will gain greater confidence to experiment and create digital teaching materials relevant to their students' characteristics.

For training programs to be more impactful, schools and stakeholders need to provide supporting infrastructure such as adequate internet access, laptops or tablets, and incentives for teachers who actively innovate. Collaboration with universities and training institutions can also enrich teachers' knowledge by sharing best practices and the latest digital learning models. With the support of a conducive school structure and culture, teacher empowerment through digital media training will improve the quality of learning while strengthening the position of rural schools in the face of modern educational competition.

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