


Analysis of Teacher Skills in Developing Effective Learning Plans in the Digital Era

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Article Info	ABSTRACT
<p>Keywords: Educational technology, teacher skills, lesson planning, digital era, digital education</p>	<p>The advancement of digital technology has significantly transformed education, particularly in learning processes increasingly integrated with technology. This study aims to analyze the skills of teachers at MAN 2 Medan in designing effective lesson plans in the digital era. Using a qualitative approach, the research explores the extent to which teachers address challenges such as limited facilities, lack of training, and the gap between technology and its classroom implementation. Findings reveal that while efforts to adopt technology exist, many teachers still struggle to create technology-based learning plans relevant to 21st-century students' needs. The study concludes that continuous training and improved facilities are strategic steps to enhance teacher competencies, ensuring optimal implementation of technology-based learning in the digital era.</p>
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INTRODUCTION

Entering the modern era, the development of digital technology has brought major changes in various areas of life, including education. Technology has influenced various things in life, including politics, economics, culture, art, and even education. The development of technology today is something that we cannot avoid in our lives, because technological progress goes hand in hand with the development of science. In the world of education, technology has an important role in science where students are taught about natural phenomena and facts, and through this technology, humans can use technology to apply this science.

Technology has become an integral part of the learning process, allowing students to learn more flexibly, anytime and anywhere (Raja & Nagasubramani, 2018). In this context, teachers have an important role to integrate technology into learning, not only as a tool, but also as a strategy to improve the quality of education (Tondeur et al., 2019).

This study focuses on the ability of teachers at MAN 2 Medan in developing technology-based learning plans, especially in the digital era. Technological advances offer great opportunities, but also present challenges, such as lack of training, limited infrastructure, and gaps between curriculum needs and realities in the field (Morehead & LaBeau, 2005; Muhazir & Retnawati, 2020). Teachers must have skills in designing learning that is relevant to the

needs of students in the 21st century, including mastery of digital technology that supports more interactive and interesting learning (Tondeur et al., 2019).

This study aims to analyze the extent to which teachers' expertise at MAN 2 Medan has developed in developing technology-based learning plans. This understanding is not only important for assessing the effectiveness of technology integration in the teaching and learning process, but also for providing strategic recommendations that can improve the quality of education. Amidst technological advances such as big data, machine learning, and metaverse, effective technology-based education is an important step to ensure the relevance of education in the future (Aghbashlo et al., 2021)

With this, this research is expected to contribute in answering challenges and utilizing opportunities in the digital era, especially through strengthening teacher competence in preparing effective and innovative learning plans.

RESEARCH METHODS

This research was conducted at MAN 2 MODEL MEDAN, located at Jl. William Iskandar No.7A, Bantan Tim., Kec. Medan Tembung, Medan City, North Sumatra 20222. The population in this study were all teachers at MAN 2 MODEL MEDAN, and the sample for this study was a Geography subject teacher at MAN 2 MODEL MEDAN with a total of one person. In-depth interviews will be conducted with teachers to understand their perspectives on how they design Learning Tools that are in accordance with the principles of the Independent Curriculum and digital technology.

Interviews will also be conducted with school principals and education supervisors to identify obstacles or challenges faced in implementing the Independent Curriculum related to the preparation of effective Learning Tools. Thematic data analysis techniques will be used to analyze qualitative data obtained through interviews, observations, and documentation. The data collected will be analyzed thematically to identify the suitability between teacher skills in preparing Learning Tools and the application of the principles of the Independent Curriculum, as well as the effectiveness of the use of technology in learning. The results of the analysis will provide an in-depth understanding of how technology and learning strategies can support the achievement of curriculum objectives.

RESULTS AND DISCUSSION

Results

This study shows that teachers at MAN 2 Medan still face various obstacles in developing technology-based learning plans that are relevant to students' needs in the digital era. The gap between rapid technological developments and their implementation in the classroom is a major challenge that affects the quality of the learning process. Teachers are aware of the importance of technology integration, but limited facilities such as hardware, internet networks, and other supporting resources often hinder the application of technology in learning. In addition, the lack of adequate ongoing training makes it difficult for many teachers to integrate technology with the curriculum effectively. As a result, the learning plans that are prepared tend to still focus on traditional approaches and do not reflect the needs of students

to develop 21st-century skills, such as digital competence, online collaboration skills, and independent information management.

In facing these challenges, intensive and continuous training is needed to improve teacher competency, not only in mastering technological devices but also in developing creative and innovative technology-based learning strategies. In addition, better facility support, such as the provision of adequate technological devices and stable internet access, is a strategic step that needs to be taken to ensure that the implementation of technology-based learning runs optimally. With structured training, infrastructure improvements, and collaboration between teachers through learning communities, it is hoped that teachers can more easily develop relevant, interactive, and interesting learning plans so that they can prepare students to face challenges in the digital era. This effort requires cooperation between the government, schools, and the community to create an educational ecosystem that supports the implementation of technology as a whole, in order to ensure the relevance of education amidst the dynamics of changing times.

Discussion

Based on the results of interviews with teachers who were respondents, several important issues can be analyzed related to the gap between technological developments and implementation in learning, obstacles faced by teachers, and strategies to improve teacher competence in designing technology-based learning.

1. **Gap Between Technology Development and Learning Implementation** The gap between rapid technological development and its implementation in the classroom can greatly affect the quality of learning. Many teachers are already aware of the importance of technology in learning, but are hampered by limited facilities and lack of training on how to properly integrate it into lesson plans. Teachers feel that technology is developing so rapidly, but often they do not get enough training to make maximum use of it. As a result, the quality of the teaching and learning process is less than optimal, despite the intention and effort of teachers to use technology.
2. **Obstacles in Designing Technology-Based Learning Plans** The main obstacle faced by teachers in designing technology-based lesson plans is the lack of adequate training. Although many teachers are familiar with technology, they are not yet sufficiently trained in how to create lesson plans that utilize technology effectively. In addition, limited facilities such as inadequate devices and often unstable internet network problems are also significant obstacles in implementing technology in learning. This causes many teachers to have difficulty designing and implementing technology-based lesson plans effectively.
3. **Relevance of Learning Plans to Students' Needs in the Digital Era** Current learning plans are still not fully aligned with the needs of students in the digital era. Although some curriculum materials have incorporated elements of technology, many topics still focus on traditional approaches and do not reflect the dynamics of the development of the digital world. Students need learning that equips them with digital competencies, the ability to collaborate online, and the skills to access and manage information independently. Unfortunately, many learning plans are not able to optimally

accommodate these needs, so students are not prepared to face the challenges of the digital era.

4. Strategies to Improve Teacher Competence in Designing Technology-Based Learning
To improve teacher competence, a structured and in-depth ongoing training program is needed regarding the use of technology in education. This training does not only focus on the use of hardware and software, but also on how to effectively integrate technology into the curriculum. In addition, the formation of a learning community for teachers can be a means to share experiences and strategies in implementing technology. This approach can accelerate the process of adapting technology in learning. With adequate training support and consistent mentoring, teachers will find it easier to design technology-based learning plans that are effective and relevant to students' needs in the digital era.

CONCLUSION

Based on the research results, it can be concluded that the gap between technological developments and their implementation in the classroom affects the quality of learning. Teachers face obstacles in designing technology-based learning plans, such as lack of training, limited facilities, and experience in integrating technology. In addition, the relevance of learning plans to the needs of students in the digital era is also still lacking, because the existing materials focus more on traditional concepts than the necessary digital skills. To improve teacher competence, more comprehensive training and better facility support are needed so that technology-based learning can be implemented effectively.

REFERENCES

- Ulum, M. (2020). Prinsip-prinsip pengembangan kurikulum: Relevansi dan kontinuitas. *Attanwir: Jurnal Kajian Keislaman dan Pendidikan*, 12(1), 67-75
- Rahim, F. R., Suherman, D. S., & Murtiani. (2019). Analisis kompetensi guru dalam mempersiapkan media pembelajaran berbasis teknologi informasi era revolusi industri 4.0. *Jurnal Eksata Pendidikan*, 3(2), 133-141.
- Sofyan, A., & Hidayat, A. (2022). Dampak perkembangan teknologi peningkatan kualitas pendidikan. *Jurnal Satya Informatika*, 7(2), 16-25.
- Siemens, G. (2005). Connectivism: A Learning Theory for the Digital Age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 3-10.
- Mayer, R. E. (2009). *Multimedia Learning* (2nd ed.). Cambridge University Press.
- <https://repository.uin-suska.ac.id/6044/3/BAB%20II.pdf>