

Teachers' Perceptions of Digital Teaching Material Development: A Qualitative Study in Islamic Primary Schools

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ABSTRACT

The development of digital-based teaching materials has become a global trend in education, driven by advances in information and communication technology (ICT). Although it has the potential to improve the quality of learning and student participation, the effectiveness of digital teaching materials depends on the ability of teachers to develop them. This study aims to explore teachers' perceptions of the development of digital-based teaching materials at Madrasah Ibtidaiyah Unwanul Falah Nahdatul Wathon Paok Lombok, Indonesia. The research method used a qualitative approach with in-depth interviews involving seven teachers. The results show that the majority of teachers consider digital teaching materials important for explaining material that cannot be seen directly and for increasing the variety of teaching methods. Factors such as teaching experience, motivation, school facilities, competence, and training received influence teachers' perceptions. Although there are challenges in mastering digital media, training has been proven to improve teachers' ability to use this technology. Thus, training in digital teaching material development is very important to improve learning effectiveness and meet student needs in the digital era. The results of this study are expected to provide insights for designing more effective and relevant digital-based teaching material development training for teachers.

Keywords: *Teacher Perceptions, Development, Digital Teaching Materials, Islamic Primary School.*

1) INTRODUCTION

The development of information and communication technology (ICT) has brought significant changes in the world of education. Digital transformation is not only changing the way information is delivered but also how teachers and students interact in the learning process (Mhlongo et al., 2023; Zhu, 2023). Learning is not limited to textbooks and conventional methods but has evolved towards interactive, flexible, and technology learning as the primary medium (Fitriah et al., 2025; Nursya'ban, 2024; Wulandari et al., 2022). Teachers play a key role in educational innovation, so their ability to develop digital teaching materials is crucial to improving the quality of learning in schools (Kartikawati & Nurhasanah, 2024; Lin & Johnson, 2021; Tirado-Morueta et al., 2022; Yin et al., 2023).

The development of digital-based teaching materials has become a global trend in modern education (Qureshi et al., 2021; Rini & Cholifah, 2020). Digital teaching materials make the learning

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process more engaging, efficient, and contextually relevant (Anam et al., 2021; Fitriah et al., 2025; Lastri, 2023). Yulihendri & Evanita (2023) explained that digital teaching materials not only facilitate students' access to information but also increase their active participation in learning activities. The effectiveness of digital teaching materials depends heavily on teachers' ability to design, develop, and implement them effectively (Khasanah et al., 2023; Kurniawan et al., 2022). Teachers need pedagogical, technological, and professional knowledge that supports technology-based learning (Kartikawati & Nurhasanah, 2024; Kurniawan et al., 2022; Yin et al., 2023). Therefore, training in the development of digital-based teaching materials is essential for improving teacher competence in the era of the industrial revolution.

Some previous studies have shown that teachers' perceptions of digital training still vary. Sopian & Tatang (2023) found that some teachers consider training in developing digital teaching materials necessary for increasing creativity and adaptability to technological changes. As for teachers who feel that the training is not really needed because they are used to using digital devices. Research by Lestari & Rahmawati (2025) emphasises that contextually designed, continuously updated training can increase teachers' confidence in utilising learning technology. Based on the results, Khasanah et al. (2023) Found That Digital teaching material training has been proven to increase the effectiveness and appeal of learning. Teachers who participated in the training reported significant benefits from learning about various digital tools and platforms and integrating them into the curriculum. However, not all teachers had a positive perception. Some argue that excessive emphasis on technology can distract the focus from fundamental aspects of learning (Maritsa et al., 2021; Putri, 2023; Subhan, 2023).

A similar phenomenon occurred at Madrasah Ibtidaiyah Unwanul Falah Nahdatul Wathon Paok Lombok, Indonesia, an Ibtidaiyah madrasah seeking to adapt to the development of educational technology. Some teachers have started using digital media, such as learning videos and interactive presentations. Most teachers face limitations in developing digital teaching materials independently due to a lack of training and technical support. This difference in perception is significant to study because teachers' perceptions affect their motivation, participation, and readiness to engage in training and to integrate technology into learning (Dallyono et al., 2022; Jannah et al., 2020).

Research has highlighted the importance of digital training for teachers, yet studies that specifically examine madrasah ibtidaiyah teachers' perceptions of digital teaching material

development training in local contexts, especially in Lombok, remain limited. Most previous studies have focused more on public schools or urban institutions with better access to technology. Therefore, this study has an urgent need to fill this gap by delving deeply into the perceptions of basic madrasah teachers at the Madrasah Ibtidaiyah Unwanul Falah Nahdatul Wathon Paok Lombok, Indonesia.

This research is based on the Technology Acceptance Model (TAM) developed by Davis (1989). This model explains that acceptance of technology is influenced by two main factors: perceived usefulness (perception of technology's usefulness) and perceived ease of use (perception of technology's ease of use). The TAM model in this study is used to understand how teachers' perceptions of the development of digital-based teaching materials, the factors that affect teachers' perception of the development of digital-based teaching materials, and the level of teachers' skills in the development of digital-based teaching materials in the Madrasah Ibtidaiyah Unwanul Falah Nahdatul Wathon Paok Lombok, Indonesia. This theoretical approach helps explain the relationships among perception, motivation, and teachers' skill levels in the context of technology-based education (Davis, 1989; Rosita & Fatmasari, 2023; Sari et al., 2020).

This research is expected to make a theoretical contribution in enriching the literature on the adoption of educational technology, as well as a practical contribution to the development of relevant and sustainable teacher training programs. Understanding teachers' perceptions, influencing factors, and skill levels can help educational institutions design more effective capacity-building strategies to support digital transformation in the madrasah environment.

2) METHODS

This study uses a field research method with a qualitative approach. This approach is used because it aims to understand phenomena in depth through direct interaction with the research subject in a natural context. This research focuses on efforts to explore teachers' perceptions of digital-based training in the development of teaching materials. The qualitative approach is appropriate because it can comprehensively describe the meaning, experience, and subjective views of teachers regarding the training (Creswell & Creswell., 2017). Thus, this research is expected to provide an in-depth understanding of the factors that affect teachers' perceptions and their implications for educators' professional development.

This research was conducted at Unwanul Falah Nahdatul Wathon Paok Lombok, Indonesia, an Islamic basic education institution seeking to integrate digital technology into the learning process.

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The subjects of this study are teachers at the madrasah. The researcher used a purposive sampling technique to determine the research participants. This technique is used because it enables researchers to select informants with characteristics relevant to the research objectives (Sugiyono, 2019). The participant criteria include teachers who have participated in training on developing digital teaching materials and those who have used digital media in learning activities. The total population consisted of 17 teachers, of whom seven were selected as the research sample. This number is considered sufficient to obtain in-depth data, in line with the characteristics of qualitative research, which emphasize depth of information over the number of respondents.

The data collection techniques in this study include in-depth interviews. Interviews were conducted semi-structurally to allow researchers to extract relevant information from participants. The interview guide is compiled to cover topics related to teachers' perceptions of the development of digital teaching materials, as well as the experiences and obstacles they face in applying digital technology.

The data were analyzed using thematic analysis. The analysis stage begins with transcribing the interview results, followed by coding to identify the main patterns and themes that emerge from the data. These themes are then categorized and interpreted to gain a comprehensive understanding of teachers' perceptions of training in the development of digital teaching materials. The researcher applies data triangulation to ensure the validity and credibility of the data, namely by comparing interview data with previous field/research records, thereby enhancing the research results' validity and reliability (Creswell & Creswell., 2017). This research is expected to provide a comprehensive and in-depth picture of teachers' perceptions at Madrasah Ibtidaiyah Unwanul Falah Nahdatul Wathon Paok Lombok, Indonesia, regarding the development of digital-based teaching materials.

3) RESULTS AND DISCUSSION

Teachers' Perception of the Development of Digital-Based Teaching Materials

Table 1: *Interview Results*

No.	Question	Answer
1.	Why does a teacher need to develop teaching materials according to the existing curriculum and according to the needs of their students?	So that learning is more effective, efficient, and does not deviate from the competencies it wants to achieve.

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2.	What do teachers know about digital-based learning?	The learning materials studied are more varied, not only in verbal form but also in text, visual, audio, and movement.
3.	Is digital literacy important for teachers to master?	Digital literacy is critical for prospective teachers to master, as they will be the spearhead of the educational process in an era of rapidly advancing technology. They must be able to maximise the use of digital technology, from preparing teaching materials to using digital platforms in the learning process.
4.	How important is the role of educational technology in the world of education in elementary education?	Strengthening human roles involves presenting information, tasks, or processes.
5.	What are some examples of digital learning used in the classroom?	PPT, learning videos, and Quizziz are often used in digital-based learning.
6.	How do teachers provide digital-based learning to students?	Blended learning is a form of digital learning that combines face-to-face and online instruction. In this learning strategy, online and traditional teaching and learning activities are alternated or conducted in a rotation system.
7.	Does digital-based learning help in learning and education?	Digital teaching materials are an important part of the student learning process, providing material that cannot be seen directly. For example, dances and getting to know objects that are not around students.
8.	How do teachers and students interact in the learning process using digital teaching materials?	Attractions are well intertwined and fun.
9.	Are teachers happy with the existence of digital teaching materials at school?	Teachers are thrilled because they can continue to learn technology.
10.	Do teachers feel helped by the existence of digital teaching materials?	Teachers are constructive because students can learn from various sources and understand the material more easily.

The results of the interviews show that teachers' perceptions of digital-based teaching material development training are fundamental. The development of digital teaching materials helps teachers explain material that cannot be seen directly, including dance material, and recognize objects that do not exist in students' immediate environment. Digital-based teaching materials can help increase teachers' motivation to create more varied materials, not only in verbal form but also in text, visual, audio, and movement formats. Digital literacy is critical for prospective teachers to master, as they will serve as facilitators in the educational process in an era of rapidly advancing technology. Teachers

must be able to maximize the use of digital technology, from preparing teaching materials to using digital platforms in the learning process.

These findings align with the opinion of Lastri, Yulihendri, and Evanita, (2023), who state that digital teaching materials strengthen student engagement and enhance learning effectiveness through an interactive multimedia approach. Teachers also emphasized the importance of digital literacy as the primary competency in the current era of educational technology (Anam et al., 2021; Jannah et al., 2020). This aligns with Eshet-Alkalai (2004) concept of digital literacy, which emphasizes that the ability to understand, evaluate, and use information through digital technology is an important skill of the 21st century (Anastasia & Pesha, 2022; Eshet-Alkalai, 2004; Sparks et al., 2016).

Teachers argue that educational technology plays a crucial role in strengthening educators' effectiveness. Teachers are still at the centre of designing, managing, and evaluating digital learning (Kartikawati & Nurhasanah, 2024; Lin & Johnson, 2021; Tirado-Morueta et al., 2022; Yin et al., 2023). Teachers use various digital media such as PowerPoint, learning videos, and the Quizziz application to increase learning interactivity (Eshet-Alkalai, 2004; Wulandari et al., 2022). Teachers also apply blended learning strategies as a blend of online and face-to-face learning, as suggested by Garrison and Vaughan (2008), who define blended learning as an approach that combines the advantages of traditional and online learning to achieve optimal effectiveness (Oliver, 2018; Picciano, 2019).

Factors That Affect Teacher Perception

Table 2: *Interview Results*

No.	Question	Answer
1.	How does the teacher's experience affect the development of digital-based learning?	Teachers' experiences greatly affect their ability to develop digital learning in the classroom. Because if they are inexperienced, teachers will have difficulty developing digital-based teaching materials.
2.	What are the motivational factors of teachers in developing digital-based teaching materials for students?	Teachers' motivation can affect their perceptions, as can motivation to improve performance. When teachers are not highly motivated, they are less likely to provide students with digital teaching materials.
3.	Do the facilities provided affect teachers in implementing digital-based teaching materials in the classroom?	Facilities greatly influence the implementation of digital-based learning in the classroom.
4.	Is the competence possessed by teachers a factor that affects the	Teacher competence significantly affects teachers' ability to develop digital-based teaching materials in the

	development of digital-based teaching materials in the classroom?	classroom, so teachers must be competent and able to do so.
5.	Does the teacher's ability to create teaching modules affect the digital-based learning process in the classroom?	Digital-based learning must be carried out in accordance with the established learning design and objectives. So, a teacher must create a teaching module that aligns with students' characteristics and needs.
6.	Does the information received by teachers affect the process of developing digital teaching materials carried out by teachers?	The information received by teachers significantly affects teachers' knowledge in developing digital-based teaching materials.
7.	Does the teacher's observation of student characteristics affect the development of digital-based teaching materials?	Analysis of student needs is important for teachers to develop digital teaching materials that suit students' needs.
8.	Does the evaluation of learning carried out by teachers affect the development of digital-based teaching materials?	The teacher's evaluation significantly affects students' understanding of the material. So that teachers can provide digital teaching materials better aligned with students' needs.
9.	Does the training provided to teachers affect the development of digital-based teaching materials carried out?	Training significantly affects teacher competence, so it is important to ensure that teachers have the knowledge and experience to develop digital teaching materials.
10.	Does the teacher's ability to create materials affect the development of digital-based teaching materials?	The teacher's ability to create material affects the development of digital teaching materials, as when teachers master their own material, it becomes easier to create digital materials tailored to students' needs.

The results of the interviews showed that teachers' perceptions of the development of digital-based teaching materials were influenced by several factors, including teaching experience, motivation, facilities available at the school, professional competence, ability to create teaching materials, and training followed. Teachers' experience in teaching has been shown to affect the level of comfort and skill in integrating technology in learning. Harahap et al. (2022) and Lawrence & Tar (2018), which explains that teachers' experience and confidence are key to the adoption of educational technology innovations.

Teacher motivation is a significant internal factor. Teachers who have high motivation tend to be more active in exploring various digital media to enrich learning (Edward C. et al., 2020; Syabrina et al., 2025). The facilities provided by the school include computers, projectors, and internet access, as well as external factors that support the use of digital teaching materials (Khasanah et al., 2023;

Kurniawan et al., 2022; Lastri, 2023; Sopian & Tatang, 2023). This is reinforced by Marliya et al. (2020) who state that the availability of adequate facilities and infrastructure greatly influences the success of digital learning.

Training and improving teacher competence are also important elements in forming a positive perception of digital teaching materials. Research by Anastasia & Pesha (2022) and (Kartikawati & Nurhasanah (2024) shows that educational technology training directly improves teachers' ability to design and implement digital learning media. Thus, teachers' perceptions are influenced by complex interactions among personal, professional, and institutional factors that reinforce one another in the context of digital learning

Teacher Skill Level in Digital Teaching Material Development

Table 3: *Interview Results*

No.	Question	Answer
1.	How do students respond to the learning carried out?	Students are thrilled and find it easier to understand the material
2.	What are the problems of digital learning in schools for teachers?	Some teachers have not mastered digital media
3.	What are the solutions to the obstacles faced?	Teachers participate in digital-based learning training to develop teacher competencies
4.	What is the teacher's level of understanding before conducting digital teaching material training?	There are still teachers who use non-digital teaching materials
5.	What is the level of teachers' understanding after training on digital teaching materials?	Most teachers have mastered the knowledge to develop digital-based teaching materials.
6.	How do teachers provide digital-based learning for students?	The teacher prepares PowerPoint presentations and projectors in the classroom to show to students
7.	How can teachers attract students' interest in learning with digital-based learning?	Does the teacher provide engaging, student-centred material that aligns with students' needs?
8.	How can collaboration between teachers improve the quality of digital-based learning?	Teachers have discussions with other classroom teachers to create learning media and interesting digital teaching materials
9.	What is the learning condition of students using digital media created by teachers?	Students are enthusiastic about and actively study digital media in the learning process.

10.	Do teachers feel helped by the training of digital teaching materials?	Teachers are constructive because they can improve their knowledge and skills in developing digital-based teaching materials in schools.
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The results showed that most teachers had a good level of skill in developing digital teaching materials after participating in the school's training. Some teachers still use non-digital teaching materials before training, and after training, they have a better ability to design, modify, and integrate digital media into learning. Teachers are also starting to collaborate through discussions and the sharing of best practices to create digital teaching materials that are relevant to students' needs.

Maritsa et al. (2021) and Putri (2023) state that teaching experience, technology support, and professional development have an important role in determining the level of technology utilisation in learning. Teachers who are actively involved in professional training and collaboration show significant improvements in their digital literacy and pedagogical abilities (Anastasia & Pesha, 2022; Kartikawati & Nurhasanah, 2024). Fitriah et al. (2025) and Lastri (2023) emphasised that the development of learning media must be tailored to students' characteristics and needs. Teachers create a more meaningful and engaging learning experience when they adapt digital teaching materials to the context of elementary school students (Eshet-Alkalai, 2004; Harahap et al., 2022; Lin & Johnson, 2021). This is also in line with the theory of learning motivation put forward by Deci & Ryan (1985) and Hauck (2016) which holds that learning media that are interesting and in accordance with students' interests can increase learning motivation and active involvement in the learning process.

The results of this study show that adequate training and facility support can improve teachers' skills in developing digital teaching materials. With the development of these skills, teachers can create a learning process that is more effective, interactive, and aligned with the demands of the 21st century (Anastasia & Pesha, 2022; Kartikawati & Nurhasanah, 2024).

4) CONCLUSIONS

This study concludes that the perception of teachers at Madrasah Ibtidaiyah Unwanul Falah Nahdatul Wathon Paok Lombok, Indonesia, towards digital-based teaching material development training is in the positive and constructive category. Teachers understand the importance of mastering digital literacy as the primary competency that supports their professionalism in the era of educational transformation. Digital teaching materials can increase learning effectiveness, facilitate more dynamic

interaction between teachers and students, and enrich the variety of learning media by combining text, visuals, audio, and interactivity.

Factors that affect teacher perception include teaching experience, professional motivation, availability of facilities, technological competence, training attended, and institutional support. Teachers with greater experience and higher motivation are better prepared to integrate technology into the learning process. Needs-based and ongoing training has proven to play an important role in building teachers' competencies to develop digital teaching materials effectively.

Teachers' skill levels improved significantly after participating in the training. Most teachers have been able to design and implement digital teaching materials using various platforms and modern learning media. Collaboration among teachers also enriches digital teaching practices and accelerates technological adaptation in the madrasah environment.

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