

Teachers' Experiences in Using Digital Media for Learning to Support Quality Education in SDG 4 at SDN Pejaten Timur 05

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Abstract

This study explores teachers' experiences with using digital media for learning at SDN Pejaten Timur 05 and its contribution to supporting Sustainable Development Goal (SDG) 4: Quality Education. A qualitative approach with a case study design was used to gain in-depth insights into the subjective experiences of individuals regarding this phenomenon. The participants in this study were three teachers. Data were collected through in-depth interviews conducted online via Zoom Meeting. An interview guide was used as the data collection tool, and the interviews were recorded to ensure the accuracy of the information. Data were analyzed using an inductive approach, following the stages of transcription, pattern identification, and conclusion drawing. The results indicate that while the use of digital media enhances learning interactivity, teachers face challenges related to limited internet access, technology devices, and readiness to use technology. School support in providing facilities and infrastructure has been helpful, but there is a need to increase the availability of devices and ensure more stable internet access. This study offers recommendations to improve policies and digital infrastructure to better support inclusive and quality education in line with SDG 4.

1. Introduction

The development of digital technology has had a major impact on the world of education, especially in supporting the learning process [1][2]. Teachers as learning facilitators have an important role in utilising digital media to improve learning effectiveness [3][4][5]. At the elementary school level, the use of digital media can help students understand concepts in a more interactively [6][7][8]. However, adaptation to technology still faces challenges, both in terms of teacher readiness and school infrastructure [9][10][11]. Therefore, this study focuses on teachers' experiences in using digital media at SDN Pejaten Timur 05.

The use of digital media in learning has a close relationship with Sustainable Development Goal (SDGs) 4, which is to ensure quality, inclusive and equitable education for all [12][13][14]. One of the targets of SDG 4 is to increase the use of information and communication technology to support learning [15][16][17]. Teachers play an essential role in integrating technology to create more engaging and effective learning experiences [18][19][20][21][22]. However, there are still gaps in the application of technology, both in terms of accessibility and teachers' ability to utilise it [23][24][25].

Based on previous research, the use of digital media in elementary school learning has contributed to the improvement of students' conceptual understanding and learning motivation. Meilina et al [26] found that digital media such as augmented reality and interactive platforms can enhance the understanding of science concepts, demonstrating how digital media can enrich the learning experience in elementary schools. Similarly, Hidayat [27] emphasized the importance of digital media in increasing student engagement in integrated science learning, while Widiastari and Puspita [28] showed that interactive applications and educational videos are effective in boosting student motivation. These findings support the focus of this study in exploring teachers' experiences with using digital media to support quality education in line with SDG 4, while also highlighting the importance of the local context and teachers' firsthand experiences to enrich digital literacy in elementary schools.

SDN Pejaten Timur 05 is a school that has begun to adopt digital media in its teaching process, utilizing various tools such as learning videos, educational applications, and e-learning platforms, although it still faces challenges related to limited devices, internet connectivity, and teachers' understanding of technology. This school was chosen as the research site due to its proactive approach in integrating technology, despite the various obstacles it encounters. The limited access to technology and varying levels of digital literacy among teachers make it an ideal location to explore more effective ways of utilizing digital media in the learning process. Furthermore, the school's commitment to improving educational quality aligns with the objectives of this study, which aims to identify practical solutions and provide insights into overcoming the barriers faced by teachers and students in using technology. Therefore, it is crucial to investigate how optimizing the adoption of digital media can support quality education and contribute to the achievement of SDG 4. Therefore, it is crucial to explore teachers' experiences in utilizing digital media to support quality learning [29][30][31].

Since the COVID-19 pandemic, the use of technology in education has increased significantly. Teachers who were previously unfamiliar with digital media have had to adapt to various online platforms to ensure learning continues [32][33][34]. As a result, the closure of schools and the suspension of face-to-face learning during the pandemic forced educational institutions to quickly adopt digital platforms to ensure the continuity of education. Furthermore, with the shift to online learning, teachers were required to quickly familiarize themselves with new digital tools and adjust traditional teaching methods to the virtual environment. Therefore, this situation highlights the importance of technology in maintaining access to education and ensuring that learning continues effectively and inclusively, despite the challenges posed by the pandemic.

Although face-to-face learning has returned, the habit of using digital media continues [35][36]. This shows that technology has great potential to improve learning effectiveness, but it still needs more optimal support to be implemented properly [37][38][39].

The results of this study are expected to be a reference for policymakers in improving the quality of digital-based education. By providing support in the form of training, adequate infrastructure, and appropriate policies, technology integration in learning can be optimised [40][41][42]. In addition, this research also contributes to the achievement of SDGs 4 by encouraging the use of digital media in supporting inclusive and quality education.

2. Methodology

A case study design used to gain in-depth insights from a qualitative approach, aiming to understand the subjective experiences of individuals regarding a particular phenomenon. A case study is a research method that focuses on one or more cases to explore the perceptions, reactions, and context of the phenomenon being studied. This case study design delves into the meaning of participants' experiences through in-depth interviews, with the goal of identifying key patterns and themes that reflect how individuals experience the phenomenon [43].

This research was conducted over two weeks, focusing on teachers' real-life experiences in using digital media for learning at SDN Pejaten Timur 05. The selection of teachers as research subjects is based on field facts, as mentioned in the background, where the use of digital media in teaching is a current trend and challenge faced by educators at the school. This study involved three teachers at SDN Pejaten Timur 05, with the selection based on the principle of data saturation, where additional participants no longer provided new insights. These three teachers offered diverse perspectives to comprehensively describe the overall experience of using digital media in teaching at the school.

Data were collected through in-depth interviews, which were conducted through Zoom Meeting and recorded with the participants' permission to ensure the accuracy of the data. Furthermore, data analysis was conducted using an inductive approach, with the following stages: (1) Interview transcription. (2) Identification of patterns and relationships that emerged from the data. (3) Drawing conclusions based on the patterns found [44].

3. Results and Discussions

Based on interviews with three teachers at SDN Pejaten Timur 05, there are several main findings related to the use of digital media in learning. Firstly, teachers feel that the use of digital media helps improve learning effectiveness by presenting materials more interactive and interesting way. This finding aligns with constructivist learning theories, which emphasize interactive and engaging learning environments as a key factor in enhancing student understanding and participation [45][46]. Secondly, the main obstacles faced are limited access to a stable internet network and sufficient technological devices to support the learning process. This issue has been highlighted in previous studies that address the digital divide and its impact on educational outcomes [47]. Third, school support in providing infrastructure contributes to the sustainability of digital media utilisation, although there are still limitations in the number of devices available. In addition, teachers' adaptation to technology is also an vital factor in the smooth implementation of digital media.

The use of digital media in learning at SDN Pejaten Timur 05 has provided various benefits for teachers and students. Through the categorization of responses, several themes emerged: the role of technology in student engagement, challenges related to infrastructure, and the need for teacher training in effectively using digital media. Based on interviews with three teachers, digital media such as LCDs, laptops and learning applications help to facilitate the delivery of material and increase student involvement in learning. One teacher stated that the material is easier to understand because it is presented interactively, which allows students to be more focused and enthusiastic in learning. Despite its many benefits, the use of digital media also faces various challenges. One of the main obstacles faced is the limitations of an unstable internet network. Some teachers mentioned that without a smooth internet connection, the use of digital media becomes less effective. In addition, the limited devices available at school are also an obstacle for teachers in implementing technology-based learning.

Support from the school in providing facilities and infrastructure is quite helpful for teachers in overcoming these challenges. One teacher revealed that the school tries to facilitate technology needs, although there are still limitations in access to devices. Teachers also often use personal devices such as laptops and mobile phones to support digital learning in the classroom. In addition to technical constraints, teachers' readiness to master technology is also an major factor in implementing digital media. Based on interviews, the strategies teachers use to overcome this challenge are to improve their understanding of technology, educate students, and share experiences with fellow teachers. This suggests a shift towards a collaborative and ongoing learning process for educators, which is supported by the concept of lifelong learning [48]. Thus, adaptation to technology becomes easier and more effective.

The use of digital media is also observed in students' skill development. One teacher mentioned that technology helps students develop critical thinking skills and step out of their comfort zones. Students are more actively engaged in exploring learning materials through various digital platforms provided by the teacher. However, there are still disparities in the utilization of technology in schools. Some teachers noted that not all students have equal access to digital devices at home. This brings attention to the issue of digital inequality, which has been extensively discussed in the literature [49]. This leads to differences in their ability to use technology for learning, which may ultimately influence the learning experience. To address this challenge, some teachers have taken the initiative to purchase personal internet data to ensure continued access to learning materials. Additionally, there is hope that the government and relevant parties will provide more adequate infrastructure to support digital-based learning, particularly in elementary schools.

The integration of technology in learning also requires support from parents. Teachers said that it is paramount to socialise with parents so that they better understand the benefits of digital media in children's education. With parental involvement, the use of technology in learning can be more effective and sustainable. The COVID-19 pandemic is one of the factors that accelerate the adoption of technology in education. One teacher mentioned that although face-to-face learning has returned, the use of digital media continues because it has become part of the habit in the teaching and learning process.

Based on the interview, the school strongly supports the use of technology in learning. One form of support provided is by increasing the availability of devices and internet connections in the school environment. The school's actions align with the goals of SDG 4, which promotes inclusive and equitable quality education and lifelong learning opportunities for all [50]. However, more initiatives are still needed to expand access to technology for all students. Teachers hope that in the future, more digital platforms can collaborate with schools and education offices to improve learning effectiveness. With collaboration between various parties, the use of digital media in education can be more optimised and equitable. In addition, training for teachers on digital media utilisation is also considered indispensable. With improved technology skills, teachers can be more confident in integrating technology into learning, so that the benefits can be maximised by students.

Overall, the use of digital media in learning at SDN Pejaten Timur 05 has had a significant positive impact. However, there are still challenges that need to be overcome to ensure the implementation of technology can be more effective and inclusive for all students. This research highlights the importance of policies that support the use of technology in education. With the right policies in place, schools can more easily adopt digital media across the board and provide greater benefits for students and teachers. As a way forward, schools and policymakers need to consider long-term strategies for technology integration in basic education. This includes the provision of devices, more stable internet access and training for teachers to be better prepared for the challenges of the digital era. The figure 1 below illustrates the data analysis process based on the Miles and Huberman model. It shows the interconnected stages of data collection, reduction, display, and conclusion drawing, emphasizing how these steps are revisited and refined throughout the qualitative research process.

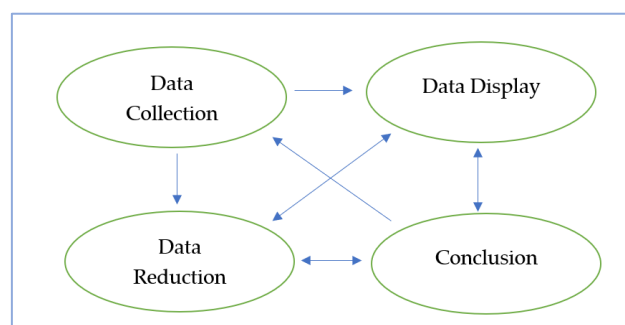


Fig. 1 Miles and Huberman, 1994

4. Conclusion

The use of digital media in learning at SDN Pejaten Timur 05 has brought significant shifts in teaching methods and student engagement. Digital media allows for a more interactive and engaging delivery of materials, thereby enhancing students' understanding of learning. Teachers feel that with the help of technology, they can more effectively explain complex concepts to students. This aligns with SDGs goal 4: Quality Education, which emphasizes improving the quality of learning through innovation and technology to support more inclusive and effective access to education. However, despite the benefits, there are challenges in implementing digital technology in schools. The main obstacles include limited internet connectivity and inadequate infrastructure. Teachers often have to rely on personal devices and standalone internet connections to support the learning process. These challenges show that there is still a gap in access to technology, which needs to be addressed for all students to have equal learning opportunities, as emphasised in SDG 4 on equitable access to education.

Support from schools is good but still needs improvement, especially in the provision of adequate technology devices for teachers and students. In addition, it is fundamental to ensure that all students have equal access to technology to reduce the digital divide in learning. Increased investment in digital infrastructure and teacher training on the use of technology can be a strategic step to support the sustainability of this programme. Collaboration between teachers, parents and policy makers is needed to improve the effectiveness of digital media utilisation in basic education. Socialisation to parents is

also pivotal so that they better understand and support the use of digital media in their children's learning process. Continuous support from various parties will ensure that the integration of digital media in learning can continue to grow and have a long-term impact on improving the quality of education.

Opportunities and Challenges

The main opportunity in the implementation of digital media is the increasing innovation in learning that enables more creative and effective teaching methods. In addition, increased access to online learning platforms provides flexibility for students and teachers in accessing educational materials, supporting the principle of lifelong learning which is part of SDG 4.

However, limitations in access to technology are a challenge that must be overcome. The digital divide among students can also affect learning outcomes, especially for those from economically disadvantaged backgrounds. Therefore, long-term strategies should include equitable access to technology for all students as well as strengthening the capacity of teachers to utilise technology optimally.

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