



Teacher strategies in building islamic value-based competencies and optimizing technology in the digital age

Siti Fahra Utami¹, Wulan Anggraini², Amanda Ikra Negara³, Abdurrahmansyah^{4*}, Nur Alya Salsabila binti Ismail⁵

^{1,2,3,4} Faculty of Education and Teacher Training, UIN Raden Fatah Palembang, Indonesia

⁵ Malay Literature, University Pendidikan Sultan Idris, Malaysia

*Corresponding author: abdurrahmansyah73@radenfatah.ac.id

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ABSTRACT

This study aims to explore the strategies used by Madrasah Ibtidaiyah teachers in developing students' competencies based on Islamic values while optimizing the use of technology in the digital age. Teachers have an important role in integrating technology in learning without ignoring Islamic values. This research uses descriptive qualitative methods with literature study and interviews to explore competency development strategies and technology utilization. The literature study involved tracing various scientific sources, while interviews were conducted with teachers to understand the implementation of learning strategies and the challenges faced. The results show that to overcome the limitations of teachers' infrastructure and technology skills, solutions that can be implemented include the development of a more stable and affordable community-based internet network and the utilization of portable learning devices such as mini routers or satellite-based hotspots. In addition, online and offline-based technology training is effective in improving teachers' skills, especially in areas with limited internet access. Teachers are also encouraged to create simple digital learning media such as offline-based apps or PowerPoint-based interactive media that can be disseminated via USB devices or memory cards. Although technology has been applied in learning, challenges such as limited infrastructure, teacher readiness, and learners' digital literacy still need to be overcome. The study concludes that although technology enhances learning effectiveness, its successful integration requires adequate infrastructure, teacher training, and support to ensure Islamic values are preserved.



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INTRODUCTION

The development of digital technology has brought major changes in the world of education, including in the Islamic school environment (Zahraini et al., 2025; Timotheou et al., 2023; Khoir et al., 2025). Madrasah Ibtidaiyah teachers have a strategic role in building the competence of students who are not only academically superior but also based on Islamic values (Badrun, 2024; Tambak & Sukenti, 2025). Along with digital transformation, the use of technology in learning has become a necessity to improve educational effectiveness (Sych et al., 2021; Makarova et al., 2018). However, the biggest challenge in education today is how to integrate technology without ignoring the essence of Islamic values-based education (Nasucha et al., 2023; Wahyudi et al., 2024). In constructivism theory, learning is seen as an active process in

which learners build their understanding through experience and interaction with the environment (Rivera et al., 2024; Wallner, 2024). The teacher acts as a facilitator who creates learning situations so that students can actively engage with the material through information processing and social interaction (Carless, 2022; Saleem et al., 2021). Therefore, the integration of technology in Islamic learning should be based on meaningful learning experiences. This approach is in line with the *Value-Based Education* theory which emphasizes that education does not only focus on the transfer of knowledge but also on character building based on religious values (Amin, 2024; Ahmadi, 2022).

Although technology offers various opportunities in education, there are several challenges faced by Madrasah Ibtidaiyah teachers in integrating technology with Islamic value-based learning. The main challenge is the lack of teacher competence in managing digital learning while maintaining Islamic values (Taufik & Rusdi, 2024; Haddade et al., 2024). In addition, students' limited digital literacy is also an obstacle, because they need to be equipped with skills in sorting and using technology wisely in accordance with Islamic teachings so as not to be exposed to negative content (Devi et al., 2023; Suroso et al., 2021). Another challenge is how to maintain a balance between the use of technology and direct interaction in learning so that students still get a holistic learning experience and do not rely solely on technology (Rapanta et al., 2021; Ferri et al., 2020).

Based on an initial survey of 120 Madrasah Ibtidaiyah teachers in three provinces (East Java, Central Java, and South Kalimantan), it was found that only 35% of teachers are accustomed to using technology in learning, while the other 65% still rely on conventional methods such as lectures and printed textbooks. In addition, as many as 72% of teachers claimed to have difficulty in developing digital teaching materials that contain Islamic values, and only 28% had attended training related to the integration of technology and Islam-based education. On the other hand, of the 480 MI students surveyed, only 41% have regular access to digital devices such as laptops or tablets, and only 33% are able to use Islamic learning applications independently. This data shows that there is still a digital competency gap between teachers and students in the MI environment, and the need for appropriate strategies to integrate technology into Islamic value-based learning optimally and evenly (Depita, 2024; Hidayat et al., 2021; Ilmiyati et al., 2023).

A number of previous studies have made important contributions in discussing aspects of Islamic education in the digital era. Mar (2024) and Hilman (2025) examined the integration of technology in Islamic education and concluded that the utilization of digital media can increase student engagement, but requires content selection to remain in line with Islamic values. Meanwhile, Imron (2024) and Abadi & Kamil (2024) examined the effectiveness of value-based learning and found that the cultivation of religious values has a positive effect on student character building. On the other hand, Fernández-Batanero et al. (2022) and Pradana et al. (2024) highlighted the role of teachers in digital learning, especially related to teachers' competence in designing and managing technology-based learning. However, these three groups of studies have not comprehensively examined the concrete strategies of teachers in bringing together these two important aspects, namely the mastery of technology and the cultivation of Islamic values simultaneously in the context of Madrasah Ibtidaiyah.

This research has significant novelty because it specifically examines the strategies used by Madrasah Ibtidaiyah teachers in building the competence of students who are not only superior in cognitive aspects, but also have a strong foundation of Islamic values. Optimizing the use of learning technology in the digital era in the implementation of Islamic education is important to be studied (Firdaus et al., 2023; Ramli, 2024). In contrast to previous studies that generally discuss aspects of the integration of technology and Islamic values separately or theoretically, this research offers an integrative and contextual approach, by examining in depth the learning practices carried out by teachers at the level of Islamic basic education units. The focus on the primary education level is an added value, considering that primary education is an important foundation in character building and students' digital literacy (Falloon, 2020; Marín & Castaneda, 2023). With this approach, this research is expected to be able to make theoretical and practical contributions in developing learning models that are relevant to the demands of the times but still based on Islamic values which are the distinctive characteristics of Madrasah educational institutions.

This research aims to explore the strategies applied by teachers in building Islamic value-based competencies while optimizing technology in the learning process. By identifying best practices and challenges faced in the field, it is hoped that this research can make theoretical and practical contributions to the development of Islamic education in the digital era. The results of this study are also expected to be a reference for educational institutions, policy makers, and educators in developing training programs or policies that support the effective integration of values and technology in the Madrasah Ibtidaiyah environment.

METHOD

This research uses a descriptive qualitative method, which is a research approach that focuses on an in-depth understanding of social phenomena or individuals through descriptive data collection, which is then analyzed to identify patterns, themes, or meanings that emerge from natural contexts (Creswell & Poth, 2016). This research uses two main instruments in data collection, namely literature study and in-depth interviews, to dig deeper into Islamic value-based competency development strategies and the application of technology in learning at Madrasah Ibtidaiyah. The choice of descriptive qualitative method in this study was based on several main considerations. This method allows researchers to explore teachers' experiences in depth, which cannot be reached optimally through quantitative approaches. The flexibility of this method also provides room for researchers to adjust interview questions to the informants' responses, so that the data obtained is richer and more contextual, and allows researchers to explore the direct experiences of teachers regarding the challenges and opportunities that exist. The aspects examined in this study are as follows.

Table.1 Research Instruments

Instrument	Researched Aspects	Description
Literature Study	Integration of Islamic values in learning	Analyze the concept of Islamic values in education, its development strategy in learning, and relevant theories from various scientific literatures.

Instrument	Researched Aspects	Description
In-depth Interview	Utilization of technology in Islamic learning	Examine various approaches and methods in utilizing technology in Islamic value-based learning, as well as its impact on the teaching-learning process.
	Challenges in implementing technology in madrasah	Identifying obstacles in the application of technology in Madrasah Ibtidaiyah and the best strategies to overcome them based on previous research.
	Islamic value-based competency development strategy	Exploring the teacher's experience in applying Islamic values in the learning process, the methods used, and the obstacles faced.
	Use of technology in Islamic learning	Identifying how teachers utilize technology in the learning process, the type of technology used, and its effectiveness in improving students' understanding of Islamic value-based materials.
	Challenges and solutions in technology implementation	Explore the obstacles teachers face in adopting technology in Islamic learning and the solutions that have been implemented to overcome these obstacles.

Literature study was conducted to enrich theoretical knowledge related to integrating Islamic values in education and utilizing technology in learning. This is in line with the view that literature-based qualitative research can identify and explain various types, approaches, methods, and analytical techniques that are relevant in the study of religion and Islamic religiosity (Saefullah, 2024). In this way, researchers can formulate a theoretical framework that becomes the basis for analyzing the data collected, so that this research can produce stronger and more applicable findings.

In addition, in-depth interviews became one of the main tools in data collection, allowing researchers to obtain information directly from Madrasah Ibtidaiyah teachers who are involved in the teaching process. Through these interviews, the researcher was able to explore teachers' perspectives on how Islamic values are applied in learning, as well as how they face challenges in integrating technology. The interviews also provided an opportunity for the researcher to gain insight into strategies that have been successfully implemented to build students' Islamic character, as well as barriers faced in the use of technology (Fajri, Zurqoni & Sugeng, 2023).

The data obtained from the interviews were then analyzed using thematic analysis, which included several stages. First, transcription of interview data was conducted to ensure all information was accurately documented. Second, data codification was carried out by grouping information based on relevant themes, such as Islamic value-based competency development

strategies, utilization of technology in learning, challenges faced, and solutions applied. Third, identification of themes and patterns was done by looking for linkages between the coded data to find the main patterns that emerged from the interviews. Finally, the results of the analysis are organized in the form of descriptive narratives, which interpret the findings based on relevant theories to provide a deeper understanding.

The results of this study are expected to provide greater insight into the competence of teachers in integrating Islamic values with technology, as well as the strategies applied in building students' Islamic character. In addition, this research also aims to contribute to designing educational policies that support the development of teacher competencies in the use of technology and Islamic value-based learning. With a deeper understanding of the challenges and opportunities that exist, it is hoped that the results of this research can provide applicable recommendations for educational institutions, governments, and managers of Madrasah Ibtidaiyah. By optimizing the application of technology in education, it is hoped that students can be better prepared to face the challenges of the digital world in the 21st century, without putting aside Islamic values that become their moral and ethical foundation in everyday life.

RESULTS

Based on data obtained from surveys and interviews with Madrasah Ibtidaiyah teachers in several areas of Palembang, the following main results were found. The results of this study provide an overview of the strategies applied by teachers in developing student competencies based on Islamic values, while utilizing technology to support the learning process in the digital era. This research aims to explore the challenges and opportunities faced by Madrasah Ibtidaiyah teachers in facing technological developments, as well as the efforts made to harmonize religious values with the times.

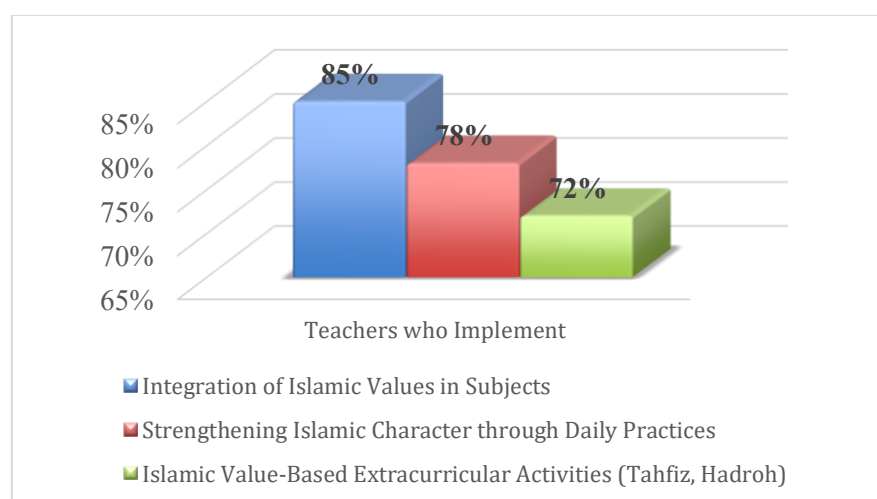


Figure 1. Islamic Value-Based Competency Development Strategy

The strategies above reflect the teacher's commitment in instilling Islamic values to students, both in the context of formal and non-formal learning. The integration of Islamic values in subjects is done through a contextual approach that connects academic concepts with Islamic principles, so that students not only understand the subject matter, but also gain Islamic wisdom

that is relevant in everyday life. Strengthening Islamic character through daily habituation is very important to form a noble student personality. Activities such as congregational prayers, prayers before and after learning, and other Islamic manners are the basis for developing students' spiritual character. This habituation also creates an exemplary environment, where students learn to practice religious teachings in their daily activities.

In the strategy of developing Islamic value-based competencies, the majority of teachers (85%) have integrated Islamic teachings in various subjects, such as linking Islamic stories in Indonesian lessons or inserting the concept of Islamic law in Mathematics and Science. This is so that students can see the connection between science and religious teachings, so that learning becomes more holistic and meaningful. In addition, 78% of teachers implement daily habits that support Islamic character, such as praying in congregation and praying before and after learning. No less important, Islamic-based extracurricular activities such as Tahfidzul Qur'an and Hadroh are also used as strategies by 72% of teachers to strengthen students' Islamic values. Through these strategies, teachers not only educate students academically, but also shape their characters to become obedient, responsible, and have high social awareness.

Table 2. Teacher Competence in Integrating Islamic Values and Technology

No.	Competence	Average Score	Category
1.	Mastery of Islamic Values Concepts	4.5	High
2.	Ability to Integrate Islamic Values in Learning	4.2	High
3.	Mastery of Educational Technology	4.0	Medium
4.	Ability to utilize technology in learning	3.8	Medium
5.	Ability to develop technology-based learning media	3.5	Medium

Based on observations of Madrasah Ibtidaiyah teachers' competence in integrating Islamic values and technology, it can be seen that mastery of the concept of Islamic values is classified as very good with an average score of 4.5, which is in the high category. This shows that teachers have a very strong understanding of Islamic teachings and are able to embed these values in learning. A good understanding of Islamic values is the main capital in shaping the character of students who are noble and have a view of life that is in line with religious principles. Teachers can integrate Islamic values in various aspects of learning, such as through examples of daily behavior, Islamic stories, and approaches that emphasize the importance of morals and ethics in students' lives. With this foundation, teachers act as role models for students in living a life based on religious teachings.

Teachers' ability to integrate Islamic values in learning also shows a fairly high score of 4.2, which is in the high category. Although not as optimal as mastering the concept of Islamic values, this still reflects the serious efforts of teachers in connecting religious teachings with the lessons they teach. For example, in Indonesian lessons, teachers often relate Islamic stories that provide moral examples for students. Similarly, in Math and Science lessons, some teachers insert Islamic values, such as honesty and perseverance, that are relevant to the concepts being taught. This strategy not only makes learning more meaningful, but also helps students to see the connection between science and religious teachings. With this integration, students not only

understand the lessons from the academic side, but also get learning that is oriented towards developing good character.

However, in the aspect of mastering and utilizing technology in learning, Madrasah Ibtidaiyah teachers still face challenges. Scores on the competency "Mastery of Educational Technology", which scored 4.0, and "Ability to Utilize Technology in Learning", which scored 3.8, indicate that teachers' technological skills are in the medium category. Although many teachers have started using technology in learning, they have not fully mastered the various tools and applications that can enrich students' learning experience. The utilization of technology in learning, such as the use of software to help explain lesson concepts, has begun to be applied, but it is still limited to simple uses of technology and has not been fully integrated in the learning process as a whole. This suggests that there is a need to improve training and support for teachers so that they can utilize technology more effectively in improving the quality of learning.

A more obvious limitation is seen in the competency "Ability to Develop Technology-Based Learning Media". This competency received a lower average score of 3.5. This score indicates that the majority of teachers still have difficulties in developing technology-based learning media independently. Developing technology-based learning media, such as interactive learning videos or in-depth use of educational applications, requires higher skills and knowledge in technology. Infrastructure limitations, such as the lack of adequate devices, as well as the lack of in-depth training on digital learning media creation, are the main challenges faced by teachers. Therefore, more intensive training is needed in this regard, so that teachers can be more creative in utilizing various technology-based learning media to increase effectiveness and student engagement in the teaching and learning process.

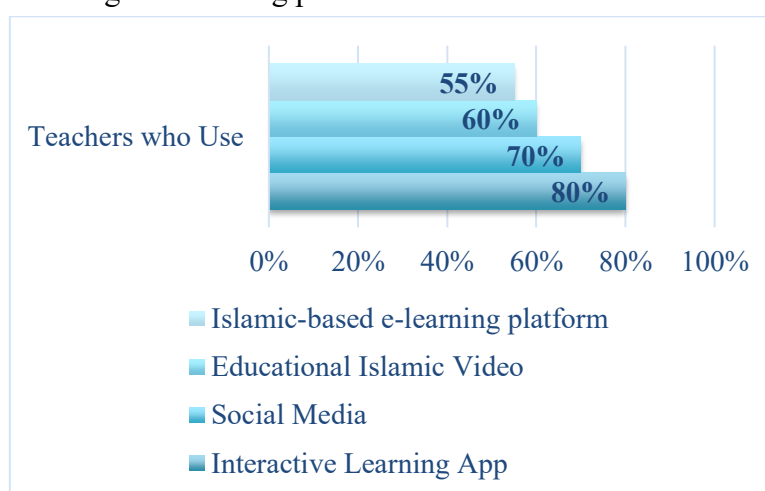


Figure 2: Use of Technology in Learning

Most Madrasah Ibtidaiyah teachers have shown significant progress in adopting technology to improve learning effectiveness. The use of interactive learning applications such as Google Classroom and Quizizz is the top choice for 80% of teachers to provide assignments and assess student understanding. By using these applications, teachers can provide materials in a more flexible and interactive manner, and allow students to work on assignments anytime and anywhere. Social media is also utilized by around 70% of teachers as an effective means of communication between teachers and students, allowing them to share course materials, discuss and provide direct feedback. This allows the learning process to be more dynamic and brings students closer to wider

learning resources outside of school hours. In addition, Islamic-based educational videos used by 60% of teachers have proven effective in delivering more complex material with a visual and auditory approach, making it easier for students to understand difficult subject concepts, while instilling relevant Islamic values.

Although technology has been widely used in the learning process, various obstacles are still faced, especially by teachers in remote areas. Teachers in remote areas who are far from the center of technological development experience different dynamics from other modern teachers who live in places with close access to technology. Nevertheless, these teachers must remain *aware* and open to technological developments as much as possible despite the limitations they face. The following illustrates some of the barriers experienced by teachers in the regions in applying technology for learning and efforts to overcome them.

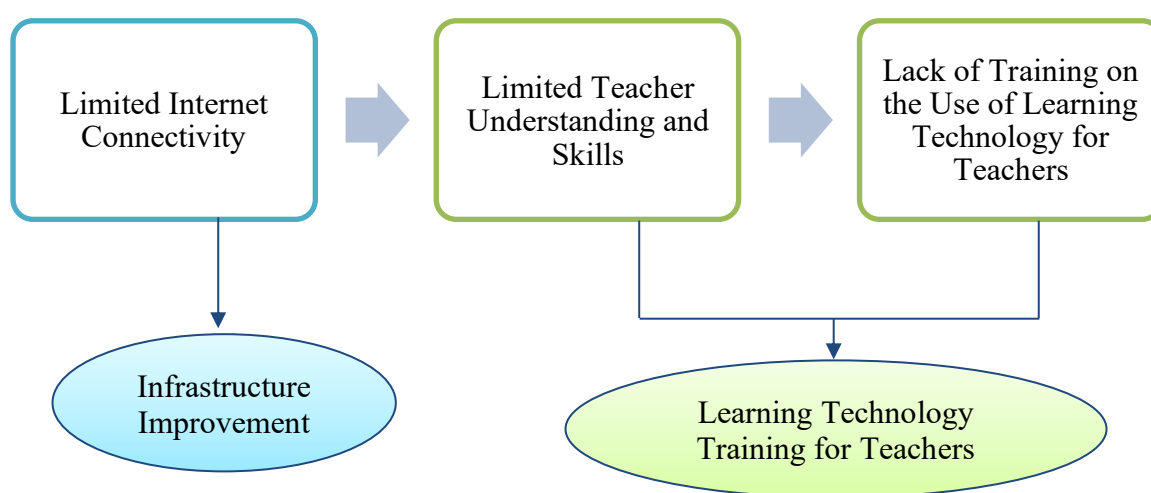


Figure 3. Barriers to Technology Utilization in Learning and How to Overcome Them

The main obstacle found is the limited internet access that hinders the maximum utilization of technology. Especially in remote areas, slow and unstable internet connections make the use of *online* applications and *platforms* less than optimal. Although around 55% of teachers have accessed Islam-based *e-learning platforms*, they often struggle to maximize the technology's features. This is due to the lack of adequate technology training, which is an obstacle in optimizing the use of technology in the classroom. Many teachers attempt to utilize various *online* education *platforms*, but are limited in their understanding and skills. Therefore, to overcome this challenge, there is a need to improve internet infrastructure and more intensive technology training for teachers. With such support, it is expected that teachers can more effectively integrate technology in learning.

DISCUSSION

In facing the digital era, Madrasah Ibtidaiyah teachers not only act as teachers, but also as mentors and facilitators in building Islamic value-based student competencies (Syaipudin & Aziz, 2024; Kurniawan et al, 2023). Teachers have the responsibility of instilling character and religious moderation values through relevant learning strategies (Masturin, 2022). Teachers not only act as teachers, but also as mentors, facilitators, and motivators in shaping student character (Gautam &

Agarwal., 2023; Kasim et al., 2021). However, in its application, there are various challenges such as time constraints, the influence of globalization, and the lack of self-control in students. Therefore, a value-based education strategy combined with technology is a necessary solution (Raja et al., 2020; Phi & Clausen, 2021). In line with this, this study highlights how Madrasah Ibtidaiyah teachers adopt technology in learning without putting aside Islamic values, so as to increase the effectiveness of education and shape students' noble character.

Although many Madrasah Ibtidaiyah teachers have integrated Islamic values in learning, challenges arise in the utilization of technology. Applications such as Google *Classroom* and *Quizizz* help deliver material more flexibly, but mastery of technology is still low, especially in the development of digital learning media. Research by Aditya (2021) states that network limitations, devices, and lack of training are the main obstacles for teachers in creating effective digital media. When implementing online learning, several studies have shown a decrease in the quality of learning in the form of low learning processes and outcomes related to student character (Santisi et al, 2020). Therefore, more innovative and interactive strategies are needed so that technology is not only a tool for knowledge transfer, but also able to maintain character values that are essential for student development.

In many areas, especially in rural areas or areas with limited resources, unstable internet access and limited supporting devices are major challenges (Hombone, 2025; Azri & Raniyah, 2024). Although technology-based applications have been used by around 80% of teachers, many have difficulty utilizing these applications to their full potential due to limited infrastructure (Agustian & Salsabila, 2021). This is in line with the findings presented by Muthe, Putri, & Jupriaman, who emphasized that limited internet access and availability of devices are the main inhibiting factors in the application of educational technology (Sophonhiranrak, 2021; Al-Mamary, 2022). In this condition, it is necessary to improve infrastructure, both in terms of more stable internet access and other supporting devices, so that technology can be used optimally.

On the other hand, to overcome the low skills of teachers in utilizing technology, organizing online and offline-based technology training is a strategic step (Burns, 2023, Fu et al., 2021). Teachers can also be encouraged to create simple and effective digital learning media, such as *offline-based* applications or *PowerPoint-based* interactive media (Kadir et al., 2023; Firdaus et al., 2025). In addition, partnerships with universities that focus on developing technology-based education are also important to provide continuous training and mentoring for teachers in remote areas (Edouard, 2023; Şahin et al., 2024). With the implementation of these solutions, it is expected that the challenges in utilizing technology in Madrasah Ibtidaiyah, especially in areas with limited infrastructure and resources, can be gradually overcome.

Overall, although Madrasah Ibtidaiyah teachers have tried to integrate Islamic values in learning well, there are still major challenges in the utilization of technology in education. One of the main problems is the limited mastery of technology by most teachers, which hinders the maximum application of technology in learning (Boonmoh et al., 2021; Asad et al., 2021). Therefore, efforts to improve teachers' digital skills are needed through more intensive and sustainable training programs (ElSayary, 2023; Markauskaite et al., 2023). With the right support, it is expected that teachers can be more effective in utilizing technology to create a more interactive

and Islamic character-based learning experience, so as to produce students who are not only intelligent but also noble and ready to face the challenges of the times.

CONCLUSION

This research confirms that the integration of technology in learning in Madrasah Ibtidaiyah brings great benefits, such as increased accessibility and teaching effectiveness, but still faces challenges in maintaining Islamic values. Various strategies, such as Islamic project-based learning and the use of interactive applications, have been implemented, but infrastructure limitations and teachers' lack of mastery of technology remain obstacles. Therefore, teachers need to receive continuous technology training, while the government and educational institutions should provide adequate infrastructure. In addition, parents play a role in assisting children to use technology wisely and adhere to Islamic values. With a strong synergy between teachers, government and parents, technology-based learning can run more optimally, creating a generation that excels academically and has Islamic character. This study has a significant impact on understanding how teachers can integrate Islamic values and technology to foster both moral character and digital competence in students.

REFERENCES

- Abadi, Z., & Kamil, Y. (2024). Implementation of the Scaffolding Method in the Influence of Value-Based Learning Models on Students' Moral Attitudes at MI Al-Fattah Darussalam. *ETNOPEDAGOGI: Jurnal Pendidikan dan Kebudayaan*, 1(4), 111-122.
- Aditya, D. S. (2021). Embarking Digital Learning Due to COVID-19: Are Teachers Ready?. *Journal of Technology and Science Education*, 11(1), 104-116.
- Agustian, N., & Salsabila, U. H. (2021). Peran teknologi pendidikan dalam pembelajaran. *Islamika*, 3(1), 123-133.
- Ahmadi. (2022). Analisis Penerapan Strategi Pembelajaran Berbasis Nilai-Nilai Islam di Madrasah Ibtidaiyah YPPI Darussalam Wonorejo: Studi Tentang Peningkatan Kualitas Pendidikan. *BADA'A: Jurnal Ilmiah Pendidikan Dasar*, 5(2), 356-358.
- Al-Mamary, Y. H. S. (2022). Examining the factors affecting the use of ICT in teaching in Yemeni schools. *Journal of Public Affairs*, 22(1), e2330.
- Amin, H. (2024). Value-based frameworks and peace education in faith-neutral, faith-based and faith-inspired schools in Islamabad: A comparative analysis. *Journal of Peace Education*, 21(1), 54-81.
- Asad, M. M., Hussain, N., Wadho, M., Khand, Z. H., & Churi, P. P. (2021). Integration of e-learning technologies for interactive teaching and learning process: an empirical study on higher education institutes of Pakistan. *Journal of Applied Research in Higher Education*, 13(3), 649-663.
- Azri, A., & Raniyah, Q. (2024). Peran Teknologi Dan Pelatihan Guru Dalam Meningkatkan Kualitas Pendidikan. *Jurnal Pendidikan Sosial Dan Humaniora*, 3(4), 4859-4884.
- Badrun, B. (2024). Enhancing Islamic education: The role of madrasah-based management in Islamic boarding schools. *AL-ISHLAH: Jurnal Pendidikan*, 16(2), 2772-2780.
- Boonmoh, A., Jumpakate, T., & Karpklon, S. (2021). Teachers' perceptions and experience in using technology for the classroom. *Computer-Assisted Language Learning Electronic Journal*, 22(1), 1-24.
- Burns, M. (2023). Distance Education for Teacher Training: Modes, Models, and Methods. *Education Development Center, Inc.*

- Carless, D. (2022). From teacher transmission of information to student feedback literacy: Activating the learner role in feedback processes. *Active Learning in Higher Education*, 23(2), 143-153.
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.
- Depita, T. (2024). Pemanfaatan teknologi dalam pembelajaran aktif (active learning) untuk meningkatkan interaksi dan keterlibatan siswa. *TARQIYATUNA: Jurnal Pendidikan Agama Islam Dan Madrasah Ibtidaiyah*, 3(1), 55-64.
- Devi, N. M., Syahputri, N. K., & Hasanah, N. N. (2023). Media Literacy Approach in Islamic Religious Education Curriculum for the Digital Era. *Journal of Contemporary Islamic Primary Education*, 2(2), 153-163.
- Edouard, G. (2023). Why and how colleges and universities should leverage technology mentoring to maximize faculty's technology integration efforts. *TechTrends*, 67(1), 124-132.
- ElSayary, A. (2023). The impact of a professional upskilling training programme on developing teachers' digital competence. *Journal of Computer Assisted Learning*, 39(4), 1154-1166.
- Fajri, M., Zurqoni, & Sugeng. (2023). Analisis Data Kualitatif dalam Evaluasi Kurikulum Program Studi Sarjana Pendidikan Agama Islam di Kalimantan Timur. *Afeksi: Jurnal Penelitian dan Evaluasi Pendidikan*, 4(1), 27-42.
- Falloon, G. (2020). From digital literacy to digital competence: the teacher digital competency (TDC) framework. *Educational technology research and development*, 68(5), 2449-2472.
- Fernández-Batanero, J. M., Montenegro-Rueda, M., Fernández-Cerero, J., & García-Martínez, I. (2022). Digital competences for teacher professional development. Systematic review. *European Journal of Teacher Education*, 45(4), 513-531.
- Ferri, F., Grifoni, P., & Guzzo, T. (2020). Online learning and emergency remote teaching: Opportunities and challenges in emergency situations. *Societies*, 10(4), 86.
- Firdaus, A., Amrullah, A., Adawiyah, L. R., Zakiah, Q. Y., & Supiana, S. (2023). Enhancing learning quality and student engagement: Utilizing digital technology in Islamic education. *International Journal of Nusantara Islam*, 11(2), 206-2018.
- Firdaus, E., Kusnanda, A. F. D., & Tankira, N. (2025). Development of Interactive Microsoft Power Point Learning Media Based on Motion Graphics on Social Studies Subject Pluralism Material. In *International Joint Conference on Arts and Humanities 2024 (IJCAH 2024)* (pp. 851-863). Atlantis Press.
- Fu, W., Liu, S., & Dai, J. (2021). *E-learning, e-education, and online training*. New York City, NY, USA: Springer International Publishing.
- Gautam, K. K., & Agarwal, R. (2023). The New Generation Teacher: Teacher as a Facilitator. *International Journal of Creative Research Thoughts*, 11(7), 2320-2882.
- Haddade, H., Nur, A., Achruh, A., Rasyid, M. N. A., & Ibrahim, A. (2024). Madrasah management strategies through Madrasah Reform program: an evidence from Indonesia. *International Journal of Educational Management*, 38(5), 1289-1304.
- Hidayat, A., Fatimah, S., & Rosidin, D. N. (2021). Challenges and prospects of Islamic education institutions and sustainability in the digital era. *Nazhruna: Jurnal Pendidikan Islam*, 5(2), 351-366.
- Hilman, C. (2025). Digital-Based Islamic Religious Education: A New Orientation in Enhancing Student Engagement and Spiritual Understanding. *The Journal of Academic Science*, 2(1), 53-65.
- Hombone, E. (2025). Smart Village sebagai Solusi Inovatif Pembangunan Daerah Terpencil. *RIGGS: Journal of Artificial Intelligence and Digital Business*, 4(1), 122-131.
- Ilmiyati, I. (2023). Implementasi Digitalisasi Madrasah dalam Meningkatkan Kualitas Pembelajaran di MI Bustanul Ulum Badas, Kecamatan Sumobito, Kabupaten Jombang. *MODELING: Jurnal Program Studi PGMI*, 10(3), 941-949.

- Imron, A. (2024). Moral Development in Students at Madrasah Through Islamic Value-Based Learning. *Civic Engagement and Social Education Journal*, 1(1), 116-121.
- Kadir, A., Yulita, N., & Boulahnane, S. (2023). Improving Teacher Professional Competence Through The Training of Information Technology-Based Learning Media in Southeast Sulawesi. *Lentera Pendidikan: Jurnal Ilmu Tarbiyah dan Keguruan*, 26(2), 311-330.
- Kasim, T. S. A. T., Yusoff, Y. M., & Mansor, F. (2021). Building Student Character through Contextual Learning Approach: Islamic Education Novice Teachers' Experiences. *Islamiyyat*, 43(2), 39-52.
- Khoir, T., Ma'arif, S., Elizabeth, M. Z., & Permata, K. I. (2025). The narrowing spaces for Islamic knowledge at Islamic higher education in Indonesia: opportunity and challenge. *Higher Education*, 1-29.
- Kurniawan, A. R., Sari, P. P., & Ayu, S. M. (2023). The Quality of Madrasa Education In The Digital Era. *Journal of Advanced Islamic Educational Management*, 3(1), 75-90.
- Makarova, E. A., & Makarova, E. L. (2018). Blending pedagogy and digital technology to transform educational environment. *International Journal of Cognitive Research in Science, Engineering and Education: (IJCRSEE)*, 6(2), 57-66.
- Mar, N. A. (2024). Integration of Technology and Islamic Education in the Digital Era: Challenges, Opportunities and Strategies. *Journal of Scientific Insights*, 1(1), 01-08.
- Marín, V. I., & Castaneda, L. (2023). Developing digital literacy for teaching and learning. In *Handbook of open, distance and digital education* (pp. 1089-1108). Singapore: Springer Nature Singapore.
- Markauskaite, L., Carvalho, L., & Fawns, T. (2023). The role of teachers in a sustainable university: From digital competencies to postdigital capabilities. *Educational technology research and development*, 71(1), 181-198.
- Masturin, M. (2022). Development of Islamic religious education materials based on religious moderation in forming student character. *Munaddhomah: Jurnal Manajemen Pendidikan Islam*, 3(4), 346-355.
- Nasucha, M. R., Khozin, K., & Thoifah, I. A. (2023). Synergizing islamic religious education and scientific learning in the 21st century: A systematic review of literature. *Jurnal Pendidikan Agama Islam (Journal of Islamic Education Studies)*, 11(1), 109-130.
- Phi, G. T., & Clausen, H. B. (2021). Fostering innovation competencies in tourism higher education via design-based and value-based learning. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 29, 100298.
- Pradana, D. A., Degeng, I. N. S., Kuswandi, D., & Degeng, M. D. K. (2024). Self-efficacy of preservice teachers in technology-based learning in diverse classrooms: a case study at an Indonesian private university. *Journal of Applied Research in Higher Education*, 16(5), 2026-2046.
- Raja, J. Z., Frandsen, T., Kowalkowski, C., & Jarmatz, M. (2020). Learning to discover value: Value-based pricing and selling capabilities for services and solutions. *Journal of Business Research*, 114, 142-159.
- Ramli, M. (2024). Industrial Era Islamic Education Revolution 4.0: Strategy for Optimizing ICT Integration in Curriculum Education Study Programs. *Jurnal Iqra': Kajian Ilmu Pendidikan*, 9(2), 242-258.
- Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2021). Balancing technology, pedagogy and the new normal: Post-pandemic challenges for higher education. *Postdigital Science and Education*, 3(3), 715-742.
- Rivera, D. A., Frenay, M., & Swaen, V. (2024). The learning design of MOOC discussion forums: An analysis of forum instructions and their role in supporting the social construction of knowledge. *Technology, Knowledge and Learning*, 29(2), 585-615.
- Saefullah, A. S. (2024). Ragam Penelitian Kualitatif Berbasis Kepustakaan Pada Studi Agama dan Keberagaman dalam Islam. *Al-Tarbiyah: Jurnal Ilmu Pendidikan Islam*, 2(4), 195-211

- Şahin, A., Soylu, D., & Jafari, M. (2024). Professional Development Needs of Teachers in Rural Schools. *Iranian journal of educational sociology*, 7(1), 219-225.
- Saleem, A., Kausar, H., & Deebe, F. (2021). Social constructivism: A new paradigm in teaching and learning environment. *Perennial journal of history*, 2(2), 403-421.
- Santisi, G., Lodi, E., Magnano, P., Zarbo, R., & Zammitti, A. (2020). Relationship between psychological capital and quality of life: The role of courage. *Sustainability*, 12(13), 5238.
- Sophonhiranrak, S. (2021). Features, barriers, and influencing factors of mobile learning in higher education: A systematic review. *Heliyon*, 7(4).
- Suroso, A., Hendriarto, P., Mr, G. N. K., Pattiasina, P. J., & Aslan, A. (2021). Challenges and opportunities towards Islamic cultured generation: socio-cultural analysis. *Linguistics and Culture Review*, 5(1), 180-194.
- Syaipudin, L., & Aziz, A. (2024). Problematic Analysis of Changes in Islamic Education in the Digital Era at Madrasah Ibtidaiyah Level in East Java Province Indonesia. *Traditional Journal of Law and Social Sciences*, 3(01), 14-28.
- Sych, T. V., Khrykov, Y. M., & Ptakhina, O. M. (2021). Digital transformation as the main condition for the development of modern higher education. *Educational Technology Quarterly*, 2021(2), 293-309.
- Tambak, S., & Sukenti, D. (2025). Islamic professional madrasa teachers and motivation for continuous development: a phenomenological approach. *Journal of Education and Learning (EduLearn)*, 19(1), 81-90.
- Taufik, H., & Rusdi, M. (2024). Teachers Challenges and Strategies in Facing the Digitalization Era in Islamic Education in Madrasahs in West Java Region. *West Science Islamic Studies*, 2(04), 184-190.
- Timotheou, S., Miliou, O., Dimitriadis, Y., Sobrino, S. V., Giannoutsou, N., Cachia, R., ... & Ioannou, A. (2023). Impacts of digital technologies on education and factors influencing schools' digital capacity and transformation: A literature review. *Education and information technologies*, 28(6), 6695-6726.
- Wahyudi, I., Sayekti, M. P., Masykur, M. A., & Prasetyo, V. F. (2024). Strategi Guru Madrasah dalam Menerapkan Kurikulum Merdeka di Madrasah Ibtidaiyah. *Madrosatuna: Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, 7(2), 77-85.
- Wallner, L. (2024). Constructing moments of insight: accounting for learning in classroom discussions on narrative fiction reading. *Classroom Discourse*, 15(4), 421-436.
- Zahraini, Z., Akib, A., Rosidin, R., & Sulaeman, O. (2025). Islamic Education Reform in the Digital Age: Challenges and Opportunities for a Modern Curriculum. *Journal of Noesantara Islamic Studies*, 2(1), 1-11.