Improving Teacher Competence Through Digital-Based Learning Innovation Workshop at MAS Tarbiyah Islamiyah Hamparan Perak, Deli Serdang Regency

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Abstract: This community service aims to improve teacher competence in integrating digital technology in the learning process at MAS Tarbiyah Islamiyah Hamparan Perak, Deli Serdang Regency. Activities are carried out through a workshop method that focuses on digital-based learning innovations, including the use of digital platforms, interactive media, and effective modern learning strategies. The activity participants consisted of MAS Tarbiyah Islamiyah teachers who have been facing various obstacles in implementing digital learning optimally. The results of the service showed that the workshop succeeded in increasing teachers' understanding and skills in applying various digital tools and platforms in learning. In addition, the teachers also showed high enthusiasm and motivation to continue developing learning innovations. This activity is expected to improve the quality of learning and support the creation of a more interactive and enjoyable learning environment for students.

Keywords: Digital Learning, Education Technology, Learning Innovation, Teacher Competence, Workshop.

Introduction

Educational transformation in the 21st century demands fundamental changes in teaching and learning paradigms (Yuliawati et al., 2025). Advances in information technology have opened up new avenues in the development of learning strategies, enabling teachers and students to interact more dynamically, flexibly, and personally. On the other hand, global challenges such as technological disruption, pandemics, and changes in student characteristics are factors that reinforce the urgency of implementing digital-based learning. Mastery of technological devices is no longer an additional advantage but has become a basic need that every educator must possess in the current era (Haryono & Safitri, 2025).

The reality on the ground shows a gap between education policies that promote digitalization and the

actual ability of teachers to implement them (Ekowati et al., 2024). Many teachers, especially those who teach in suburban areas or in educational institutions that are not optimally equipped, still experience difficulties in utilizing technology as part of the learning process. This is closely related to the lack of structured training, limited access to adequate digital devices, and the absence of a digital literacy culture in the school environment (Tumiran et al., 2022).

Teachers play a strategic role as the spearhead in the learning process. Mastery of technology and the ability to innovate are fundamental competencies that must be possessed to face the challenges of modern education (Fauzan et al., 2024). The reality on the ground shows that not all educators are ready to adapt to this change. In many educational institutions, especially those located in peripheral areas or with limited access to continuous training, conventional teaching methods

still prevail. This impacts limitations in creating learning that is appropriate for the characteristics of today's digital generation (Rahmadi et al., 2021).

MAS Tarbiyah Islamiyah Hamparan Perak, Deli Serdang Regency, is one of the educational institutions committed to strengthening Islamic values through the educational process. Based on the results of observations and communication with school staff, it was found that the majority of teachers do not yet have adequate competence in using digital technology for learning. Many teachers still feel insecure and are not yet accustomed to using digital applications or platforms as learning media, even though the potential of technology is enormous for increasing the effectiveness of the teaching and learning process (Manshuruddin, Tumiran, & Yunan, 2021).

This condition indicates a real need to improve teacher capacity, particularly in the use of technology. The training program, in the form of a digital learning innovation workshop, is a strategic solution that can have a direct impact on improving teacher competence. The training material is focused on the use of easily accessible and practical digital tools and applications in learning activities. The hope is that teachers will not only be able to operate technology but also develop creativity and innovation in the classroom learning process (Manshuruddin, Tumiran, Yunan, et al., 2021).

This service activity is designed as a contribution from academics to support digital-based educational transformation at the madrasah level. The workshop implementation is designed based on real needs in the field, with a participatory approach to ensure teachers can actively engage in the training process. Besides being a means of skill development, this activity also opens up space for collaboration between the academic world and secondary education institutions to create an adaptive and sustainable education ecosystem (Nofianti & Sumarno, 2023).

Improving the quality of education is not only determined by facilities and infrastructure but also by the readiness of human resources to face change. Teachers who are competent in technology will be better prepared to deliver relevant, engaging, and meaningful learning experiences for students. Through this activity, it is hoped that a new spirit will be formed within the teachers to continue learning, developing, and innovating in order to achieve quality education in Deli Serdang Regency (Nofianti et al., 2021).

Referring to the main problem faced by partners, particularly regarding teachers' low mastery of technology use in the learning process, it can be concluded that there is an urgent need for capacity building in terms of digital integration in the classroom environment. This condition serves as an important background that highlights the need for intervention through practical training or mentoring activities that are tailored to the real context and needs of teachers in the field.

Method

The implementation of this service activity uses a participatory approach with a workshop-based training method. This approach was chosen because it places teachers as active subjects in the process of improving their competence. Each stage of the activity is designed to directly engage participants, not just as recipients of information, but also as practitioners who develop their skills through reflective and collaborative learning experiences. In this case, the experiential learning model serves as the main foundation, where participants gain new knowledge through direct practice, discussions, and case studies relevant to their daily learning context.

Before the activity was carried out, a needs identification stage was conducted through field observations and informal interviews with the school principal and several teachers at MAS Tarbiyah Islamiyah Hamparan Perak. The aim is to understand the real conditions related to teachers' digital competence, the challenges they face, and their expectations for the activities to be carried out. The results of this identification serve as the basis for designing the materials, training strategies, and media used during the workshop to ensure they truly meet the needs and abilities of the participants.

The workshop was held in person at the school premises, using interactive lectures, demonstrations, application usage simulations, and hands-on practice. The material provided covers an introduction to digital learning platforms, the creation of technology-based teaching media, innovative learning strategies, and digital learning evaluation. Participants were also given the opportunity to design simple digital learning projects that they could immediately implement in their respective classrooms. The facilitators from the service team acted as both companions and resource persons, providing examples and guidance both technically and pedagogically.

The activities were evaluated both formatively and summative. Formative evaluation was conducted throughout the training process by observing participant engagement, responses to the material, and the results of the practical exercises. Summative evaluation, on the other hand, was carried out at the end of the activities through group reflection, distribution of feedback questionnaires, and assessment of the digital projects created by each teacher. This evaluation aims to measure the extent to which the activities were able to improve participants' understanding and skills and to

identify areas that still need to be developed in further training.

The entire process of documenting activities is carried out systematically, from pre-activity to during the activity to post-activity. This documentation includes discussion minutes, photos, videos, and participants' work, which will then be analyzed to serve as the basis for report preparation and the development of similar activities in the future. This approach is expected to provide a comprehensive overview of the effectiveness of training methods in improving teachers' digital competencies, while also opening up space for sustainable collaboration between schools and universities in order to improve the quality of education.

Result and Discussion

The results of this community service program demonstrate the enthusiasm and active participation of all teachers at MAS Tarbiyah Islamiyah in Hamparan Perak District, Deli Serdang Regency. This activity will be held on August 1, 2024, and will be attended by all teaching staff, including general subject teachers such as physical education, English, and Islamic religious education, as well as structural officials such as homeroom teachers, the head of Madrasah, the vice head of Madrasah for curriculum, and the vice head of Madrasah for student affairs. The complete presence of all these elements is a strong indicator that the school administration has a high commitment to developing teacher competence, particularly in the use of technology in the learning process.

This activity is a realization of the teacher workshop program with the theme "Digitalization-Based Learning Innovation," which is designed to enhance teachers' understanding and skills in integrating digital technology into the teaching and learning process. Before the workshop began, interviews were conducted with several teachers to gauge their understanding of the concept of digital learning innovation. This process helps the implementing team determine the direction and themes of training that are appropriate for the real needs of teachers, students, and stakeholders in the madrasah environment. The interview also served as the basis for designing a more targeted and practical training approach.

Additionally, this activity also motivates teachers to be more open to change and ready to adapt to technological developments. The speaker emphasized the importance of innovation in digital learning, not only as a response to the demands of the times, but also as a means of creating learning that is more interactive, engaging, and meaningful for students. This encouragement is expected to motivate teachers to start implementing digital methods in classroom learning activities.

Figure 1. Material Presentation by the Speaker

During the core stage of the workshop, teachers were provided with theoretical material followed by hands-on practice in the form of training on using digital platforms, particularly Google Classroom. In this session, participants were introduced to the basic features of Google Classroom, such as creating virtual classes, managing assignments and teaching materials, and communicating with students online. The training process is conducted interactively with direct guidance from the presenter, so teachers not only understand the concepts but are also able to practice them independently.

The implementation of the workshop activities, which combined lecture and practical methods, provided ample opportunity for teachers to express their opinions, experiences, and current needs regarding digital-based learning innovation. The material presented by the speaker was well-received, clearly understood, and fully absorbed by the participants. This success was supported by the use of various learning approaches and visual aids such as projectors and laptops. The teacher showed a high level of seriousness and focus throughout the session. This creates a conducive and interactive learning environment, enabling effective, efficient, and meaningful two-way communication. Learning activities become informative, persuasive, argumentative, descriptive, reactive, and narrative in their execution.

Figure 2. Discussion and Q&A session during the workshop process

The discussion and Q&A session is an important part of the workshop process. The teachers as participants showed a positive response by asking relevant questions about the implementation of digital learning innovations. These questions were answered clearly by the presenter, thus increasing the participants' understanding and broadening their insights into applying technology in the classroom. Through this session, there was an exchange of ideas and experiences that strengthened teachers' motivation to start implementing technology in their daily teaching activities.

Observation results show an increase in teachers' understanding and skills related to the concepts and practices of digital-based learning innovation. Teachers are beginning to be able to apply technology concretely in the classroom learning process. This change is not only evident in the use of digital devices but also in the form of innovative teaching methods, such as the implementation of cutting-edge science and technology-based learning models. The classroom atmosphere became more conducive and comfortable, with increased student engagement in learning. As a result, students gained a more meaningful learning experience, encompassing affective, cognitive, and psychomotor aspects.

The teachers' reception of the material presented in the workshop was very positive. They stated that the information and skills acquired can serve as a guide in the implementation of digital learning in madrasas. The material presented covers various innovative approaches and strategies, including:

First, technology-based learning approaches, such as e-learning and blended learning, allow teachers to combine online and face-to-face instruction to provide flexibility and convenience for students. Additionally, teachers are becoming accustomed to using educational applications and software such as Google Classroom, Quizizz, and Google Forms in the teaching process, task management, and learning evaluation. In some cases, teachers are also introduced to immersive learning technologies such as augmented reality (AR) and virtual reality (VR) to enrich material visualization, especially in subjects that are abstract or require contextual experience.

Second, active learning strategies such as project-based learning, problem-based learning, and flipped classrooms are implemented as approaches that foster creativity, collaboration, and critical thinking skills in students. Teachers are encouraged to design project- and problem-based learning activities that are relevant to real life and to utilize technology to support independent learning processes at home.

Third, the concept of personalized learning is introduced to tailor materials and methods to the individual needs and learning styles of each student. Through adaptive learning and differentiated instruction, teachers are beginning to understand the importance of a flexible and responsive approach to the diversity of students in the classroom.

Fourth, inclusion and accessibility aspects are also considered in the development of digital learning. Teachers are encouraged to create a learning environment that is welcoming to all students, including those with special needs. The use of technology such as screen readers, sign language software, and other learning aids is beginning to be introduced as part of a commitment to fair and inclusive education.

Fifth, the development of 21st-century skills such as collaboration, communication, critical thinking, and media literacy becomes an integral part of the training materials. Teachers are guided to integrate activities that encourage students to think creatively and become proficient in filtering and using information wisely.

Sixth, the evaluation and assessment approach is also undergoing transformation. Teachers are starting to implement project-based authentic assessment, formative assessment, and student self-reflection. This aims to provide a complete picture of students' learning progress and support continuous learning.

There are a number of operational parameters that are of primary concern. Technology infrastructure such as hardware (computers, laptops, and mobile devices) has begun to be utilized optimally by teachers and students. The use of e-books, digital text materials, and learning videos has become an important medium in supporting more flexible and engaging knowledge transfer.

Digital curriculum development is a long-term focus in learning transformation. Teachers are starting to create digital-based materials and directly integrate technology into their lesson plans (RPP). This is the initial step toward a more dynamic curriculum that meets the needs of the 21st century (Adib, 2022).

One visible success is the implementation of a Learning Management System (LMS), particularly through the Google Classroom platform. Teachers utilize the LMS to upload materials, assign tasks, organize class discussions, and conduct digital evaluations. LMS also facilitates teacher-student interaction outside of class hours through discussion forums or online consultation sessions. Managing exams, quizzes, and assessments becomes more systematic through automated grading features and flexible exam time settings (Gojali, 2010).

Thus, this training not only enhances teachers' digital competencies but also fosters a new mindset that is adaptable to technological advancements. The results of this service provide an overview that digital learning transformation in madrasas is not only possible but also

has high potential for sustainable development, as long as it receives consistent support from all parties involved.

Conclusion

The community service activity, conducted in the form of a digital-based learning innovation workshop at MAS Tarbiyah Islamiyah Hamparan Perak, Deli Serdang Regency, has had a significant impact on improving teachers' competence in utilizing technology as part of the learning process. The entire series of activities went smoothly and received a positive response from the participants, who included subject teachers, homeroom teachers, and the madrasah leadership.

Through a participatory and practical training approach, teachers not only gained a conceptual understanding of the importance of digital innovation in learning but also had hands-on experience operating digital learning platforms such as Google Classroom, Quizizz, and Google Forms. The use of presentation media and direct practice created an interactive learning atmosphere and encouraged active participation. The improvement in teachers' knowledge and skills is evident in their ability to design digital learning that is more creative, efficient, and relevant to students' needs. Teachers are also starting to show initiative in developing adaptive, collaborative learning models that prioritize the development of 21st-century skills. This activity has become a strategic starting point in building an innovative culture within the madrasah environment. It is hoped that the results of this training will not only remain at the technical level but will also be able to be implemented sustainably in classroom learning practices. Synergy between academic mentors and the madrasah authorities needs to be continuously maintained to create a transformative educational ecosystem ready to face the challenges of the digital era.

References

Adib, M. A. (2022). Transformasi Keilmuan dan Pendidikan Agama Islam yang Ideal di Abad-21 Perspektif Rahmah El Yunusiyah. *Risâlah, Jurnal Pendidikan Dan Studi Islam*, *8*(2), 562–576. https://doi.org/10.31943/jurnalrisalah.v8i2.276

Ekowati, C. K., Garak, S. S., Madu, A., Rimo, I. H. E., & Halim, F. A. (2024). Canva Learning Media Development Workshop for Teachers of SMPK Adisucipto Penfui Kupang Workshop Pengembangan Media Pembelajaran Canva bagi Guru-guru SMPK Adisucipto Penfui Kupang. *Dinamisia : Jurnal Pengabdian Kepada Masyarakat*, *8*(6), 1718–1724. https://doi.org/10.31849/dinamisia.v8i6.20963

Fauzan, F., Abdul Hakam, Bayu Martanto Adji, Rinaldi Ekaputra, Yenny Narny, Aditya Abdi Pratama, Cindy Murdiaman Guci, & Amanda Nurra Mulyana. (2024). Disaster Risk Assessment and Education in Limau Manis Village, Pauh District, Padang City, West Sumatera. *Dinamisia : Jurnal Pengabdian Kepada Masyarakat*, *8*(6), 1641–1648. https://doi.org/10.31849/dinamisia.v8i6.24331

Gojali, I. (2010). *Manajemen Mutu Sekolah di Era Otonomi Pendidikan: "Menjual" Mutu Pendidikan dengan Pendekatan Quality Control bagi Pelaku Lembaga Pendidikan*. IRCISod.

Haryono, K., & Safitri, J. (2025). Enhancing Quranic Literacy for Activists of Karang Taruna Using Digital Quran Memorization. *Dinamisia : Jurnal Pengabdian Kepada Masyarakat*, *9*(1), 96–108. https://doi.org/10.31849/dinamisia.v9i1.22637

Manshuruddin, M., Tumiran, T., & Yunan, M. (2021). Application Values of Character Education in the Modern Pesantren System and Culture (Study at Pondok Pesantren Modern Ar-Raudlatul Hasanah Medan). *International Journal of Multicultural and Multireligious Understanding*, *8*(12), 295–307. https://doi.org/10.18415/IJMMU.V8I12.3241

Manshuruddin, M., Tumiran, T., Yunan, M., & Hamdan, H. (2021). Character Education Strategy Through Systemic-Integrative Model in Modern Pesantren Ar-Raudlatul Hasanah Medan. *International Journal of Social Science Research and Review*, *4*(4), 140–154. https://doi.org/10.47814/ijssrr.v4i4.116

Nofianti, R., & Sumarno. (2023). *Analisis Deviant Behavior dalam Keluarga (Parenting) terhadap Perkembangan Sosial Emosional Anak Usia Dini*. Tahta Media Group.

Nofianti, R., Widya, R., Rozana, S., & Munisa, M. (2021). Managerial Model Analysis of School Principles in Improving Student Character in Junior High School Panca Budi Medan. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, *4*(3), 5951–5958. https://doi.org/10.33258/birci.v4i3.2394

Rahmadi, F., Munisa, M., Rozana, S., Rangkuti, C., Ependi, R., & Harianto, E. (2021). Pengembangan Manajemen Sekolah Terintegrasi Berbasis Sistem

Informasi di Sumatera Utara. *Fitrah: Journal of Islamic Education*, *2*(2), 96–109. https://doi.org/10.53802/fitrah.v2i2.64

Tumiran, Ependi, R., & Lubis, S. (2022). The Implementation of Islamic Classroom Management and Teacher Performance In Improving Students' Learning Achievement. *Al-Ulum*, *22*(2), 465–488. https://doi.org/10.30603/au.v22i2.2981

Yuliawati, Y., Muhaimin, M., Elisma, E., Rahman, H., & Dwi Pratiwi, P. (2025). Inspirational Health Profession Class at Baiturrahman Orphanage in Jambi. *Dinamisia : Jurnal Pengabdian Kepada Masyarakat*, *9*(1), 8–16. https://doi.org/10.31849/dinamisia.v9i1.13256