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Teachers' Perception of Digitization of Mathematics Learning at Madrasah Aliyah Muhammadiyah Watulimo Trenggalek

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Abstract. *Digitization of learning as a form of innovation requires adaptation and acceptance from teachers. Teacher perception is a key factor in determining the success of this innovation's implementation in schools. This study aims to describe the implementation of digitization in mathematics learning and teachers' perceptions of digitization in learning at Madrasah Aliyah Muhammadiyah (MAM) Watulimo Trenggalek. This study uses a descriptive qualitative approach. Data were collected through interviews, observations, and documentation, and tested for validity through triangulation. The results of the study show that the digitization of mathematics learning at MAM Watulimo has been applied comprehensively across the planning, implementation, and evaluation stages of learning. The number of classes supports this implementation in line with standards, the availability of digital devices, adequate madrasah facilities, and teacher collaboration. Teachers' perceptions of the digitization of mathematics learning are generally positive. Teachers assessed that this innovation offers relative advantages, such as increased efficiency, easier access to materials, and a variety of learning methods. In terms of compatibility, teachers feel that digitalization aligns with professional values and the needs of today's students. However, there is still a negative perception of the complexity, especially regarding the constraints of using technology by teachers who are not familiar with digital devices.*

Keywords: *Digitalization, Mathematics Learning, Teacher Perception*

INTRODUCTION

The development of digital technology has brought significant changes across various aspects of life, including education (Ghofur & Rachma, 2021). Digitization of learning is an innovation that leverages technology as an integral part of the teaching and learning process (Gumelar & Dinnur, 2020). In a competitive global era, digital skills are not only an added value but a necessity for students to adapt and compete (Lestari, 2018). Digitalization also demands that teachers be professional in adapting teaching methods and materials to the times (Stuart et al., 2020).

Since the advent of the Industrial Revolution 4.0, the integration of technology and the internet has become increasingly widespread and pervasive (Savitri, 2019). So that the challenges and opportunities of Industry 4.0 encourage innovation and educational creation (Triayomi et al., 2024). The global pandemic has accelerated digital transformation across sectors, including education. This change has a direct impact on teachers, who are required to adapt socially and technically. 21st-century teachers must be creative and innovative in designing technology-based learning to make the learning process more effective and quality (Stuart et al., 2020). The use of technology in learning is also in line with the National Education Decree No. 16 of 2007, which emphasizes the importance of pedagogic competence in the use of ICT (Kemendikbud, 2017).

The digitalization of education is now attracting increasing attention, in line with the rapid advancement of information and communication technology (Aslan & Shiong, 2023; Triayomi et al., 2024). Technology requires teachers to implement a digitalized teaching pattern (Ghofur & Rachma, 2021). Various approaches have been developed to support the digitalization of learning, ranging from infrastructure and teacher training to the development of interactive digital media. Previous studies have not shown that digitizing learning increases its attractiveness and effectiveness. In line with research (Triayomi et al., 2024), the use of electronic devices, applications, and online platforms opens up more interactive, flexible, and engaging learning opportunities. However, most research still focuses on the technical aspects or implementation of digitalization, while in-depth studies of teachers' perceptions as the main actors in the change process remain limited.

Perception is a process that begins with the use of the five senses to receive stimuli, then organizes and interprets them so that they have an understanding of what is sensed (Nugroho, 2012). Teachers' perceptions can reflect attitudes and behaviors shaped by the results of their observations. Some teachers believe that technology can increase the effectiveness and creativity of teaching, while others still face resource and skill limitations (Triayomi et al., 2024).

Based on data from the national socio-economic survey (Susenas) in the 2021-2024 education statistics, as shown in Table 1, the number of students using

mobile phones and the internet has increased over the past four years. In particular, the percentage of internet users at the high school level/equivalent has increased consistently, from 85.52% in 2021 to 88.72% in 2022, 91.01% in 2023, and reaching 97.03% in 2024.

Table 1. Percentage of Students Using ICT by Education Level in 2021-2024

ICT Criteria	Percentage of Students			
	Year 2021	Year 2022	Year 2023	Year 2024
Mobile Phone Users				
Elementary/equivalent	46,91	54,13	63,29	77,77
Junior High School/Equivalent	81,72	82,90	85,97	93,17
High School/equivalent	94,05	94,65	95,49	97,36
College	98,36	98,20	98,06	98,73
Internet Users				
Elementary/equivalent	11,64	26,71	35,97	82,35
Junior High School/Equivalent	62,77	69,18	73,40	92,77
High School/equivalent	85,52	88,72	91,01	97,03
College	94,41	95,48	95,30	98,69

The main limitation of previous research is the lack of understanding of how teachers interpret, accept, and respond to the digitalization of learning in particular social and cultural contexts, especially in non-urban areas. In fact, the success of technology implementation in learning depends not only on the availability of infrastructure but also on individual readiness, including teachers' perceptions of these innovations (Zamal et al., n.d.). In line with the theory of diffusion of innovation (Rogers et al., 2014), individual perceptions of an innovation's characteristics greatly determine the level of adoption. The rapid development of technology needs to be accompanied by a greater ability among teachers and students to use it. These technological advances also affect learning patterns, whose changes are highly dependent on teachers' roles, especially in the context of educational digitalization (Triayomi et al., 2024).

This research was carried out to fill this gap by raising awareness of Madrasah Aliyah Muhammadiyah (MAM) Watulimo Trenggalek, the only Madrasah Aliyah in the sub-district. Although digital facilities are available, the main challenge remains the readiness and perceptions of teachers to optimize digital learning. The

novelty of this research lies in its focus on describing the implementation of digitization in mathematics learning and teacher perceptions, especially in local community-based madrasas that are trying to adapt to the digital transformation of education. This study does not specifically examine mathematics, as its primary focus is the implementation of digitization in mathematics learning and teachers' perceptions of digital learning and mathematics materials. The purpose of this study is to describe the implementation of learning digitization at MAM Watulimo Trenggalek and to examine teachers' perceptions of learning digitization.

RESEARCH METHODS

This research is a field *study because it is conducted* directly at the research site. Based on the level of naturalness, this researcher uses naturalistic field situations, which involve researching natural settings in the field rather than in the laboratory (artificial settings). (Huberman & Miles, 1992) The approach in this study is descriptive qualitative. The research subject is a data source whose information is sought to address the research problem. In this study, the data came from two sources: primary and secondary. The primary data source in this study is 3 MAM Watulimo teachers, selected because they were directly involved in the digitization of mathematics learning activities and were selected as objects of observation. The following is a list of research subjects.

Table 2. List of Research Subjects

No.	Teacher's Initials Name	Subject Code
1.	RIH, S.Pd.	SR
2.	UHS, S.Pd	SU
3.	THAS, S.Pd.	ST

The three teachers are senior educators with extensive experience in teaching and learning in madrasas and strong communication skills. Meanwhile, secondary data sources in this study include books, articles, and documentation related to the research. This study does not specifically examine mathematics materials, as the main focus is on the process of digitizing learning and teachers' perceptions of its application. This research was carried out at MAM Watulimo Trenggalek, located in Gemaharjo Village, Watulimo District, Trenggalek Regency, East Java Province,

for two months, namely May – June 2025, during the even semester of the 2024/2025 school year. The instruments of this research are observation, interviews, and documentation.

The data collection technique in this study is for the researcher, acting as the main instrument, to collect data through observation, interviews, and documentation. The data analysis in this study uses techniques and steps, namely data collection, data reduction, data presentation, and drawing conclusions or verification. To analyze and validate the data, triangulation of data collection techniques and data sources is used. (Huberman & Miles, 1992)

RESULTS AND DISCUSSION

Madrasah Aliyah Muhammadiyah (MAM) Watulimo Trenggalek is a private educational institution under the auspices of the Muhammadiyah Branch Executive. This madrasah continues to strive to adapt to technological developments in the learning process. Based on interviews with the madrasah's head, the digital infrastructure facilities are considered quite adequate, though not optimal. With a total of 20 teachers and 125 students, this madrasah is an example of a local, community-based educational institution transforming towards digital learning.

To reveal teachers' perceptions of the digitization of mathematics learning, the researcher developed instruments: observation and interview guidelines. The initial step in collecting this data was the provision of observation sheets, followed by in-depth interviews with mathematics teachers directly involved in the digitization process. The results of the questionnaire and interviews aim to understand teachers' perceptions of the digitization of mathematics learning.

The observation indicators in this study include infrastructure facilities and digital devices, and their use to collect data on the implementation of digital education in madrasas, as shown in Table 3.

Table 3. Research Observation Indicators

No.	Observation Aspect	Observed Indicators
A.	Availability and Functionality of Digital Infrastructure	
	1.Hardware	- Device availability - Physical condition (good, damaged) - Functionality (works fine, there is a problem) - Technological novelty
	2.Internet Network	- Availability (Wi-Fi, cable) - Signal stability - Access speed - Ability to support classroom activities
	3.Software/ Applications	- Availability (installed, accessible) - Relevance to learning objectives - User-friendly - License/access
B.	The Role of Teachers in Digitizing Learning	
	1.Technology Utilization	- How do teachers integrate technology into lesson plans/learning scenarios? - Is technology used as a tool or the core of learning? - Variations of use (presentations, simulations, interactive quizzes, research, online collaboration)
	2.Teacher Competence and Confidence	- The level of mastery of the technology used - Ability to solve technical problems - Teachers' confidence in managing digital learning - Providing instruction in the use of technology to students
	3.Pedagogical Innovation	- Whether technology is being used for new learning methods - Are there any efforts to personalize learning with technology? - Leveraging data from the app for feedback/assessment?
C.	Student Participation and Experience	
	1.Student Engagement	- Students' level of enthusiasm and participation in digital activities - Student focus during the use of digital devices - Students' interaction with technology and fellow students/teachers through technology
	2.Students' Digital Skills	- Students' ability to operate devices/applications - Ability to search and process digital information - Ability to collaborate digitally
	3.Challenges Students Face	- Technical difficulties experienced by students - Access/ability gap between students - Distractions due to the use of digital devices

The interview guidelines, comprising nine questions, covered each component of the innovation characteristics of the Innovation Diffusion Theory — relative advantage, compatibility, and complexity — each with three open-ended questions in this study. These can be seen in Table 4.

Table 4. Interview Guidelines Based on Innovation Diffusion Theory by Everett M. Rogers (2014)

No.	Everett M. Rogers' Diffusion Theory of Innovation	Question
1.	The relative advantage of how an innovation can be said to be better or not better than the previous innovation	1. What forms of digitization in education at this madrasah do you know?
		2. What are the benefits that you feel from digitizing education?
		3. How can the digitization of education make it easier for you to deliver material?
2.	The harmony of how an innovation can be in accordance with the circumstances, culture, and values of the society itself	4. Do you support/are you comfortable with the digitalization of education?
		5. What are the forms of digitalization of education that you like?
		6. How is the implementation of education digitalization compatible with your expectations?
3.	Complexity is the level at which an innovation is considered complex, making it relatively more difficult for a person to understand and use.	7. What are the problems/obstacles that you face in the implementation of Digitizing Education?
		8. How do madrasas support the digitalization of education?
		9. What are your efforts to overcome challenges in implementing digital education?

Based on the observation results, the digitalization of learning at MAM Watulimo has strategic value in improving the effectiveness and quality of mathematics teaching. In addition to describing the real conditions in regional madrasas, these findings provide an overview of teachers' readiness and the challenges they face in responding to the transformation of digital education in the madrasah environment. The implementation of digitization in mathematics learning at MAM Watulimo Trenggalek received support in terms of adequate facilities and infrastructure. The observation results show that the teacher's room, madrasah head's room, TU room, classroom, and computer laboratory have been equipped with digitalization-supporting facilities, including internet networks (Wi-Fi and cellular data), electricity networks, natural and artificial lighting, and air circulation.

The classroom is even equipped with a fan for learning comfort. This study is comparable to that of developed countries, showing that infrastructure problems tend to be relatively small, but challenges related to curriculum integration and development remain relevant (Binothman et al., 2024; Stapleton, 2011).

Figure 1. Teachers perform Grade Input in RDM

Teachers are seen actively using digital devices such as laptops and smartphones in the preparation, implementation, and evaluation of learning, including entering grades through the Madrasah Digital Report (RDM) application. The use of RDM is constructive for teachers and educational units in compiling reports on student competency achievement, so that it can make work easier (Hida, 2022). Interaction and collaboration between teachers are also seen in this process. On the other hand, some teachers still experience obstacles in using technology and are assisted by administrative staff. Computer laboratories are used at certain times to support digital activities by both teachers and students. The madrasah's inventory includes digital devices such as computers, printers, laptops, LCD projectors, and loudspeakers, scattered across various rooms. These devices were obtained from BOS funds and assistance from the Ministry of Religious Affairs, thereby further strengthening the implementation of the digitization of madrasah learning. An important first step is to provide hardware and software aligned with the madrasah's budget and that support the educational process (P. N. Sari & Miyono, 2023).

The researcher selected three teachers from Madrasah Aliyah Muhammadiyah (MAM) Watulimo as interview subjects, each assigned the initials R (first speaker), U (second speaker), and T (third speaker) to maintain the confidentiality of the speakers' identities. The three teachers are senior educators with extensive experience in teaching and learning at the madrasah. In this study,

the researcher selected three components of the innovation diffusion theory based on preliminary observations indicating that these components were the most prominent and had the most significant influence on shaping teachers' perceptions of digitalization. The three components in question are relative *advantage*, compatibility, and complexity.

The following is an excerpt from interviews with the subject exploring teachers' perceptions of the digitization of mathematics learning, drawing on the characteristics of Rogers's (2013) innovation: relative advantage, compati*bility*, and *complexity*.

1. Relative advantage component

This component examines the extent to which digitalization in mathematics learning is considered superior to previous methods.

Resource person 1

P : What do you think is meant by the digitization of mathematics learning?
SR : Using MS Office, such as PPT and others, Zoom Meeting, WAG, GeoGebra, and RDM
P : What are the benefits that you feel from the digitalization of education?
SR : Delivering material to students becomes more interesting and provides learning materials that are delivered when learning becomes more mature.
P : With digitalization, delivering material is aided by numerous references to teaching materials, and the insights become broader.
SR : With digitalization, delivering material is aided by numerous references to teaching materials, and the insights become broader.

Resource person 2

P : What do you think is meant by the digitization of mathematics learning?
SU : Using PowerPoint in learning, RDM, WA, Zoom Meeting, Google Classroom, Google Meet, Chrome
P : What are the benefits that you feel from the digitalization of education?
SU : Not everything can be presented concretely in the classroom, so showing pictures/videos cannot only make children more interested but also help them imagine lessons.
P : With digitalization, delivering material is aided by numerous references to teaching materials, and the insights become broader.
SU : Not everything can be presented concretely in the classroom, so showing pictures/videos cannot only make children more interested but also help them imagine lessons.

Resource person 3

P : What do you think is meant by the digitization of mathematics learning?

ST : Using PowerPoint in learning, RDM, WA, Zoom Meeting, Google Classroom, Google Meet, Chrome
P : What are the benefits that you feel from the digitalization of education?
ST : Not everything can be presented concretely in the classroom, so showing pictures/videos cannot only make children more interested but also help them imagine lessons.
P : With digitalization, delivering material is aided by numerous references to teaching materials, and the insights become broader.
ST : Not everything can be presented concretely in the classroom, so showing pictures/videos cannot only make children more interested but also help them imagine lessons.

The results of interviews with the research subjects of the digitization of mathematics learning are mainly applied in teaching and learning activities (KBM). Each teacher uses more than one digital platform, and in total, seven types are commonly used in KBM activities in the madrasah. Such as Microsoft PowerPoint for material delivery, Word and Excel for lesson plans and grade management, as well as Google Classroom, Google Meet, Google Forms, YouTube, and Zoom meetings for class management, video conferencing, and evaluation. WhatsApp is used for communication with teachers and guardians. Geogebra supports interactive mathematics learning, word walls make it easier to create learning media, and Madrasah Digital Report Cards (RDM) are used to input students' grades and descriptions digitally. Due to the diversity of students' abilities, teachers are required to be more responsive in creating learning experiences that are interesting, interactive, and in accordance with the needs of each individual (Sekar Anggraini et al., 2024). Research (2023) Found That Teachers' positive perceptions of the use of technology in today's learning are important factors that can encourage the success of the teaching and learning process.

The research subjects view that the digitization of mathematics learning provides relative advantages. The subject stated that digitalization makes it easier to deliver material, expands access to teaching materials, and supports more mature mastery of the material. The use of digital tools also helps teachers create documents such as lesson plans, syllabi, and RDM. So, time efficiency increases. From the student side, digitalization can increase motivation to meet the year's desires through image/video media, as well as expand learning resources and

interactive experiences. This aligns with the research by Syifa & Julia (2023). Students show high enthusiasm for technology-based learning because it is considered more interesting. Broadly speaking, teachers' perceptions of relative advantage digitalization include (a) increased access and flexibility enabling learning anytime and anywhere; (b) resource efficiency, both time and cost; (c) higher quality and interactivity of learning through multimedia and content adaptation; (d) student collaboration and engagement facilities, creating a more dynamic and participatory learning environment. Teachers' positive perceptions of this innovation contribute significantly to improving classroom learning quality (Syifa & Julia, 2023).

2. Compatibility Components

This component measures the extent to which digitalization innovations for learning are in line with the conditions, culture, and values in madrasas.

Resource person 1

P : Do you support/are you comfortable with the digitalization of education?
SR : Supports once
P : Which forms of digital education do you like?
SR : Using Geogebra
P : How suitable is the implementation of digitizing education with the hope of Mom?
SR : The implementation of digital education in madrasas is appropriate, with the hope that all teachers will be able to take advantage of it.

Resource person 2

P : Do you support/are you comfortable with the digitalization of education?
SU : Yes, I am very supportive.
P : Which forms of digital education do you like?
SU : I often use PPT to convey material.
P : How suitable is the implementation of Digitizing education with the hope of Mom?
SU : It is used appropriately. Hopefully, in the future, it will be even better.

Resource person 3

P : Do you support/are you comfortable with the digitalization of education?
ST : Yes, I am very supportive.
P : Which forms of digital education do you like?
ST : I often use PPT to convey material.
P : How suitable is the implementation of digitizing education with the hope of Mom?
ST : It is appropriate because the digitalization of education indirectly equips children with digital skills that they will later need in an increasingly modern world.

In terms of compatibility, it is quite diverse, ranging from feeling very appropriate to less appropriate. Some teachers provided additional notes related to future implementation. Even so, all speakers agreed to support the implementation of digitalization in education. They consider digitalization important for equipping students with 21st-century relevant digital skills. In general, teachers see a high level of alignment between digitalization innovations in learning and the values of teacher professionalism and the needs of today's students. In line with research by Susianita & Riani (2024), in the world of education, demand to improve learning quality is increasing, along with students' need for 21st-century competencies.

3. Complexity Component

This component assesses the level of complexity of an innovation, so that it is relatively more difficult for a person to understand and use.

Resource person 1

P : What are the problems/obstacles that you face in the implementation of digital education digitalization?
R : Seeing the situation of madrassas that do not prohibit students from bringing mobile phones to school, but where no students use them, makes me hesitant to encourage students to use digital devices in learning.
P : How does Madrasah Support the Digitalization of Education?
R : Madrasas have made it easier in terms of infrastructure, but unfortunately, some of my fellow teachers, I think, still consider digitalization complicated.
P : What are your efforts to overcome challenges in implementing digital education?
R : A lot more training is needed. Embracing fellow teachers, working together to improve the quality of learning

Resource person 2

P : What are the problems/obstacles that you face in the implementation of digital education digitalization?
U : Because I use it to attract children's attention, some confident children still neglect lessons, so not all students can achieve the expected learning goals.
P : How does Madrasah Support and Mother's View of Digitalization of Education?
U : Very supportive, even the facilities and infrastructure have been prepared, and teachers also help each other, only in terms of furu ability is not optimal
P : What are your efforts to overcome challenges in implementing digital education?
U : Evaluate yourself and determine which methods are appropriate for students.

Resource person 3

P : What are the problems/obstacles that you face in the implementation of digital education digitalization?
T : There is still an assumption among parents of students that using smartphones is a negative thing.
P : How does Madrasah Support and Mother's View of Digitalization of Education?
T : Very supportive, even the facilities and infrastructure have been prepared, and teachers also help each other, only in terms of furu ability is not optimal
P : What are your efforts to overcome challenges in implementing digital education?
T : Evaluate yourself and determine which methods are appropriate for students.

However, in terms of complexity, several obstacles include limited teachers' ability to use digital devices, a lack of socialization from the madrasah, and internal policies that are not fully supportive. Even so, the support of infrastructure and a collaborative culture among teachers are important supports in addressing these challenges. In this case, teachers need additional training to manage technology-based learning more effectively (Syifa & Julia, 2023). This is reinforced by research by Jenita et al. (2023), which shows that training increases teachers' understanding of the use and utilization of technology in teaching and learning activities. Technology training plays an important role in teachers' digital literacy levels (Sudarsih, 2025).

The following is a brief analysis of data from interviews, observations, and documentation on the digitization of mathematics learning at MAM Watulimo Trenggalek.

1. Implementation of Digitization of Mathematics Learning at MAM Watulimo Trenggalek

There are seven digital platforms with different levels of popularity and features at MAM Watulimo Trenggalek. This difference affects the way each platform is used to support math learning. The digitization of madrasah education is explicitly applied in the implementation of mathematics learning. The digitization of mathematics learning at MAM Watulimo Trenggalek is implemented through the three components of the theory of innovation diffusion: planning, implementation, and evaluation. At the planning stage of mathematics learning,

teachers use *search engines such as Google Search and YouTube to find references for lesson plans, learning methods, and KI and KD resources from the Ministry of Education and Culture's website, and compile them in Microsoft Word*. During the implementation of mathematics instruction, teachers use the GeoGebra platform to present mathematics interactively, integrating algebra and geometry through problem-solving. *PowerPoint* and projectors are also used to clarify the material and make students more visually interested. This aligns with research (Bay et al., 2021) indicating that the use of Microsoft PowerPoint can improve student learning outcomes, enabling the achievement of learning goals. Visual delivery of information through *PowerPoint* makes it easier for students to understand and absorb the material, and it makes it easier for educators to explain the material practically. In line with research, Rahmatullah et al. (2020) Found That Learning media with audio-visual displays has proven effective in supporting learning activities in the classroom. These findings show that technology can help students and teachers develop independent attitudes and active learning (Depite, 2024).

Meanwhile, during the learning evaluation stage, daily assessments are conducted via Google Forms, GeoGebra, or Word Wall, and shared via email with parents' help. Value processing is done automatically using *Excel* or *Google Form*s, similar to the RDM system, to generate report cards. Although the madrasah uses a variety of digital platforms, none of the speakers mentioned the Independent Teaching Platform, which the Ministry of Education and Culture often promotes. This platform is designed as a companion for teachers and principals in teaching, learning, and working, and is already available on the Play S*tore* and can be accessed through the website (A. S. L. Sari et al., 2022). These results are in accordance with the research by Darmayanti et al. (2024), which found that the use of technology can facilitate interactive and collaborative learning in the classroom.

2. Perception of MAM Teacher Watulimo Trenggalek on the Digitalization of Mathematics Learning

The perception of MAM teacher Watulimo Trenggalek towards the digitization of mathematics learning is broadly explained in 3 aspects of discussion, based on the characteristics of innovation from Rogers' innovation diffusion theory:

relative advantage, compatibility, and complexity. In terms of relative profitability (*Relative Advantage*), resource persons reported significant benefits, such as ease in delivering mathematics, variety of teaching methods, ease of creating learning documents such as madrasah digital report cards (RDM), expansion of student learning resources through the internet and visual media, and increased student learning motivation. In terms of *Compatibility, the perception of the speakers varied from very appropriate to not appropriate depending on their respective values, experiences, and needs;* however, all of them still supported the implementation of digitalization. An innovation may have been known to someone a long time ago (i.e., when he was familiar with the idea), but has not yet developed an attitude toward accepting or rejecting it (Rusdiana, 2014). Meanwhile, in terms of complexity, the resource person also revealed that there are obstacles to the use of technology, showing that although digitalization provides many benefits, adaptation and skill development are still needed to ensure optimal use. (2024), schools need to work with teachers and parents on an ongoing basis to ensure the use of technology is on target. Taufiqurrahman (2022) also states that effective synergy enables technology to be used optimally to support the learning process and learning quality. This step is important to ensure that all teachers, both new and experienced, can make optimal use of technology to enhance learning quality (Firmadani, 2021; Sudarsih, 2025).

CONCLUSION

Based on the results of the research on the perception of MAM Watulimo Trenggalek teachers towards the digitization of mathematics learning based on findings in the field, it can be concluded that the implementation of digitization of mathematics learning in the implementation of the learning process at MAM Watulimo Trenggalek has been implemented in real terms in the planning stage, implementation stage, and learning evaluation stage. The digitization of mathematics learning in madrasas is supported by improved infrastructure, including the number of classes meeting standards, the availability of digital madrasah inventory devices, complete madrasah facilities, and harmonious teacher

cooperation. Based on its characteristics, the digitization of mathematics learning elicits diverse perceptions from each resource person; positive perceptions are obtained from all resource persons regarding *the relative advantage* of digitizing mathematics learning. As for *the compatibility of digitization in mathematics learning, some perceive it positively, while others perceive it* negatively. There is still a perception of the source material regarding its characteristics.

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