

TECHNOLOGY READINESS OF MADRASAH IBTIDAIYAH TEACHERS IN THE LEARNING PROCESS

Dian Hidayati^{1*}, Nurhikmah², Shofia Noor Wachidatur Rochmah³

^{1,2,3}Universitas Ahmad Dahlan

¹dian.hidayati@mp.uad.ac.id

Abstract

The readiness of teachers to use technology plays a vital role, so the use of learning technology must be designed as well as possible. Some problems occur when teachers are still not ready to use technology, and the use of the internet or technology has not been implemented optimally by teachers. Teacher readiness in teaching also needs to be improved, especially regarding learning technology to design subject matter to make it more attractive to improve the quality of education, which is the main agenda in improving the quality of MI (Madrasah Ibtidaiyah) to compete in the current era. global era. In addition, teachers must be more creative in learning and increase their readiness to utilize learning technology. However, not all schools can use technology due to limited infrastructure. The use of technology in schools will be optimal if equipped with adequate facilities so that students and teachers can access various learning resources. For this reason, this study aims to determine teacher readiness in using and utilizing learning technology to achieve learning goals in MI Pekat District, West Nusa Tenggara. This study used qualitative research methods. Data collection techniques include observation, interviews, and documentation. At the same time, processing data using qualitative methods systematically. The results of the study found that 1) there was teacher readiness in utilizing technology, but some teachers lacked knowledge about the use of technology, 2) the teacher's attitude towards the use of technology in learning was still not optimal, 3) lack of supporting facilities and infrastructure. From the results of this study, it can be concluded that it is crucial to analyze the technological readiness of teachers in utilizing learning technology, investigate attitudes toward using technology in learning, and examine the actual conditions in schools in utilizing technology. If this is analyzed and observed, the weaknesses and strengths regarding technological readiness in schools will be known, which will be used as a reference for future improvements.

Keywords: attitude to using technology; learning; teacher readiness; utilization of technology

Abstrak

Kesiapan guru dalam menggunakan teknologi memegang peranan penting, sehingga pemanfaatan teknologi pembelajaran memang harus dirancang sebaik mungkin. Namun, terdapat guru yang belum siap dalam menggunakan teknologi. Kesiapan guru dalam mengajar menggunakan teknologi perlu ditingkatkan untuk merancang materi pelajaran agar lebih menarik untuk meningkatkan mutu pendidikan yang menjadi agenda utama dalam meningkatkan mutu MI (Madrasah Ibtidaiyah) untuk bersaing di era sekarang. Guru juga harus lebih kreatif dalam melaksanakan pembelajaran dan meningkatkan kesiapannya dalam memanfaatkan teknologi pembelajaran. Namun, tidak semua sekolah bisa menggunakan teknologi karena keterbatasan infrastruktur. Pemanfaatan teknologi di sekolah akan optimal jika dilengkapi dengan fasilitas yang memadai agar dapat digunakan untuk mengakses berbagai sumber belajar. Penelitian ini bertujuan untuk mengetahui kesiapan guru dalam memanfaatkan teknologi pembelajaran untuk mencapai tujuan pembelajaran di MI Kecamatan Pekat Nusa Tenggara Barat. Penelitian ini menggunakan metode penelitian kualitatif. Teknik pengumpulan data meliputi observasi, wawancara, dan dokumentasi. Data diolah menggunakan metode kualitatif secara sistematis. Hasil penelitian menemukan bahwa terdapat kesiapan guru dalam memanfaatkan teknologi, namun beberapa guru kurang memiliki pengetahuan dan sikap mengenai penggunaan teknologi yang belum optimal, kurangnya sarana yang mendukung. Jika menganalisis kesiapan teknologi, sikap guru, serta kondisi aktual, maka akan diketahui kekurangan dan kelebihan kesiapan teknologi di sekolah, sebagai acuan dalam perbaikan kedepannya.

Kata Kunci: kesiapan guru; pemanfaatan teknologi; pembelajaran; sikap menggunakan teknologi

Received : 2023-05-04

Approved : 2023-07-10

Revised : 2023-07-06

Published : 2023-07-31



Jurnal Cakrawala Pendas is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Introduction

The development of science and technology is increasingly encouraging efforts to renew and utilize the results of technology in the learning process. Thus, the community is needed to further improve their abilities and potential in today's modern times, especially teachers (Mulyani & Haliza, 2021). To become a teacher, readiness in teaching is undoubtedly required (Adri et al., 2020). The readiness of teachers to face the distance learning process also determines the success of students' learning (Jalal, 2020). Since the learning provided by the teacher plays an essential role in providing support and motivation to participate in learning activities so that students become knowledgeable and skilled (Sukmawati, 2019), along with the times, the teacher's readiness to face increasingly advanced technological developments as much as possible can provide solutions to overcome existing problems (Aspi & Syahrani, 2022). It can be realized if it is supported by the teachers' ability and readiness to operate technology and implement technology as a learning medium. However, some problems occur, namely the use of technology that has not been maximally carried out by teachers, such as the research results, which found that in various regions, there are still teachers who cannot operate technology in learning. (Rohartati, 2022).

To realize this, technology utilization in the learning process is needed to enhance student learning (Ismaniati, 2013). Learning technology can be used to support online learning (Riasatul et al., 2020). However, with current technological developments, teachers and students have not been able to use it properly, even though the government continues to support and evenly distribute telecommunications network infrastructure development. This is in accordance with research (Churiyah et al., 2020) which states that the government has provided a platform that all levels of education can use, but this platform is underutilized because individual abilities are still low in using technology. Human resources are not ready to use information and communication technology in learning (Widianto et al., 2021). In learning, all these opportunities have also not been optimally utilized to improve the quality of education and student competence. In addition, the e-learning implementation in schools could run well in some areas of West Nusa Tenggara, but in Pekat Sub-district, internet usage was still very low even though the network in some villages has been fulfilled. As Wahyudiyono (2016) stated, in West Nusa Tenggara, internet usage was relatively low compared to other provinces in Indonesia.

Conversely, a teacher must be able to change to create quality students since the teacher is the primary actor in learning success; thus, they need to understand digital technology. Digital tools can expand and enhance the ability of teachers to fulfill various roles and responsibilities (Smaldino et al., 2019). By utilizing technological tools, all work will be assisted and more accessible, faster, more thorough, and more efficient (Danuri, 2019). Teachers can also design various learning media. In addition, one of the factors influencing students' interest in learning is how the teacher teaches (Hastuti et al., 2018). Various online learning technologies, such as online discussion forums and material access, enable communication between students and teachers. The integration of e-learning can also provide support for asynchronous and cooperative learning among students and teachers (Geng et al., 2019; Damuri et al., 2021; Kim, 2020). However, this opportunity has not been appropriately utilized by MI (Madrasah Ibtidaiyah) teachers because various obstacles were found, including uneven infrastructure, inadequate facilities and infrastructure, and the lack of

teacher knowledge regarding the utilization of learning technology. Educational institutions must provide complete facilities and infrastructure that support teachers in using technology so that teachers can use technology in the learning process and take advantage of available online discussion forums. This is in accordance with the statement (Rohman & Susilo (2019) that providing facilities and facilities related to information technology by educational institutions is very necessary so that learning can run optimally, per the objectives, and in accordance with current technological developments. Educational institutions must have educational equipment, media, and educational technology and equipment that can support the learning process. Providing facilities and facilities related to information technology by educational institutions is very necessary so that learning can run optimally, in accordance with objectives, and in accordance with current technological developments. Educational institutions must have educational equipment, media, and educational technology and equipment that can support the learning process (Galus et al., 2021). Qualified technology devices and information systems must be provided by schools so that teachers and students can access them smoothly at any time (Hermawansyah, 2021).

In fact, integrating technological tools will lead to developing a learning environment that better aligns teaching to students and teachers. In addition, making a modern part of the learning environment can provide students with an open and flexible direction to facilitate traditional pedagogy to modern tools (Huda et al., 2018).

Thus, it is vital in dealing with learning in the current disruptive era so prospective teachers can integrate technology according to the needs of each student in change (Nurjaman et al., n.d.). Integrating information and communication technology in education can also improve the quality of education in madrasahs (Nuryana, 2018; Bai et al., 2020). Nevertheless, although technology is increasingly sophisticated, some teacher education programs still do not integrate technology into the teaching and learning process. Thus, awareness is needed since teachers are the spearhead in implementing learning in schools, and now teachers are required to utilize technological developments to support the teaching and learning process (Astini, 2019; Uğur & Koç, 2019). From the several studies that have been conducted, no research has been found related to the technological readiness of Madrasah Ibtidaiyah teachers in the learning process in rural areas (underdeveloped, foremost, and outermost). Therefore this research is important to do, and the readiness of teacher technology in the learning process in the rural area needs to be done, because it will help overcome educational problems encountered in the area, such as the readiness of teacher technology in the learning process.

With limited infrastructure and the ability of teachers to use learning technology, teachers are far behind in the times like today. Also, teacher and school readiness are lacking in facilitating learning to utilize technology. Moreover, one of the factors causing a lack of student interest is that the teacher has not been able to use the learning media (Abdullah et al., 2018; Marpa, 2021). Thus, there is a tendency to teach in traditional ways.

Since technology has a tremendous influence on the quality of learning, there needs to be efforts to adopt technology so that it is more developed and advanced for MI schools. Specifically, e-learning technology can motivate a community of teachers and students (Kosasi, 2015; Rashid et al., 2021). Changing the learning process from the usual face-to-face to distance learning is also needed (Retnaningsih, 2019; Sadeghi, 2019). Learning by integrating technology will make it easier for teachers and students as it provides opportunities for students to learn dynamically and interactively (Syukur, 2014; Panisoara et al., 2020). In this study, the school expects training for teachers in schools. This study will describes and explains how the technological readiness of Madrasah Ibtidaiyah teachers is in the learning

process, which includes the condition of the teacher, as well as facilities and infrastructure related to the technology available in educational institutions. Explanations related to technology readiness can later be used as a reference for future technology improvement.

Research Methods

The method used in this research was qualitative, with a descriptive approach. According to Bogdan and Taylor, the qualitative method is a research procedure that produces descriptive data from people's words, written and verbal, and observed behavior, including image documentation (Manab, 2015). The research design employed technology readiness theory to determine the readiness of MI teachers in Pekat Sub-district, West Nusa Tenggara (NTB), both the readiness of teachers in using technology and utilizing learning technology to achieve learning objectives. In addition, technology readiness needs to be studied more deeply regarding the importance of teachers using technology.

The data analysis technique utilized in this study was qualitative data analysis, using the methods of observation, interviews, and documentation. Observation and interview methods were used to observe the state of teacher readiness in using technology and the environment, facilities, and problems in MI The data collection was carried out in accordance with the research questions, namely related to the technological readiness of teachers in utilizing learning technology, attitudes towards using technology in learning, and the actual conditions in schools in using technology. This study conducted interviews with 7 participants as key informants to obtain research data. For data analysis in this study, the researchers went directly to the research location to get data to be processed. Meanwhile, the data analysis employed was in the form of interview transcripts, field notes, and other materials systematically, which were done by the researchers to increase their understanding of teacher data in using technology and teacher readiness to use technology for learning in schools.

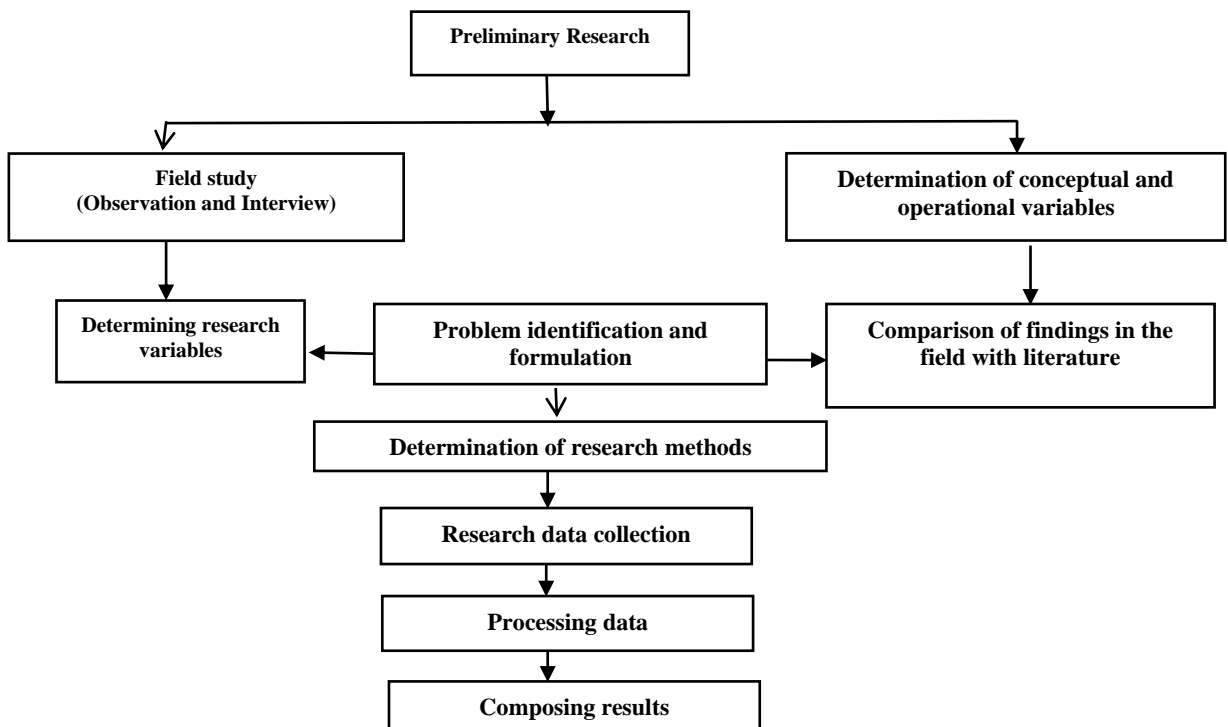


Figure 1. Research Procedure

An overview of the research model can be seen in the diagram below:

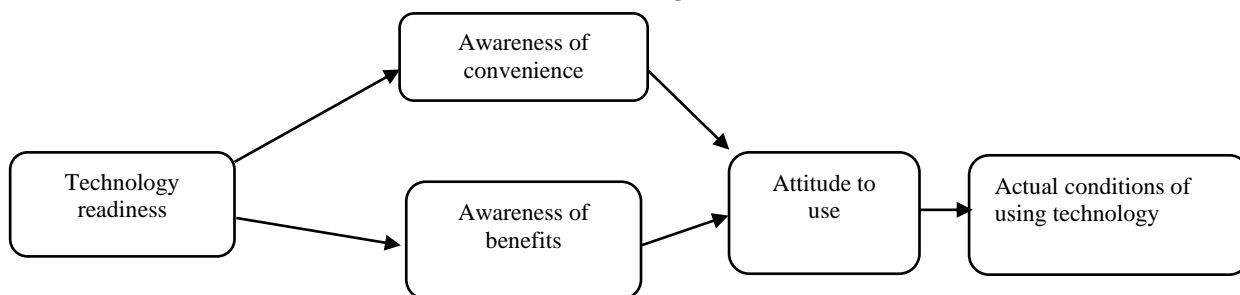


Figure 2. Research Model Diagram

This study aims to determine teachers' readiness to use and utilize learning technology to achieve learning objectives at Madrasah Ibtidaiyah (MI) in Pekat Sub-district, West Nusa Tenggara. The use of technology in learning is crucial, so efforts are needed to implement technology as a medium that can make it easier for teachers and students to find various learning resources. Based on the results of observations, interviews, and documentation, the researchers obtained an overview that in MI in Pekat Sub-district, Dompu Regency, West Nusa Tenggara, the use of technology still had many obstacles due to unsupported infrastructure, facilities, and infrastructure and the lack of teacher knowledge about the use of technology. It caused some teachers not ready to use learning technology. Based on the data above, the percentage of internet users in West Nusa Tenggara (NTB) was relatively small compared to internet users in Indonesia.

Result and Discussion

Analysis of teacher technology readiness in utilizing learning technology

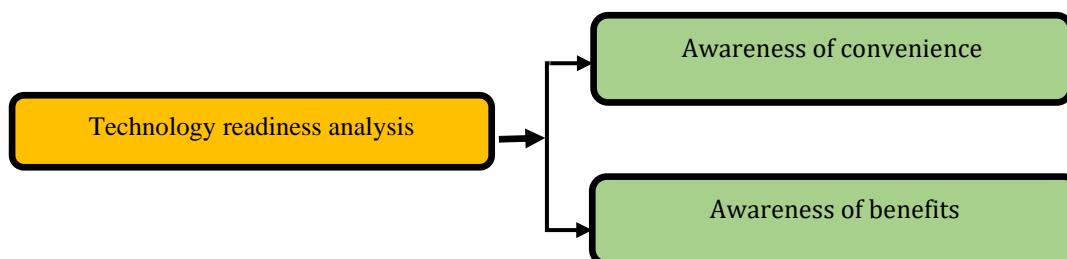


Figure 4. Technology Readiness Analysis

Based on observations and interviews with teachers of *Madrasah Ibtidaiyah* in Pekat Sub-district, Dompu Regency, West Nusa Tenggara, related to the analysis of learning technology readiness, data were obtained that there was readiness in utilizing technology. However, some teachers lacked knowledge regarding the use of technology.

“gini mbak, sebenarnya disini kami memiliki keinginan dalam memanfaatkan teknologi, Akan tetapi sarananya dan prasarana masih belum mendukung penerapan teknologi di sekolah, ya kadang ada guru yang punya HP untuk pembelajaran daring. Ya kami lihat juga siswa yang rata-rata belum memiliki HP. dan juga guru yang berumur kurang pengetahuannya terkait penggunaan teknologi sehingga ya masih memanfaatkan buku cetak atau papan tulis” (Partisipan 1).

[“Look, Ms, actually, we desire to use technology here. However, the facilities and infrastructure still do not support the application of technology in schools. Yes,

sometimes, some teachers have mobile phones for online learning. We also see that students, on average, do not have mobile phones. Also, older teachers lack knowledge regarding the use of technology, so they still use printed books or blackboards.” (Participant 1)]

It was clarified by respondent 2, who stated that with the development of an increasingly advanced era, using technology as a learning medium in the school environment is indispensable.

“Tapi balik lagi mbak seperti yang dikatan partisipan (1) bahwa sarana dan prasana di sekolah kami belum mendukung. Menurut saya memang penting bagi sekolah memiliki kesadaran dalam memanfaatkan teknologi sebagai media pembelajaran tapi yaitu tadi. Jaringan saja disini kadang hilang-hilang mbak apalagi untuk internet buat belajar, jadi masih susah sekali. Yaa harapannya semoga kita kedepan dapat memanfaatkan teknologi seperti di kota-kota besar” (Partisipan 2).

[“But again, Ms, as Participant 1 said, the facilities and infrastructure at our school are not yet supported. In my opinion, schools need to be aware of using technology as a learning medium, but yes, that is it. The network here is sometimes lost, Ms, especially for the internet for studying; therefore, it is still hard. Yes, I hope that in the future we can use technology like in big cities.” (Participant 2)]

For this reason, stakeholders must analyze the readiness of learning technology for teachers and the facilities and infrastructure schools need in remote areas.

“Harapan kami ya pihak stakeholder turun ke sekolah-sekolah di desa untuk memberikan pelatihan atau sarana dan prasarana lah yang kami butuhkan di sekolah pada saat ini, supaya guru-guru disini juga tau bagaimana memanfaatkan teknologi dengan baik pada saat pembelajaran di sekolah. Yaa seperti yang mbak lihat tadi, sebagian besar kami disini masih belajar menggunakan buku cetak dan papan tulis, dan untuk infrastruktur jaringan belum merata. Bahkan kami pun saat menggunakan telpon masih susah jaringan internetnya” (Partisipan 3).

[“Yes, we hope that stakeholders will go to schools in the village to provide training, facilities, and infrastructure that we need in schools at this time. It is intended so that the teachers here also know how to use technology well when learning at school. Yes, as you saw earlier, Ms, most of us here are still learning to use printed books and blackboards, and the network infrastructure is not evenly distributed. In fact, even when we use the telephone, the internet network is still difficult.” (Participant 3)]

It is also confirmed in a study by the SMERU Research Institute, stating that West Nusa Tenggara is one of the provinces facing the problem of low student learning outcomes, especially at the elementary education level. Regarding efforts to improve the quality of student learning, there was almost no use of technology in learning, a lack of training for teachers, and a lack of budget and educational infrastructure.

“yaa disini masih mengajar secara langsung sih mbak, meskipun sudah ada jaringan tapi masih kurang terkait penggunaan teknologi pada saat proses pembelajaran” (Partisipan 4).

["Yes, we still teach directly here, Ms; even though there is a network, it is still lacking related to the use of technology during the learning process." (Participant 4)]

Thus, it is critical to analyze the readiness of teachers to use learning technology and what needs are required by schools in remote areas to achieve the planned educational goals in the future. Needs analysis, such as training, must also be adapted to the conditions and situations in the area so that in the future, it can produce competent teachers in accordance with current developments. In addition, teachers need technology readiness, especially in today's online learning, which requires teachers to master learning technology.

In general, the need is defined as the gap between what is expected and the existing conditions. Mitchell (1993) described needs analysis as "an examination of the existing need for training within an organization." Needs analysis also identifies the problem or need and identifies the intervention's objectives, content, implementation, targets, and outcomes. By applying a needs analysis, it can be seen what teachers need and what gaps are required in the world of education. In fact, teachers need various kinds of continuous opportunities to improve their skills, especially regarding learning technology. Moreover, it is believed that the primary step that the stakeholders must give is the training program. Training programs are most effective when they are based on an analysis of the current needs of teachers (Moeni, 2008; Ersin et al., 2020).

Attitude to use technology in learning

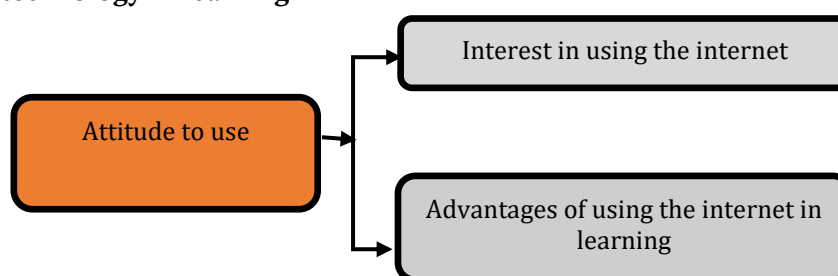


Figure 5. Attitude in Using Technology

In the attitude of using technology, of course, there is a pretty good acceptance if it has been implemented in schools and is supported by access factors, such as computers, training, and other technical support, and teachers must really be able to use learning technology since these are all interrelated. It is also because teachers are crucial for successfully using technology in schools' teaching and learning process systems. In interviews with a participant (principal), it was revealed that:

"Hmmm sebenarnya ada beberapa guru disini bisa menggunakan teknologi dalam pembelajaran dengan seadanya, yaa jaringan disini lumayan tapi terkadang sikap penggunaan internet terhadap minat dalam memanfaatkan teknologi belum terlalu optimal karena masih terbiasa mengajar dengan sistem konvensional" (Partisipan 6).

["Hmmm, actually, some teachers here can use technology in learning minimally. Yes, the network here is okay, but sometimes, the attitude of using the internet to interest in using technology is not yet optimal as they are still used to teach with the conventional system." (Participant 6)]

The attitude and interest of teachers in using technology are very influential in running the learning process that uses technology in a school. It will make it easier to access teaching materials, and teachers and students can do distance learning without having to meet face-to-face. Therefore, technology plays an essential role in human life, academically and professionally (Wang & Dostál, 2017). In addition, the attitude of teachers towards ICT is a crucial element related to the early and future acceptance of ICT. However, studies on the application of school technology in rural areas of Indonesia have not been found; even though the schools in this area of Indonesia have been equipped with technological equipment, some still have not been able to apply learning technology (Prasojo et al., 2019).

“Saya senang jika melakukan belajar dengan media teknologi, saya pernah coba tapi hanya beberapa siswa saja yang ikut, karena tidak semua siswa saya memiliki HP jadi belajar langsung lebih menjamin, sebenarnya pembelajaran menggunakan teknologi cukup bermanfaat bagi kita (guru) dan siswa tapi balik lagi ke keadaan (Partisipan 7).

[“I am happy if I do learning with technology media. I have tried it, but only a few students participated because not all of my students have mobile phones, so direct learning is more secure. Actually, learning using technology is quite beneficial for us (teachers) and students, but back to the situation.” (Participant 7)]

Moreover, the benefits of using technology during learning are that it provides convenience for students and teachers and can improve student learning outcomes since students can learn easily and access shared resources for learning. Thus, it is easier for teachers to contribute to using more useful IT tools and have a positive attitude towards integrating technology in teaching; adequate training will make them more proficient in using these tools (Nair & Das, 2012). Suppose teachers have more positive affective, cognitive, and behavioral attitudes about technology, such as using virtual learning platforms (LMS). In that case, they will have a greater intention to integrate technology into teaching and learning processes with students. Therefore, incorporating technology in teaching is conditioned by teachers' attitudes and expectations regarding using existing technology to support a more modern learning process (Guillén-Gámez & Mayorga-Fernández, 2020; Kelley et al., 2020).

Actual conditions in schools in the use of technology

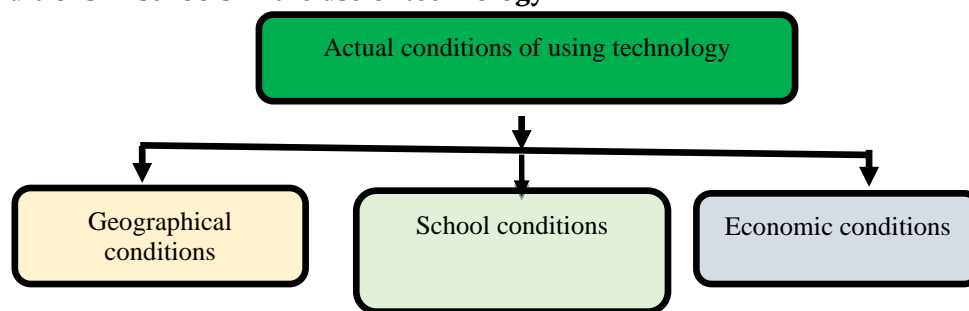


Figure 6. Actual Conditions of Using Technology

The study results found that the actual condition of using technology in schools has not been fully implemented due to the lack of infrastructure, facilities, and infrastructure and the lack of teacher knowledge regarding the use of learning technology.

“untuk pelaksanaan pembelajaran berbasis teknologi disini tidak memungkinkan karena kondisi wilayah tidak mendukung, jadi kami terpaksa melakukan pembelajaran dengan sealkadarnya saja atau sesuai dengan kemampuan kami para guru, mbak” (Partisipan 4).

[“For the implementation of technology-based learning, it is not possible here because regional conditions do not support it; thus, we are forced to do the learning as little as possible or according to our (the teachers) abilities, Ms. (Participant 4)]

It is supported by Participant 7, who stated that

“pelaksanaan belajar mengajar sudah terbiasa dengan tata muka, Adapun pelaksanaan pembelajaran dengan teknologi tidak semua terpenuhi mbak seperti harus punya HP, laptop dll, sedangkan disini rata-rata belum punya.” (Partisipan 7)

[“The implementation of teaching and learning is familiar with face-to-face; as for the implementation of learning with technology, not all are fulfilled, Ms, such as having a mobile phone, laptop, and others, whereas here, on average, they do not have it.” (Participant 7)]

Furthermore, education with good quality will increase the community welfare level. That way, quality education can produce people who can manage this country well. Pendidikan berkualitas dapat menghasilkan lulusan yang menjadi pelopor dalam pembaharuan serta perubahan, dan menghasilkan lulusan yang berkualitas (Mukhlisin, 2021). However, several schools in Indonesia still have challenges in carrying out teaching and learning activities with appropriate quality standards, and many physical buildings still have not been repaired. Some elementary schools in Indonesia located in remote areas also still use semi-permanent materials, such as plywood or zinc, and some MI schools still use thin plywood barriers to separate classrooms. Basically, remote or underdeveloped areas and small islands can be categorized as areas with minimal infrastructure services (Maspul & Amalia, 2021).

Accordingly, it is necessary to pay attention to stakeholders to conduct an environmental analysis in the Pekat Sub-district area, especially for education. Judging from the geographical conditions, the MI school area in Pekat Sub-district, Dompu Regency, West Nusa Tenggara, is very strategic regarding transportation and environmental aspects. However, in education, not all areas are covered by complete facilities. For example, MI schools in several villages in Pekat Sub-district, Dompu Regency, West Nusa Tenggara, located in remote areas, only use basic facilities and infrastructure. In addition, some schools still need to be considered, such as the physical condition of the buildings, facilities, and infrastructure of the school, which still have wooden walls. Also, not all schools use technology to support the teaching and learning process, and some teachers still lack knowledge about implementing learning technology. Seperti penelitian yang dilakukan oleh (Sinurat et al., 2021), menemukan bahwa terdapat guru di sekolah pada daerah terpencil belum maksimal dalam memberikan pembelajaran dengan teknologi. Hal tersebut berbeda dengan penelitian yang dilakukan oleh (Dewi & Priendamingtyas, 2021), yang menemukan bahwa guru siap dalam menggunakan teknologi pembelajaran. Perbedaan pernyataan tersebut disebabkan oleh lokasi penelitian dan mutu pendidikan yang belum merata. Untuk lokasi penelitian di daerah terpencil menemukan bahwa pemanfaatan teknologi belum optimal, sedangkan di daerah lainnya sudah siap dalam pemanfaatan teknologi. Sulitnya mengembangkan kemampuan guru dalam penggunaan teknologi salah satunya disebabkan

oleh daerah yang terpencil serta terisolir (Fitriah & Mirianda, 2019). Jika dilihat dari permasalahan pendidikan di Indonesia yang memiliki daerah terpencil, akan sulit mengembangkan kemampuan penggunaan teknologi pada guru (Reza & Syahrani, 2021).

Hence, it is hoped that stakeholders will take policy steps so that schools in Pekat Sub-district, Dompu Regency, West Nusa Tenggara, can learn distance learning as an alternative to equal opportunities in improving the quality of education, and all schools can use technology in learning. Melakukan peningkatan sarana dan prasarana seperti teknologi internet perlu dilakukan sampai ke daerah terpencil, karena hal tersebut merupakan suatu kebutuhan di era teknologi informasi saat ini (Patandung & Panggua, 2022). This study describes and explains how the technological readiness of Madrasah Ibtidaiyah teachers is in the learning process, which includes the condition of the teacher, as well as facilities and infrastructure related to the technology available in educational institutions. Explanations related to technology readiness can later be used as a reference for future technology improvement. Suppose the attitude and readiness of teacher technology in utilizing learning technology as well as the actual conditions in schools are analyzed and examined. In that case, the advantages and disadvantages regarding technology readiness in schools will be known, which will be used as a reference for future improvements. Kesiapan guru perlu diketahui dan dipastikan, karena kesiapan tersebut akan mendorong peningkatan kualitas pembelajaran dan kesiapan tenaga pendidik dalam beradaptasi di era digital (Mau, 2022; Heru et al., 2021).

Conclusion

Teacher readiness in classroom learning will positively impact the quality of learning with the support of tools. The readiness of all learning components will also affect schools' teaching and learning situations. In particular, the readiness of teachers to utilize learning technology plays an essential role in improving the quality of learning. The use of technology in schools is optimal if it is equipped with adequate facilities, but the implementation of technology cannot be used evenly, given the conditions that do not support the implementation of learning technology. Due to inadequate infrastructure, facilities, and infrastructure, many teachers could not utilize technology to its full potential and had minimal knowledge of learning technology. Suppose the attitude and readiness of teacher technology in utilizing learning technology as well as the actual conditions in schools are analyzed and examined. In that case, the advantages and disadvantages regarding technology readiness in schools will be known, which will be used as a reference for future improvements.

Acknowledgments

Thank you to the Ministry of Research, Technology and Higher Education, all school principals, and all MI teachers in Pekat Sub-district, Dompu Regency, West Nusa Tenggara, who have volunteered to be resource persons in this research and to those who were involved and assisted in writing this article.

Bibliography

- Abdillah, A., Pramita, D., & Negara, H. (2018). Peningkatan global media and information literacy professional network (gmilpn) mgmp matematika di ntb. *JPMB: Jurnal Pemberdayaan Masyarakat Berkarakter*, 1(1), 1–9.
- Adri, J., Ambiyar, A., Jalinus, N., Jama, J., & Giatman, M. (2020). Pengaruh kesiapan

- mengajar terhadap sikap mengajar calon guru muda. *Jurnal Vokasi Mekanika*, 2(2), 15–21. <https://doi.org/10.24036/vomek.v2i2.99>
- Aspi, M., & Syahrani, S. (2022). Profesional guru dalam menghadapi tantangan perkembangan teknologi pendidikan. *ADIBA: Journal of Education*, 2(1), 64–73.
- Astini, N. K. S. (2019). Pentingnya literasi teknologi informasi dan komunikasi bagi guru sekolah dasar untuk menyiapkan generasi milenial. *Prosiding Seminar Nasional Dharma Acarya*, 113–120. <https://stahnmpukuturan.ac.id/jurnal/index.php/dharmaacarya>
- Bai, C., Dallasega, P., Orzes, G., & Sarkis, J. (2020). Industry 4.0 technology assessment: a sustainability perspective. *International Journal of Production Economics*, 229, 1–15. <https://doi.org/10.1016/j.ijpe.2020.107776>
- Churiyah, M., Sholikhah, S., Filianti, F., & Sakdiyyah, D. A. (2020). Indonesia Education Readiness Conducting Distance Learning in Covid-19 Pandemic Situation. *International Journal of Multicultural and Multireligious Understanding*, 7(6), 491–507. <https://doi.org/10.18415/ijmmu.v7i6.1833>
- Damuri, A., Isnain, N., Rahmatika, R., Priyatama, A., Chandra, Y. I., & Putra, A. S. (2021). E-Learning Proposal System in Public Secondary School Learning. *International Journal of Educational Research & Social Science*, 2(2), 270–275. <https://doi.org/10.51601/ijersc.v2i2.72>
- Danuri, M. (2019). Development and transformation of digital technology. *Infokam*, 15(2), 116–123.
- Dewi, R. S., & Priendarningtyas, A. (2021). Kesiapan guru pembelajaran daring dengan media digital. *Jurnal Pendidikan Tambusai*, 5(3), 6675–6681.
- Ersin, P., Atay, D., & Mede, E. (2020). Boosting preservice teachers' competence and online teaching readinees through e-practicum during the covid-19 outbreak. *International Journal of TESOL Studies*, 2(2), 112–124. <https://doi.org/doi.org/10.46451/ijt>
- Fitriah, D., & Mirianda, M. U. (2019). Kesiapan guru dalam menghadapi tantangan pendidikan berbasis teknologi. *Prosiding Seminar Nasional Pendidikan Program Pascasarjana Universitas PGRI Palembang*, 148–153.
- Galus, S. S., Arifin, A., & Sulkifly, S. (2021). Kesiapan Sekolah dalam Pengelolaan Model Pembelajaran Hybrid Learning di SMA Kota Gorontalo. *Student Journal of Educational Management*, 1(1), 41–56. <https://doi.org/10.37411/sjem.v1i1.878>
- Geng, S., Law, K. M. Y., & Niu, B. (2019). Investigating self-directed learning and technology readiness in blending learning environment. *Journal International of Educational Technology in Higher Education*, 16(1). <https://doi.org/10.1186/s41239-019-0147-0>
- Guillén-Gámez, F. D., & Mayorga-Fernández, M. J. (2020). Identification of variables that predict teachers' attitudes toward ict in higher education for teaching and research: a study with regression. *Sustainability*, 12(4), 1–14. <https://doi.org/10.3390/su12041312>
- Hastuti, H., Toyamah, N., & Usman, S. (2018). *Sintesis hasil studi diagnostik pembelajaran pendidikan dasar di enam kabupaten mitra inovasi di provinsi nusa tenggara barat*.
- Hermawansyah, H. (2021). Manajemen Lembaga Pendidikan Sekolah Berbasis Digitalisasi di

- Era Covid-19. *Jurnal Studi Pendidikan*, 12(1), 28–46.
<https://doi.org/10.47625/fitrah.v12i1.320>
- Heru, H., Yuliani, R. E., Nery, R. S., & Kesumawati, N. (2021). Pengembangan instrumen kesiapan guru matematika pada pembelajaran daring dalam perspektif tpack. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 10(3), 1360–1372.
<https://doi.org/10.24127/ajpm.v10i3.3980>
- Huda, M., Maseleno, A., Teh, K. S. M., Don, A. G., Basiron, B., Jasmi, K. A., Mustari, M. I., Nasir, B. M., & Ahmad, R. (2018). Understanding modern learning environment (mle) in big data era. *IJET: International Journal of Emerging Technologies in Learning*, 13(5), 71–85. <https://doi.org/10.3991/ijet.v13i05.8042>
- Ismaniati, C. (2013). *Penggunaan teknologi informasi dan komunikasi dalam peningkatan kualitas pembelajaran*. [http://staff.uny.ac.id/sites/default/files/penelitian/Dr. Christina Ismaniati, M.Pd./Penggunaan Tecnologi Informasi dan komunikasi dalam peningkatan kualitas pembelajaran.pdf](http://staff.uny.ac.id/sites/default/files/penelitian/Dr.ChristinaIsmaniati,M.Pd./PenggunaanTecnologiInformasiDanKomunikasiDalamPeningkatanKualitasPembelajaran.pdf)
- Jalal, M. (2020). Kesiapan guru menghadapi pembelajaran jarak jauh di masa covid-19. *SMART KIDS: Jurnal Pendidikan Islam Anak Usia Dini*, 2(1), 35.
<https://doi.org/10.30631/smartkids.v2i1.61>
- Kelley, T. R., Knowles, J. G., Holland, J. D., & Han, J. (2020). Increasing high school teachers self-efficacy for integrated stem instruction through a collaborative community of practice. *International Journal of STEM Education*, 7(14), 1–13.
<https://doi.org/10.1186/s40594-020-00211-w>
- Kim, J. (2020). Learning and teaching online during covid-19: experiences of student teaches in an early childhood education practicum. *International Journal of Early Childhood*, 52, 145-158. [10.1007/s13158-020-00272-00276](https://doi.org/10.1007/s13158-020-00272-00276).
- Kosasi, S. (2015). Perancangan e-learning untuk meningkatkan motivasi belajar guru dan siswa. *Seminar Nasional Pendidikan Teknik Informatika (SENAPATI)*, 82–88.
<http://pti.undiksha.ac.id/senapati>
- Manab, A. (2015). *Penelitian pendidikan pendekatan kualitatif*. Kalimedia. [http://repo.iain-tulungagung.ac.id/10156/1/Penelitian Pendidikan Pendekatan Kualitatif.pdf](http://repo.iain-tulungagung.ac.id/10156/1/PenelitianPendidikanPendekatanKualitatif.pdf)
- Marpa, E. P. (2021). Technology in the teaching of mathematics: an analysis of teachers' attitudes during the covid-19 pandemic. *IJONSE: International Journal on Studies in Education*, 3(2), 92–102.
- Maspul, K. A., & Amalia, F. (2021). The role of parents in the implementation of hybrid learning toward school normalisation in indonesia. *Academia Letters*, 1–5.
<https://doi.org/10.20935/al3588>
- Mau, C. (2022). Analisis kesiapan technological, pedagogical, content knowledge guru dalam pembelajaran daring di era pandemi covid-19. *LEARNING: Jurnal Inovasi Penelitian Pendidikan Dan Pembelajaran*, 2(2), 139–148.
<https://doi.org/10.51878/learning.v2i2.1203>
- Moeni, H. (2008). Identifying needs: a missing part in teacher training programs. *International Journal of Media, Technology and Lifelong Learning*, 4(1), 1–12.

- Mukhlisin, A. (2021). Kepemimpinan kepala sekolah kunci keberhasilan dalam pencapaian kualitas pendidikan. *Alignment: Journal of Administration and Educational Management*, 4(2), 193–199. <https://doi.org/10.31539/alignment.v4i2.2566>
- Mulyani, F., & Haliza, N. (2021). Analisis perkembangan ilmu pengetahuan dan teknologi (iptek) dalam pendidikan. *Jurnal Pendidikan Dan Konseling (JPDK)*, 3(1), 101–109. <https://doi.org/10.31004/jpdk.v3i1.1432>
- Nair, I., & Das, V. M. (2012). Using technology acceptance model to assess teachers' attitude towards use of technology as teaching tool: a sem approach. *International Journal of Computer Applications*, 42(2), 1–6. <https://doi.org/10.5120/5661-7691>
- Nurjaman, I., Patriasurya, A., Firdaus, M. I., Yenni, Y., Kurniawan, E. Y., Anggraini, N., & Almanar, M. A. (n.d.). *Kemampuan penilaian pembelajaran dengan menggunakan teknologi mahasiswa fkip umt*.
- Nuryana, Z. (2018). Pemanfaatan teknologi informasi dalam pendidikan agama islam. *Tamaddun: Jurnal Pendidikan Dan Pemikiran Keagamaan*, 19(1), 75–86. <https://doi.org/10.30587/tamaddun.v0i0.818>
- Panisoara, I. O., Lazar, I., Panisoara, G., Chirca, R., & Ursu, A. S. (2020). Motivation and Continuance Intention towards Online Instruction among Teachers during the COVID-19 Pandemic: The Mediating Effect of Burnout and Technostress. *International Journal of Environmental Research and Public Health*, 17(21), 1–28. <https://doi.org/10.3390/ijerph.17218002>
- Patandung, Y., & Panggua, S. (2022). Analisis masalah-masalah pendidikan dan tantangan pendidikan nasional. *Jurnal Sinestesia: Pendidikan, Bahasa, Sastra, & Budaya*, 12(2), 794–805.
- Prasojo, L. D., Mukminin, A., Habibi, A., Hendra, R., & Iqroni, D. (2019). Building quality education through integrating ict in schools: teachers' attitude, perception, and barriers. *Quality Access to Success: Journal of Management Systems*, 20(172), 45–50.
- Rashid, A. H. A., Shukor, N. A., Tasir, Z., & Na, K. S. (2021). Teachers' perceptions and readiness toward the implementation of virtual learning environment. *IJERE: International Journal of Evaluation and Research In Education*, 10(1), 209–214. <https://doi.org/10.11591/ijere.v10i1.21014>
- Retnaningsih, D. (2019). Tantangan dan strategi guru di era revolusi industri 4.0 dalam meningkatkan kualitas pendidikan. *Prosiding Seminar Nasional Kebijakan Dan Pengembangan Pendidikan Di Era Revolusi Industri 4.0*, 23–30.
- Reza, M. R., & Syahrani, S. (2021). Pengaruh supervisi teknologi pendidikan terhadap kinerja tenaga pengajar. *Educational Journal: General and Specific Research*, 1(1), 84–92.
- Riasatul, H., Salsabila, U. H., Lestari, W. M., Andaresta, O., & Yulianingsih, D. (2020). Pemanfaatan teknologi media pembelajaran di masa pandemi covid-19. *TRAPSILA: Jurnal Pendidikan Dasar*, 2(2), 1. <https://doi.org/10.30742/tpd.v2i2.1070>
- Rohartati, S. (2022). Analisis Dampak Pandemi Covid-19 terhadap Proses Pembelajaran Daring di Sekolah Dasar. *Jurnal Cakrawala Pendas*, 8(1), 249–258. <https://doi.org/10.31949/jcp.v8i1.1935>

- Rohman, M. G., & Susilo, P. H. (2019). Peran Guru dalam Penggunaan Media Pembelajaran Berbasis Teknologi Informasi dan Komunikasi (TIK) Studi Kasus di TK Muslimat NU Maslakul Huda. *Reforma: Jurnal Pendidikan Dan Pembelajaran*, 8(1), 173–177. <https://doi.org/10.30736/rfma.v8i1.140>
- Sadeghi, M. (2019). A shift from classroom to distance learning: advantages and limitations. *International Journal of Research in English Education*, 4(1), 80–88. <https://doi.org/10.29252/ijree.4.1.80>
- Sinurat, L. R., Siregar, L. H., & Zainy, A. (2021). Analisis kesiapan siswa dalam pembelajaran daring pada kelas x tkj smk swasta (yapim) pasar binanga. *Jurnal Vinertek: Vokasional Informatika Edukasi Riset Dan Teknologi*, 1(2), 21–28.
- Smaldino, S. E., Lowther, D. L., & Mims, C. (2019). *Instructional technology and media for learning*. Pearson.
- Sukmawati, R. (2019). Analisis kesiapan mahasiswa menjadi calon guru profesional berdasarkan standar kompetensi pendidik. *Jurnal Analisa*, 5(1), 95–102. <https://doi.org/10.15575/ja.v5i1.4789>
- Syukur, I. A. (2014). Teacher professionalism in implementing information and communication technology in nganjuk district. *Jurnal Pendidikan Dan Kebudayaan*, 20(2), 200–210. <https://doi.org/10.24832/jpnk.v20i2.138>
- Uyur, N. G., & Koç, T. (2019). Leading and Teaching with Technology: School Principals' Perspective. *IJELM: International Journal of Educational Leadership and Management*, 7(1), 42–71. <https://doi.org/10.17583/ijelm.2019.3758>
- Wahyudiyono, W. (2016). Penggunaan teknologi informasi dan komunikasi di nusa tenggara barat. *Jurnal Komunika: Jurnal Komunikasi, Media, Dan Informatika*, 5(1), 29–36. <https://doi.org/10.31504/komunika.v5i1.636>
- Wang, X., & Dostál, J. (2017). An analysis of the integration of ict in education from the perspective of teachers' attitude. *Proceedings of EDULEARN17 Conference*, 8156–8162. <https://doi.org/10.21125/edulearn.2017.0507>
- Widianto, E., Husna, A. A., Sasami, A. N., Rizkia, E. F., Dewi, F. K., & Cahyani, S. A. I. (2021). Pemanfaatan Media Pembelajaran Berbasis Teknologi Informasi. *Journal of Education and Teaching*, 2(2), 213–224.