

Islamic Boarding School Education in the Digital Era; Literature Review About Building a Relevant and Adaptive Curriculum

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Abstract

As an important part of the Islamic educational tradition, Islamic boarding school education faces great challenges to adapt to the changes brought about by the digital era. The aim of this research is to investigate important issues related to building relevant and adaptable curricula in Islamic boarding schools in the digital era. A comprehensive literature review of the latest perspectives and ideas on Islamic boarding school education and digital technology was created using this methodology. Literature analysis found several important findings, such as that to prepare students to face the demands of the digital era, Islamic boarding school curricula must include information and communication technology (ICT). In addition, the literature emphasizes how important it is to build digital skills for teachers and students, as well as how important it is to create a learning environment that supports the use of technology in Islamic boarding school education. The findings of this literature review provide valuable insight into how to build Islamic boarding school education curricula in the digital era. These findings have practical consequences, including suggestions for the decision-making process in designing a curriculum that is in line with technological developments and the demands of the times. Additionally, recommendations for further research in this area are provided.

Keywords: Islamic Boarding School Education, Digital Era, Adaptive Curriculum

Abstrak

Sebagai bagian penting dari tradisi pendidikan Islam, pendidikan pesantren menghadapi tantangan besar untuk menyesuaikan diri dengan perubahan yang ditimbulkan oleh era digital. Tujuan dari penelitian ini adalah untuk menyelidiki masalah penting yang terkait dengan membangun kurikulum yang relevan dan dapat disesuaikan di pesantren di era digital. Tinjauan literatur komprehensif tentang perspektif dan gagasan terbaru tentang pendidikan pesantren dan teknologi digital dibuat menggunakan metodologi ini. Analisis literatur menemukan beberapa temuan penting, seperti bahwa untuk mempersiapkan peserta didik untuk menghadapi tuntutan era digital, kurikulum pesantren harus menyertakan teknologi informasi dan komunikasi (TIK). Selain itu, literatur menekankan betapa pentingnya membangun keterampilan digital bagi pengajar dan siswa, serta betapa pentingnya menciptakan lingkungan pembelajaran yang mendukung penggunaan teknologi dalam pendidikan pesantren. Temuan tinjauan literatur ini memberikan pemahaman yang berharga tentang cara membangun kurikulum pendidikan pesantren di era digital. Penemuan ini memiliki konsekuensi praktis, termasuk saran untuk proses pengambilan keputusan dalam merancang kurikulum yang sesuai dengan perkembangan teknologi dan tuntutan zaman. Selain itu, rekomendasi untuk penelitian lanjutan di bidang ini juga diberikan.

Kata kunci: Pendidikan Pesantren, Era Digital, Kurikulum Adaptif

Introduction

Getting an education is the rights of every student, (Siregar, 2023c) which aims to gain a lot of knowledge and skills. (Ali Musri Semjan Putra, 2022) Education for Muslims aims to increase devotion to Allah Subhanahu wa Ta'ala, (Siregar, 2023b) which is in harmony with human nature and aims to purify humans. (Siregar, 2024b) Education through Islamic boarding schools or Islamic boarding schools has become an integral part of the Islamic educational tradition by focusing on religious values by increasing devotion to Allah, character development, and academic excellence. (Mardiah Astuti et al., 2023) Islamic educational institutions start from the Diniyah, Tsanawiyah, Aliyah and Ma'had. (Nasaruddin, Deni Suryanto, 2023) These schools aim to instill virtue, prevent extremism, promote interfaith understanding, and foster ethical values through a balanced curriculum. (Dumiyati, Dumiyati., Aries, Musnandar., Julhadi, Julhadi., Muta'allim, 2023) Apart from that, Islamic boarding schools implement multicultural education to foster harmony, respect diversity, and prevent conflict in society. (Sakinatul, Birroh., Haryono, Haryono., Yuli, 2023)

The boarding school system plays an important role in shaping the character of students by emphasizing discipline, honesty, responsibility, moderation, and religious values, adhering to the “five souls of Islamic boarding school” pattern. (*The Role Of Boarding Schools In Forming The Character Of Students (Case Study Of Imbs Miftahul Ulum Pekajangan Boarding School)* , 2023) To remain relevant, Islamic boarding schools innovate by combining modern infrastructure and teaching methods to adapt to changing times (Scott, R., 2023) especially with the emergence of the digital era, Islamic boarding schools are faced with challenges that require them to continuously adapt and update their educational approaches to remain relevant and effective.

The digital era has significantly changed the global education landscape by introducing various technological advances. (Chetna, 2023) The shift from traditional classroom learning to e-learning has revolutionized teaching methods, student engagement, and learning outcomes. (Dharmesh, Kirtikumar, 2023) Digital technology has improved the quality of education, increased accessibility, and provided opportunities for personalized learning experiences. (*Technological Invasion in the Education Sector: A Global Perspective* , 2023)

However, challenges such as the digital divide and privacy issues need to be addressed to ensure equitable access to education. (Marina, Abdurashidova., Muhammad, Eid, 2023) The integration of technologies such as extended reality, cloud computing, and

blockchain has increased the efficiency and effectiveness of the educational process, serving learners of all ages from preschool to professional education. (M., S., Dyachenko., A., V., 2022) Digital transformation also leads to the development of a lifelong digital educational footprint, enabling personalized learning trajectories and adaptive education systems.

This research aims to investigate how Islamic boarding schools can build relevant and adaptive curricula in the digital era through a literature study approach. The following is some previous research that is relevant to this research that the author has successfully analyzed, namely:

First, research with the title Quality Management of Islamic Boarding Schools in the Megatrend Era (Analysis and Literary Studies) by Aip Syaifuddin who started the research by looking at developments in an era where all life is carried out digitally, such as economic digitalization, intellectual engineering, and data systems and management. very big and sophisticated. Apart from that, the established Islamic boarding school curriculum system will change, and the world of education will face its own challenges in adapting to it. (Syarifudin, 2022)

Second, research entitled Transformation of Islamic Boarding Schools Facing the Era of Digital Revolution 4.0 by Muzakky, et al., explains the concept of Islamic boarding schools in the modern era, the challenges faced, opportunities and the best way to overcome these changes. The introduction to this article provides an introduction to Islamic boarding schools and summarizes the changes that have occurred in the era of technology 4.0. The second part explains the concept of Islamic boarding schools in the 4.0 era, including the concept of digital Islamic boarding schools that use technology in Islamic education, as well as the definition and characteristics of conventional Islamic boarding schools. With this transformation, teachers face challenges such as the rapid digital revolution, limited technological infrastructure, and anxiety about how technology can impact students. However, this article also reveals opportunities, such as expanding access to online learning and information, creating customizable curricula, and leveraging technology to expand teacher networks. The following sections show some of the best methods for converting Islamic boarding school students. Case studies of Islamic boarding schools that have successfully integrated technology and the important role of educators and support are an example. It is also considered important to collaborate with educational institutions and the technology industry. The culture and paradigm of Islamic

boarding schools must be changed, and teachers and students must be trained. This transformation emphasizes the development of technological infrastructure. Overall, this article concludes that Islamic boarding school students have made significant changes in the technology 4.0 era. Islamic boarding schools must adapt and innovate as part of the digital revolution. The future view of Islamic boarding schools emphasizes that innovation and adaptation are very important to face the challenges and take advantage of the opportunities of the 4.0 era. (Muzakky et al., 2023)

Third , research entitled Implementation of Humanism Learning in Islamic Religious Education Learning in the Modern Era, by Shodikun, et al., The results of the research show that Islamic learning in the modern era faces complex problems, such as integrating technology with religious principles and understanding the context in a multicultural environment. Developing an online learning platform that pays attention to religious values and encourages inclusive understanding between religions is also a solution that can be implemented. Apart from that, it is important to strengthen religious-based character education and integrate Islamic religious research with other fields in an interdisciplinary manner. By applying humanist learning in Islamic religious education, it is possible to produce a generation that is inclusive, empowered and has noble morals. However, to achieve success, problems such as integrating humanist values with religious teachings and improving the quality of education must be addressed. (Shodikun, Esti Zaduqisti, 2023)

Fourth , research entitled Concept of Islamic education in the digital era by Fujianti, Indah. He mentioned that education is the effort of adults to attend college to impart information, culture, and values to the next generation. "Education," meaning to educate and nurture, is used in English to describe education, especially formal education. Islamic education is one way that Muslims can realize the standard of living, culture and religion of Islam in society. The aim of this education is to spread, uphold and instill Islamic values in the next generation. On the contrary, the aim of Islamic education is to maintain, uphold and develop Islamic values originating from the Koran and Al-Hadith. It is very difficult for Islamic education to adapt to technological advances. This means that it must be adapted to meet the needs of modern society which is highly driven by technological advances, especially in the digital world. (Fujianti, nd)

Fifth, research entitled Technological Resources for Curriculum Implementation in the Digital Era by Hasanbasri, et al., Analysis of technological resources for implementing the curriculum in the digital era is the aim of this research. Resources

reviewed include books, scientific journals, and literature on technology, education, and digital curriculum. Data collection methods involve analysis of official documents, such as government policies, and interviews with teachers. The research results show that: a) technology plays an important role in ensuring successful learning, increasing interactivity and personalization, and giving people unlimited access to digital libraries. Effective use of technology in today's computer and internet era has many benefits, such as creating a customizable learning environment and improving the overall quality of education. b) The integration of technology in education faces challenges such as curriculum incompatibility, lack of teacher training, and limited infrastructure and policy support. c) The use of technology in education is beneficial and enhances the learning experience. Challenges such as access and teacher training gaps can be addressed through a holistic approach and external collaboration, highlighting the importance of policy. To achieve this, a holistic effort is needed that covers all aspects of education, including, but not limited to,. (Hasanbasri et al., 2023)

From the several studies above, research that focuses on building a relevant and adaptive Islamic boarding school curriculum in the digital era has not been found. So through this research we hope to provide in-depth insight into the strategies and approaches needed to integrate technology in the Islamic boarding school curriculum. It is hoped that the results of this research can become the basis for developing a curriculum that is responsive to technological developments and the demands of the times, and can make a significant contribution to the renewal of Islamic boarding school education in the digital era. Thus, understanding how Islamic boarding schools can adapt to the digital era is not only important to ensure the continuity of traditional Islamic education, but also to prepare the younger generation of Muslims to face the complexities of an increasingly connected modern world.

Research Methods

The literature study method, commonly known as library research, is used in various research fields. (Sultan & Abidin, 2022) This approach involves reviewing existing academic publications to gather information and insight on a particular topic. (Yuliansyah, 2016) Additionally, literature reviews play an important role in understanding advances in survey techniques to increase response rates in social science research. (Guanlong, Li., Yueqing, 2019)

This research is research qualitative with descriptive analysis techniques with library research where this research was attempted describe those phenomena existing, taking place at the moment or the moment that past. This article highlights Islamic boarding school education in the digital era: a literature review on building relevant and adaptive curricula .

Results And Discussion

Islamic educational institutions must be able to build a generation of Muslims who are strong, master science, technology and have noble morals. (Siregar et al., 2023) Every educational institution, including Islamic boarding schools, adapts to the digital era by digitizing the education system and implementing communication strategies through e-learning portals. (Kardi, Kardi., Hasan, Basri., Andewi, Suhartini., Fitri, 2023) (Sidiq & Mubin, 2022) These schools incorporate modern aspects such as English language programs, Quran memorization programs, and even marching band programs to attract students and stay relevant. (Setyaningsih & Prihantoro, 2019) The shift to online platforms such as “Pesantren Online” meets individuals' instant religious information needs, reshaping perceptions of traditional Islamic boarding schools. (C, 2022) The COVID-19 pandemic has further emphasized the importance of technological literacy and adaptability in education, prompting European public schools to develop interventions to cope with the imposed changes, including improving digital skills and internal communication, (*Digital Adaptation in Education: A Case Study and Intervention Proposal* , 2022) as well as digital literacy which includes an understanding of how to use digital technology effectively, critically and creatively. (Siregar, 2024a) By embracing digital tools and innovative programs, boarding schools can build curricula that are relevant and adaptive in the digital era.

Technology Integration in Islamic Boarding School Curriculum

According to research, incorporating information and communication technology (ICT) into the Islamic boarding school curriculum has great potential to improve the quality of education. The use of digital learning platforms, educational applications and media can enhance students' learning experiences and facilitate their access to more diverse and relevant learning resources.

Islamic boarding schools are gradually integrating technology into their curriculum to keep pace with modern advancements and improve educational practices.

Research shows that these schools are adopting information systems, Android-based applications, and digitizing administration and learning processes. (Marier et al., 2022) (Sidiq & Mubin, 2022) While some schools are still traditional in their approach, there is a growing openness to incorporating technology-based media to teach Arabic, supported by factors such as internet connectivity and staff capabilities and student. (Silviana, Putri, Kusumawati., Unik, Hanifah, Salsabila., Indah, Purwanda., Nasirudin, Ahmad., Caya, Tri, 2022) (Encep, Supriatna., Didin, Saefuddin., Didin, Hafidhuddin., Lani, Melani ., Siti, Syafi'atul, 2023) Additionally, vocational schools combine formal education with Islamic boarding school practices, emphasizing character education alongside technical skills. (Ritonga et al., 2022) This shift towards technology integration reflects broader efforts to improve educational quality, efficiency, and relevance in the unique context of Islamic boarding schools.

The integration of technology in the Islamic boarding school curriculum is an important step to update learning methods and prepare students to face the demands of the digital era. The following is a further discussion about the integration of technology in the Islamic boarding school curriculum: 1) Use of Digital Learning Platforms: Islamic boarding schools can use digital learning platforms such as learning management systems (LMS) or special education applications that allow students and teachers to interact, access learning materials, and participate in online discussions. Platforms like this make distance learning easier and allow Islamic boarding schools to provide wider access to students. 2) Educational Applications and Multimedia: In the Islamic boarding school curriculum, the use of educational applications and media can improve students' learning experiences. For example, digital Qurans, Arabic language applications, and Islamic games can be used in interactive and engaging ways to improve students' understanding of subject matter. 3) Access to a wider variety of learning resources: Islamic boarding schools can use technology to give students wider access to a variety of relevant digital learning resources, such as electronic books, online articles, learning videos, and others. 4) Project-Based and Collaborative Learning, Project-based and collaborative learning methods can now be applied in Islamic boarding schools thanks to technology. With online platforms, students can work together on research projects, presentations, or group discussions, which helps them learn communication, problem solving, and working together. 5) Monitoring and Evaluation of Learning. In addition, technology can be used to monitor and evaluate student learning progress. Learning management systems can be

used to track students' learning activities, measure how well they are achieving learning goals, and provide rapid feedback to improve student performance.

Developing Digital Competence for Teachers and Students

Meeting public needs in the long term is the essence of development. (Siregar, 2023a) The development of digital competence of teachers and students must be initiated by the person in charge of the institution, in this case the school principal, (Siregar et al., 2024) because school principals who understand the needs and achievements of schools, such as Islamic boarding school teachers and students, are important to obtain digital skills, therefore teachers must have sufficient skills and knowledge to use technology in the learning process, and students must know how to use digital tools effectively in everyday life and learning.

The development of digital competencies is critical for teachers and students in the modern educational landscape. Teachers need to have digital competencies to effectively implement digital pedagogy and engage students. (Maritza, G., 2023) . As professional teachers, teachers must develop their competencies and pay attention to problems that arise in educational institutions. (Siregar, 2023d) This aims to ensure that teachers have better mastery of learning materials and methodologies and are able to have the soul of an educator, so that they are able to carry out their teaching. (Musri et al., 2023) The study emphasizes the importance of continuous training for teachers to improve their digital competence, especially in utilizing ICT tools for the teaching and learning process. (Éric, 2023) Additionally, the digital competence of teachers in higher education institutions is highlighted as essential for imparting modern digital knowledge and skills to students : (Klochko & Prokopenko, 2021) Research also shows the need for educators to enhance their digital competencies to meet the changing needs of students and the education sector, emphasizing the importance of incorporating technology-enhanced learning strategies and increasing digital resources and support. (Sarva et al., 2023) Overall, the integration of digital educational technology is critical to creating engaging and empowering learning experiences for teachers and students

The use of technology in the Islamic boarding school curriculum is very important. Teachers and students must acquire digital skills. 1) Training and Professional Development: Several important things that need to be considered in developing the digital competence of teachers and students are as follows: Islamic boarding schools must provide training and professional development programs that aim to improve teachers'

digital capabilities. This training may include the use of technology tools, digital learning applications, and online teaching strategies. Teachers should also be given opportunities to learn and interact with their students online. 2) Digital Training Curriculum: Islamic boarding schools can create a curriculum that focuses on developing the digital skills of teachers and students. This curriculum may include training modules on software use, educational applications, internet safety, digital literacy, and ethics in the use of technology. 3) Digital Competency Certification: Islamic boarding schools can consider providing digital competency certification to their teachers to ensure high standards in the use of technology in learning. This certification can show that teachers have sufficient ability and knowledge to utilize technology in teaching. 4) Project Based Learning: Project based learning is a great way to build digital competency because it allows students to use technology skills to create real-world products or solutions. Teachers can help students with projects that require technology skills such as web design, video creation, or app development. 5) Monitoring and Support: It is important for Islamic boarding schools to track and assist teachers and students in developing their digital skills. This can be achieved through advanced training sessions, technical support, online discussion forums, or mentorship between teachers.

Establishment of a Supportive Learning Environment

Technology in Islamic boarding school education is assisted by environmental factors, Islamic boarding schools must create a learning environment that supports and supports the use of technology, including adequate access to ICT infrastructure, teacher training, and support from Islamic boarding school leaders and the local community.

Creating a supportive learning environment is essential to improving learning outcomes and wellbeing. Strategies such as providing positive feedback, actively engaging with learners, admitting mistakes, and offering support and protection during decision making contribute to an atmosphere of safety and trust. (*A Safe, Supportive Environment* , 2023) Additionally, interventions such as sharing behavioral profiles and promoting collaboration between students and educators can have a positive impact on the quality of the learning environment. (Niluh, Tarina, 2023) Academic support services play an important role in reducing anxiety, increasing self-confidence, and improving academic performance, which ultimately helps student retention. (Nikki, Milne., Chanelle, Louwen., Dianne, P., Reidlinger., Josephine, L., Bishop., Megan, Dalton.,

Linda, H, 2022) Additionally, innovative initiatives such as 'Bookopolis' can transform spaces learning, encouraging active learning, and fostering a reading culture, thereby creating a responsive and engaging learning environment. (Voisin et al., 2023)

Building a supportive learning environment is very important to support the use of technology in the Islamic boarding school curriculum. To create a supportive learning environment, here are some actions that can be taken: 1) Adequate ICT Infrastructure: Islamic boarding schools must have adequate ICT infrastructure which includes fast and stable internet access, hardware such as computers, tablets, and laptops, as well as software such as learning management systems and learning applications. By providing this infrastructure, Islamic boarding schools can ensure that teachers and students have easy and reliable access to technology. 2) Supportive Physical Environment: In addition to information and communications technology (ICT) infrastructure, it is also important to create an environment that supports the use of technology in learning. Islamic boarding schools can offer classrooms equipped with technological devices such as digital whiteboards, projectors, and interactive screens, in addition to spaces that allow teachers and students to work together and talk to each other. 3) Support from Islamic Boarding School Leaders: Islamic boarding school leaders play an important role in creating a supportive learning environment. In addition to ensuring that the necessary resources are available and accessible, they must support and encourage teachers to implement technology in the curriculum. 4) Training and Technical Support: Islamic boarding schools can offer training and technical support to teachers and employees to help them learn how to use technology in education. This may include training on the use of specific software and hardware, as well as technical support, which can be accessed both online and offline. 5) Innovative and Open Learning Culture: Creating an innovative and open learning culture in Islamic boarding schools is very important. This should make teachers and students feel comfortable trying new technology and sharing experiences and knowledge. This can encourage teacher-student cooperation in developing and using useful technology.

Challenges and Obstacles in Adapting Technology

Innovative and Open Learning Culture: Creating an innovative and open learning culture in Islamic boarding schools is very important. This should make teachers and students feel comfortable trying new technology and sharing experiences and knowledge. This can encourage teacher-student cooperation in developing and using useful

technology. Limited Access and Infrastructure: One of the main challenges is limited access to technology and adequate ICT infrastructure.

Technology adaptation in boarding schools faces challenges and obstacles such as limited facilities for subjects such as mathematics, chemistry and physics. (Ilham, Akbar., Fauziyah, 2022) Islamic boarding schools have traditionally used non-technological teaching methods, but there are opportunities for change with internet access and the technological capabilities of staff and students. (Ritonga et al., 2022) Rapid technological developments pose challenges for Islamic boarding schools to implement technology even though it has a positive impact on the quality of education and creating the Rabbani generation. (Indah et al., 2022) Interestingly, boarding students report better sleep than day students due to structured routines and limited use of technology, emphasizing the importance of promoting sleep and minimizing homesickness in boarding schools. (Lushington K., Reardon A., 2022) . Applications of solar power in Islamic boarding schools, such as lighting and hydroponic farming, demonstrate cost effectiveness and reduced monthly bills, highlighting the benefits of solar technology in educational settings. (Hartawan, Hartawan., Fachrul, Kurniawan., H., Haris., Aji, Prasetya, Wibawa., Akshaya, 2022)

In some areas, Islamic boarding schools may experience difficulties in providing stable internet access, supporting hardware or software, here are some things that can be concluded in the challenges and obstacles in overcoming technology in Islamic boarding schools: 1) Lack of Technology Skills and Knowledge: Many teachers in Islamic boarding schools Islamic boarding schools may not know or be unable to use technology to teach. These skills require training and technical support. 2) Anxiety about Negative Influences: Some people may worry about how technology can damage Islamic boarding school traditions and values. There needs to be a wise approach to incorporating technology, taking into account the Islamic principles that underlie education in Islamic boarding schools. 3) Difficulty in Adapting Curriculum and Learning Methods: Integrating new technology into established curricula and learning methods can be challenging. This requires collaboration and innovative ideas from teachers, employees and Islamic boarding school leaders. 4) Costs and Resource Limitations: The use of educational technology can also involve significant costs, such as paying for software and hardware, as well as costs for technical support and training. Lodges that have limited resources may have difficulty dealing with these costs. 5) Suitable for Local Needs and

Cultural Context: Not all technology may be suitable for the needs and cultural context of Islamic boarding schools. Therefore, it is important to choose technology that is relevant and can be used easily by teachers and students in Islamic boarding schools.

CONCLUSION

Based on findings from the literature, there are several practical implications that can be taken for developing Islamic boarding school education curricula in the digital era. This includes the need for investment in ICT infrastructure, ongoing training for teachers and staff, integration of technology in curriculum planning, as well as further research to understand the impact and benefits of using technology in Islamic boarding school education

The following are some practical implications and recommendations in this research:

1. **Training and Skills Development:** Islamic boarding schools must conduct technology training and skills development programs for teachers and staff. The program must include effective teaching strategies using technology.
2. **Ongoing Technical Support:** Islamic boarding schools must provide teachers and employees with ongoing technical support to help them overcome technical problems that arise when using technology in learning.
3. **Curriculum Update:** Islamic boarding school curricula must be updated to allow the use of technology in learning. This includes adding courses or study units that focus on digital literacy, internet ethics, and the use of technology in education.
4. **Improved Access and Infrastructure:** Islamic boarding schools must work together with the government, non-governmental organizations, and other parties to gain better access to information technology (ICT) infrastructure, which includes stable internet access and necessary hardware.
5. **Prioritize the Use of Relevant Technology:** Islamic boarding schools must choose technology that suits local cultural needs and context. They should choose technology that can help improve learning and teaching effectively while maintaining the Islamic values and principles that underlie their education.
6. **Evaluation and Monitoring:** Islamic boarding schools must carry out continuous evaluation of the use of technology in Islamic education. Teachers and staff can hold regular forums or meetings where they can share experiences, best practices,

and challenges they face when using technology in learning. In this way, Islamic boarding schools can make necessary improvements and adjustments over time.

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