Jurnal Ilmiah Edukatif

E-ISSN: 2745-4681
Volume 10 Nomor 02, Desember 2024, Halaman 237-247

# ANALYSIS OF TEACHER COMPETENCE IN USING DIGITAL LEARNING MEDIA

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**Abstract.** This study aims to analyze teacher competence in the use of digital learning media, which is increasingly relevant in the era of information technology. This competence includes the ability of teachers to select, manage, and optimize digital media to support the teaching and learning process. The study used a qualitative descriptive method with data collection through interviews, observations, and questionnaires to teachers in several schools. The results of the analysis show that most teachers have a basic understanding of digital media but still face challenges in using it optimally, such as limited technical knowledge, access to devices, and lack of special training. Supporting factors, such as the availability of infrastructure and support from the school, also affect the ability of teachers to utilize digital learning media. Recommendations from this study include the need for ongoing training and improved facilities so that teachers are better prepared to integrate technology into the learning process. This study is expected to provide insight for education policy makers to improve the quality of teacher competence in the digital era.
**Keywords**: Teacher Competence, Digital Learning Media, Educational Technology, Digital Learning, Education Quality

**Abstrak.** Penelitian ini bertujuan untuk menganalisis kompetensi guru dalam penggunaan media pembelajaran digital yang semakin relevan di era teknologi informasi. Kompetensi ini meliputi kemampuan guru dalam memilih, mengelola, dan mengoptimalkan media digital untuk mendukung proses belajar mengajar. Penelitian ini menggunakan metode deskriptif kualitatif dengan pengumpulan data melalui wawancara, observasi, dan kuesioner kepada guru-guru di beberapa sekolah. Hasil analisis menunjukkan bahwa sebagian besar guru memiliki pemahaman dasar tentang media digital namun masih menghadapi tantangan dalam menggunakannya secara optimal, seperti keterbatasan pengetahuan teknis, akses ke perangkat, dan kurangnya pelatihan khusus. Faktor-faktor pendukung, seperti ketersediaan infrastruktur dan dukungan dari sekolah, juga mempengaruhi kemampuan guru dalam memanfaatkan media pembelajaran digital. Rekomendasi dari penelitian ini antara lain perlunya pelatihan berkelanjutan dan peningkatan fasilitas agar guru lebih siap dalam mengintegrasikan teknologi ke dalam proses pembelajaran. Penelitian ini diharapkan dapat memberikan masukan bagi para pengambil kebijakan pendidikan untuk meningkatkan kualitas kompetensi guru di era digital.
**Kata kunci**: Kompetensi Guru, Media Pembelajaran Digital, Teknologi Pendidikan, Pembelajaran Digital, Kualitas Pendidikan

**Introduction**

The development of information and communication technology has brought significant changes in various aspects of life, including in the field of education (Julia, J., et al., 2020). In today's digital era, the application of technology in the learning process is becoming increasingly important to improve the effectiveness and efficiency of education. Digital learning media, such as interactive presentations, learning videos, e-learning platforms, and online learning applications, have opened up new opportunities for teachers and students to interact more dynamically and interactively (Fitriyah et al., 2022). This encourages the improvement of digital skills, both among students and educators, in order to meet the needs of adaptive and relevant learning with the times. Ramadhan et al., (2019) stated that teacher competence in utilizing digital learning media is very important because teachers play a major role in designing and implementing innovative learning strategies. However, not all teachers have adequate competence in using this technology. According to several studies, many teachers are not fully ready to integrate technology into learning, either due to limited technical skills or lack of access to adequate digital devices. This is exacerbated by the lack of special training for teachers to improve their digital skills. As a result, the learning process is less than optimal and sometimes still takes place conventionally, which has the potential to reduce student interest and participation (Handayani et al., 2024).

The government and educational institutions have tried to overcome this problem by holding various training programs and providing technological infrastructure (Lorensius et al., 2023). However, the implementation of these programs often faces obstacles, such as limited time, costs, and minimal assistance after training. In addition, teachers' readiness to accept and implement new technologies varies, depending on their educational background, age, and teaching experience. Thus, many teachers still have difficulty optimizing the use of digital learning media in their classrooms.

On the other hand, the need to integrate digital media is increasing along with the shift in learning models, especially since the COVID-19 pandemic. The pandemic forced the world of education to switch to a distance learning method that is completely digital. Learning experiences during the pandemic show that digital learning media are not only useful in emergency situations but are also an important component in everyday learning. This makes digital competence for teachers no longer just an additional skill, but has become a basic need in carrying out the teaching profession (Guillén-Gámez, F. D et al., 2022).

Facing this reality, an in-depth analysis of teacher competence in using digital learning media becomes very relevant. A good understanding of the level of teacher competence, as well as the factors that influence these skills, can provide a basis for formulating appropriate strategies in improving the quality of technology-based education. This study will provide an overview of the level of teacher competence in using digital media, the obstacles faced, and the supporting and inhibiting factors (Garzón Artacho et al., 2020).

Through this research, it is expected to obtain useful recommendations to address the gap in teachers' digital skills, so that they can provide a more meaningful learning experience that is in line with the needs of today's learners. The findings of this study are expected to be input for schools, governments, and policy makers in designing more effective and sustainable training programs and provision of facilities.

## Research Methods

This study uses a literature review method to analyze teacher competence in using digital learning media. The literature review was conducted by collecting and reviewing various sources, such as journal articles, books, and relevant research reports in the last 10 years. The selected literature covers aspects of teacher digital competence, challenges in implementing digital learning media, and supporting and inhibiting factors that influence the use of technology in education. The results of this literature analysis will be synthesized to find patterns, trends, and gaps in previous research, which will then be used as a basis for formulating practical recommendations in improving teacher digital competence.

## Results and Discussion

### Teacher Competency Level in Using Digital Learning Media

Along with the rapid development of information and communication technology, digital media is increasingly being applied in learning activities at various levels of education. Teachers as the spearhead of education in the classroom are required to have adequate competence in using digital learning media to facilitate an interactive, effective, and interesting learning process for students (Simpol et al., 2022). Teacher competence in using digital media includes the ability to select, design, and implement various technologies that can increase student engagement and optimize learning.

According to Damarwan, E. S., & Khairudin, M. (2017) the level of teacher competence in using digital learning media can vary, influenced by a number of factors such as educational background, teaching experience, access to technology, and support from educational institutions. At the basic level, this competence includes the ability to operate technological devices such as computers, tablets, and projectors and use basic applications such as word processing, presentations, and email. However, as the complexity of digital learning media increases, teachers are also expected to be able to utilize e-learning platforms, interactive learning applications, and more complex classroom management software (Rusydiyah et al., 2020).

Research shows that most teachers have basic skills in operating digital devices, but still face challenges in using specific software and applications for learning. Some teachers, especially those who are more senior or who do not have a background in technology education, often have difficulty adapting the use of digital platforms in teaching and learning activities. On the other hand, the younger generation of teachers tend to be more prepared and adaptive to technology, but sometimes have difficulty understanding the best way to integrate the technology into learning pedagogically (Utami, D. R. F., & Latiana, 2018).

Teachers' ability to utilize digital learning media also depends greatly on the training and support they receive. Teachers who receive regular training related to the use of educational technology show better abilities in implementing digital media in their classrooms than teachers who do not receive training (Utami, D. R. F., & Latiana, 2018). Comprehensive, continuous, and relevant training is very influential in improving teachers' abilities, because it allows them to not only learn basic techniques but also deepen their understanding of the pedagogical applications of the technology. Training that includes project-based or scenario-based learning, for example, is more effective in helping teachers understand how to use digital applications in real-world learning contexts. Support from schools and government policies also affect teachers' level of competence in using digital media. Schools that have good technological infrastructure, such as computer labs, stable internet connections, and adequate hardware and software, allow teachers to have more freedom in implementing technology in learning (Prasetia et al., 2020). Conversely, schools with limited infrastructure often become obstacles for teachers in utilizing digital media. In addition, policy support in the form of incentives or recognition for teachers' efforts to develop their digital competence is also very important. Teachers who receive awards for their efforts in developing digital learning media tend to be more motivated to continue improving their abilities (Kassymova et al., 2023).

In addition to the above factors, teachers' digital competence is also influenced by their mental readiness or attitude towards technology. Some teachers still feel reluctant or anxious in adopting new technologies, which is often caused by a lack of understanding or fear of being unable to master the technology. This attitude can change through increased self-confidence supported by direct experience and adequate practice (Umnapiang, 2022). Teachers who have a positive attitude towards technology tend to be more daring to experiment with various digital media and adapt them to students' needs. On the other hand, digital competence is also closely related to teachers' ability to practice technology-based classroom management. This includes an understanding of how to utilize platforms to manage assignments, monitor student learning progress, and create meaningful two-way interactions in virtual classrooms. Teachers who are able to manage digital classes well can provide a more effective learning experience for students, but this skill is still a challenge for most educators who are just starting the transition to digital learning.

**Challenges and Obstacles in Implementing Digital Media**

The implementation of digital media in the learning process is an important step towards a more modern and interactive education. The use of digital technology provides opportunities for teachers to deliver materials in a more interesting way, enrich learning resources, and increase student engagement (Salam et al., 2023). However, the implementation of digital media in learning is inseparable from various challenges and obstacles faced by teachers, students, and educational institutions. These challenges can vary, including technical factors, human resources, and the readiness of school infrastructure and culture. According to Jamilah et al., (2021), one of the main obstacles in the implementation of

digital media is the limited technological infrastructure, especially in areas that do not yet have adequate internet access. Stable and fast internet access is a basic need in the use of digital learning media. However, there are still many schools in remote areas or with limited resources that only have slow internet connections or even no internet access at all. This condition makes it difficult for teachers to take advantage of various online learning applications and platforms that require an internet connection, such as e-learning platforms, collaboration applications, and video conferencing. In addition, limited hardware such as computers, laptops, or tablets is also a problem in many schools, especially in schools that have limited budgets. Without adequate devices, neither teachers nor students can access digital media optimally.

In addition to infrastructure, another technical obstacle faced is the lack of specific training for teachers in the use of educational technology. Effective implementation of digital media requires sufficient technical skills and pedagogical understanding (Pölzl-Stefanec, 2021). However, many teachers feel that they are not yet skilled enough or do not have sufficient knowledge to use digital devices and applications in learning. Some teachers, especially those who have been teaching using conventional methods for a long time, have difficulty adapting to new technologies that continue to develop. This obstacle is often caused by the lack of training provided to teachers. Although some schools have held basic training, this training is often inadequate because it only lasts a short time and is not in-depth. As a result, many teachers do not yet have sufficient competence in utilizing digital media optimally to support learning objectives.

Time constraints are also another challenge in implementing digital media. Teachers often have busy schedules, with the responsibility of teaching, preparing learning, evaluating learning outcomes, and carrying out other administrative tasks. With a high workload, many teachers feel they do not have enough time to learn new technologies or to prepare quality digital materials. Preparing digital materials often takes longer than conventional methods, because teachers need to find or create appropriate content, master the applications used, and adapt to learning needs. This time constraint makes many teachers tend to choose more traditional teaching methods, even though they realize that digital media can provide benefits in the learning process (Vassiliadis, C., & Belenioti, 2017). In addition to technical and time constraints, the implementation of digital media also faces challenges in terms of cultural readiness and support from educational institutions. School cultures that do not fully support the use of technology are often obstacles for teachers to innovate with digital media. Some schools still prioritize traditional teaching methods and do not view technology as a major component in learning. In addition, the lack of policies that encourage the active implementation of technology in schools also makes teachers less motivated to use digital media. Support from schools is very important, whether in the form of policies, recognition, or incentives, so that teachers are encouraged to improve their digital skills and implement technology in the teaching and learning process (Dekker et al., 2020).

Another aspect that is no less important is students' readiness to use digital media. Although the current generation of students tends to be more familiar with technology, not

all students have adequate devices or internet access at home (Dewi et al., 2023). This is especially a challenge when distance or hybrid learning is implemented, where access to digital media is a primary need. Students who do not have adequate devices or internet access are often left behind in terms of understanding the material, because they cannot follow the learning optimally. This condition has the potential to widen the educational gap, especially between students in urban and rural areas, or between students with different economic conditions. As a result, the implementation of digital media that aims to increase inclusivity can actually create new injustices if it is not accompanied by policies that pay attention to accessibility for all students. Limitations in managing digital classes are also a challenge for some teachers, especially when using online learning platforms.

Student interaction and supervision in online classes are very different compared to face-to-face classes. Teachers often face difficulties in monitoring student engagement, maintaining discipline, and ensuring that each student understands the material presented. Digital platforms require special skills in classroom management, such as managing interaction time, dividing students into study groups, and providing feedback quickly and effectively. For teachers who are not yet familiar with digital classroom management, this can be an obstacle in creating a conducive learning experience for students (Mutohhari et al., 2021). In addition to these challenges, the use of digital media in learning also has the potential to raise ethical issues, such as misuse of technology and data security. With the increasing number of digital interactions, risks related to student privacy and data security are important issues that must be considered. Teachers need to understand how to maintain information security and prevent privacy violations. For example, in using third-party applications, teachers need to ensure that student data is protected and not misused by outside parties. However, not all teachers have adequate awareness and understanding of the importance of this security aspect, so the potential risks that arise are still quite high.

**Supporting Factors in Developing Teachers' Digital Competence**

In the increasingly developing digital era, teachers' ability to use information technology is a key factor in an effective learning process that is relevant to the needs of today's students. The development of teachers' digital competence depends not only on their personal willingness to learn and adapt, but also on various external supporting factors that influence their readiness and success in integrating technology into the learning process. Several important factors that encourage the development of teachers' digital competence include government policy support, the availability of technological infrastructure, adequate training programs, professional communities, and school culture and management support (Lucas et al., 2021). Government policy support is one of the main factors that encourages the development of teachers' digital competence. The government has an important role in creating policies that encourage the use of digital technology in schools and provide clear competency standards for teachers in terms of technology mastery (Cattaneo et al., 2022). Policies that are oriented towards improving teachers' digital competence usually include ongoing training programs, curriculum development that is relevant to the latest technology,

and the provision of adequate technological infrastructure. For example, many countries have set national digital competency standards that must be achieved by teachers at various levels of education. In Indonesia, the Ministry of Education and Culture has launched various initiatives to improve digital competence, such as the Teacher Mover Program and freely accessible digital learning platforms. This kind of support helps teachers feel that digital competence is not only their personal responsibility, but also part of a joint effort to achieve a more advanced educational vision.

The availability of technological infrastructure in schools is also a significant supporting factor in the development of teachers' digital competence. Adequate infrastructure, such as stable internet access, computer devices, tablets, or smart boards, plays a major role in facilitating the application of technology in learning (Instefjord, E. J., & Munthe, 2017). Schools that have good access to technology allow teachers to learn and experiment directly with various digital media. In addition, the technical support available in schools, such as the presence of IT personnel or technical support teams who can help teachers overcome technical obstacles, makes it easier for teachers to integrate technology into the classroom. Good infrastructure also opens up opportunities for teachers to introduce various interactive learning platforms, learning applications, and other digital media to students, which in turn improves teachers' skills in using technology effectively.

Structured training and professional development programs are also very important supporting factors in developing teachers' digital competence. This training not only provides a basic understanding of technology but also helps teachers understand how to best utilize it pedagogically. Effective training programs include technology-relevant teaching techniques, skills in selecting applications that are appropriate to learning objectives, and practical approaches to addressing challenges that arise during the digital learning process. Continuous training allows teachers to keep up with the latest technological developments and gradually improve their skills (Fernández-Batanero et al., 2022). Many educational institutions collaborate with educational technology providers to provide training for teachers, either through workshops, online courses, or special certifications that are recognized nationally or internationally. With the right training programs, teachers can strengthen their digital competence systematically and in an applicable manner.

In addition to formal training, the existence of a professional community or network of teachers based on the same interest in educational technology is also a significant supporting factor. Through this community, teachers can share knowledge, experiences, and best practices in the use of technology in learning. Professional communities can be in the form of online forums, social media groups, or regular meetings facilitated by schools, professional associations, or the government. These communities are often a place for teachers to seek inspiration and get support from colleagues who have similar experiences and skills (Masoumi, D., & Noroozi, 2023). Here, teachers can also exchange solutions related to technical problems, digital learning methodologies, and challenges faced in the use of digital media.

The existence of this professional community not only helps teachers improve their digital competence but also provides additional motivation for them to continue learning and innovating in developing technology-based teaching methods. Support from school management and a school culture that supports innovation also play an important role in facilitating the development of teachers' digital competence. Schools that have an innovative culture tend to encourage teachers to try new approaches to teaching, including the use of digital media. School management that is proactive in providing facilities, opportunities, and incentives for teachers to improve their digital skills will create a supportive environment for teachers to develop (Antonietti et al., 2022). For example, some schools provide incentives in the form of awards or special recognition for teachers who succeed in developing and implementing digital media in learning. In addition, school management that is open to new ideas from teachers will make teachers feel appreciated and motivated to continue exploring the potential of technology in the learning process. A collaborative and open culture to innovation will strengthen teachers' confidence in utilizing digital technology in the classroom.

In addition to these factors, easy access to digital learning resources and the availability of online learning materials are also important supporters for teachers in developing their digital competencies. With the increasing number of digital learning platforms that provide materials openly, teachers can take advantage of various learning resources without having to create them themselves from scratch. Digital learning resources such as learning videos, interactive modules, and online quiz platforms provide opportunities for teachers to study examples of the application of digital media while adapting them according to class needs. These resources help reduce teachers' workload and inspire them to create creative and technology-based teaching methods.

In addition, the emergence of various online education platforms and easily accessible Learning Management Systems (LMS) also support teachers in improving digital competence. With LMS, teachers can manage classes digitally, organize assignments, and collect student work more efficiently. LMS also allows teachers to interact with students online, either through discussion forums, online quizzes, or collaborative assignments carried out online. The ability to manage LMS is one of the important skills in teacher digital competence, and an introduction to LMS will help them optimize the teaching and learning process in the digital classroom (Althubyani, 2024). Overall, developing teacher digital competence requires a combination of support from various aspects, including government policies, technological infrastructure, professional training, supporting communities, and school management and culture that support innovation. These factors complement each other and create a conducive environment for teachers to develop their digital skills effectively. Through comprehensive support, teachers can not only master technical skills in using technology, but also be able to utilize technology to create more interactive, interesting, and relevant learning experiences for students.

**Conclusion**

The use of digital learning media in education is currently an essential need to improve the quality and relevance of the teaching and learning process. Teacher competence in utilizing digital media includes technical, pedagogical, and managerial skills in managing digital classes effectively. Based on the analysis conducted, it can be concluded that teachers' digital competence is still diverse, influenced by factors such as educational background, experience, access to technology, and support from educational institutions.

In general, teachers who have access to ongoing training and adequate infrastructure support show higher abilities in utilizing technology in learning. Systematic and comprehensive training greatly helps teachers in developing their skills, both technically and pedagogically. On the other hand, common obstacles faced by teachers in adopting digital media include limited internet access, lack of supporting devices, and lack of technical understanding for some teachers. This shows that support from the government, schools, and education communities is very important in encouraging the development of teachers' digital competence in a sustainable manner.

With the right support, teachers will be more confident and skilled in integrating digital media into the learning process. This will contribute to the creation of a more interactive and adaptive learning experience in accordance with technological developments and the needs of today's students. Continuous development of teachers' digital competencies is a strategic step in realizing more innovative and highly competitive education in the digital era.

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