



DIGITAL TRANSFORMATION IN ISLAMIC EDUCATION: ACHIEVING EQUITABLE ACCESS THROUGH DIGITAL INCLUSION IN THE ERA OF DISRUPTION

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Abstract:

In today's world of technological advancements and changes in teaching methods, digital transformation in Islamic education is becoming increasingly important in this disruptive era. This study examines how digitalization can be used to improve access to Islamic education through digital knowledge. The main focus is on the integration of information technology into the educational process, the development of digital skills for students, and the use of intuition to empower marginalized communities. This study uses a qualitative approach with literature review and policy analysis as its primary methodology. The study findings suggest that digital transformation can improve access, raise educational standards, and strengthen the reach of Islamic education worldwide. For this transformation to be successful, collaboration between governments, educational institutions, and the general public is needed to create a healthy and stable digital ecosystem.

Keywords: *Digital Transformation, Islamic Education, Access Justice, Digital Inclusion, Disruption Era, Educational Technology, Digital Literacy, and Learning Innovation*

INTRODUCTION

Many aspects of human life, including education, have undergone significant transformations as a result of the digital revolution. The paradigm shift from traditional systems to digitally based systems in the global education framework has been driven by the emergence of the disruptive era, characterized by the widespread use of information and communication technology (ICT). This shift affects not only technological dimensions but also social, cultural, and even spiritual aspects (UNESCO, 2022a). As a fundamental component of the national education system, Islamic education cannot halt this trend of change. Islamic educational institutions, including madrasahs, pesantrens, and Islamic-based schools, face challenges in updating their strategies and teaching systems to be more inclusive, responsive, and technologically adept in addressing contemporary demands and the rapid acceleration of digitalization. In Islamic education, digital transformation goes beyond merely using digital devices; it also encompasses developing digital curricula, implementing distance learning (PJJ), and digitizing institutional administration in accordance with Islamic principles (Nugroho, 2021a).

The term "Disruptive Era" refers to a period marked by revolutions in technology, economy, and society. This era creates an environment distinct from previous times, influencing various aspects of human life, such as the

advancement of digital technology (Ahmad, 2023). According to James Mittelman, the disruptive era redefines the dimensions of space and time in social relations. It signifies a shift from old realities to new ones, exemplified by today's digital era (MM, 2024). However, not all groups are equally affected by digital transformation. Disparities in digital literacy and access to technology remain significant barriers, particularly in remote, underdeveloped, and outermost regions (3T). A survey by the Indonesian Ministry of Religious Affairs found that most teachers lack substantial digital competence, and only 38% of madrasahs have adequate internet access. Another major barrier to implementing digital learning is the low level of digital literacy among educators (Fauzi, 2020). The concept of digital inclusion becomes highly relevant in this context. Digital inclusion refers to the ability of all societal groups to access, use, and maximize digital technology. UNESCO identifies four main components of digital inclusion: policy support, digital literacy, device and network accessibility, and access to relevant content. Since Islamic ideals also emphasize social justice and the equitable distribution of information, digital transformation in Islamic education can be directed toward ensuring equitable access to education through an inclusive approach (UNESCO, 2022b).

According to data published by the Indonesian Ministry of Communication and Information Technology, in 2021, as many as 170 million Indonesians had internet access, and this number continues to grow rapidly. This phenomenon underscores the importance of digital equity both now and in the future (Wayan Sudira, 2024). To create a civilized digital ecosystem that fulfills Islamic ideals, Islamic education must hold strategic significance. Beyond embracing technology, digital transformation must support the objectives of Islamic education to produce morally upright individuals with global competitiveness. Therefore, to achieve equitable access through a digital inclusion approach in addressing the challenges of the disruptive era, a critical and comprehensive study is needed to investigate how digital transformation in Islamic education can be directed (Wahyudin, 2021).

RESEARCH METHODS

This study employs a qualitative descriptive research design, conducted using the library research technique, which involves utilizing relevant literature sources related to the research problem and collecting data by reviewing library materials that are directly connected to the study. This approach was chosen because it is suitable for exploring in depth the theoretical concepts, policies, and practices of digital transformation in Islamic education, as well as its relevance to achieving equitable access through digital inclusion (Zed, 2008). The library data collection technique used relies on secondary data obtained from various scholarly sources, such as academic journals, books, research reports, policy documents, articles, and other relevant materials. The reviewed literature concerns topics such as digital transformation in Islamic education technology, equitable access, digital inclusion, and social justice in the disruptive era (Nugroho, 2021b). Data analysis was conducted using the content analysis method.

The data analysis technique involved re-examining the validity of literature related to the concepts of digital transformation, challenges in equitable access, strategies for digital inclusion, and Islamic values in digitalization. This process included aligning the content with the discussion, constructing an analytical framework, and subsequently preparing the scientific manuscript.

According to Krippendorff, content analysis allows researchers to interpret the meaning of textual data within broader social and cultural contexts, including in Islamic studies (Krippendorff, 2013). Data validity was strengthened through source triangulation, which involved comparing information from various sources to ensure consistency and reliability. In addition, the researcher engaged in critical reflection on potential biases and limitations inherent in each source (Moleong, 2019). In qualitative research, the process of inquiry is often more significant than the findings themselves. The methodology becomes a crucial factor to consider. As the primary research instrument, the researcher must position themselves as objectively as possible to ensure that the collected data is credible and accountable (Safarudin, 2023).

RESULTS AND DISCUSSION

The Urgency of Digital Transformation in Islamic Education

Islam views education as a vital element and ensures that no generation is left in a state of weakness. Islam aspires to produce generations grounded in Sharia, noble character, and steadfast faith. To shape individuals of excellence, Islamic religious education plays a crucial role. It must remain the primary means of countering negative attitudes that threaten the essence of humanity in the modern era. The aim of Islamic religious education is to develop the spiritual potential of learners and shape them into individuals who believe in Allah SWT, are God-conscious, and possess noble character, encompassing ethics, morals, and personality. Therefore, introducing, imparting knowledge of, understanding, and teaching religious principles, along with the ability to apply these values in daily life—both individually and collectively—form an integral part of enhancing students' spiritual potential. Islamic religious education is thus essential for safeguarding the nation's future by guiding the next generation to adapt effectively to societal changes. It functions as a guide for character development during the disruptive era, enabling resilience in facing rapid advances of the times (Dwi Andriani, 2022).

The advancement of digital information technology must be accompanied by the development of digital literacy skills (Muflihin, 2020). Beyond technology itself, digital transformation in Islamic education aims to address issues of access disparity and improve educational standards. Islamic educational institutions must innovate within the disruptive era to remain relevant to contemporary demands. Wahyudin argues that, given the significant social and technical shifts, Islamic education must undergo digital transformation as an institutional form of *ijtihad*. The systematic process of changing how technology is utilized to improve learning effectiveness is known as digital transformation. In the context of Islamic education, this involves not only adopting technology but also synchronizing digital advancements with Islamic ideals. To remain relevant to the needs of today's learners, who live in the digital era, Islamic education must align itself with technological developments. Such changes include adopting Learning Management Systems (LMS), digitizing learning materials, and implementing online learning supported by interactive multimedia. This is particularly crucial for children in the 3T regions (*tertinggal, terdepan, and terluar*), who traditionally face challenges in accessing formal education, as it provides greater flexibility in terms of time and location (Wahyudin, 2021).

Equitable Access Through Digital Inclusion

One of the primary objectives of digital transformation is to create

equitable access. Digital inclusion ensures that all learners, regardless of their socio-economic background, have equal opportunities to access Islamic educational services. According to UNESCO, digital inclusion in education encompasses access to devices, internet connectivity, digital skills, and relevant, inclusive learning content (UNESCO, 2022b). However, the challenges are complex, as many madrasahs and pesantrens still lack adequate digital infrastructure. This is reinforced by data from the Ministry of Religious Affairs, which records that only 38% of madrasahs in Indonesia have stable internet access. In addition, low levels of digital literacy among teachers remain a barrier to the equitable implementation of digital transformation (Fauzi, 2020).

As younger generations grow up surrounded by technology and the internet, educational strategies must leverage digital media to disseminate religious teachings. The integration of technology can make Islamic Religious Education (PAI) learning more engaging and dynamic, thereby increasing student motivation. The development of a relevant curriculum should be a priority for Islamic religious education policy in the digital era. Topics related to information and communication technology should be incorporated into the existing curriculum. When the curriculum is flexible enough to adapt over time, students learn religious principles alongside their application in the digital realm of daily life. Teacher training and professional development in the digital era must also be prioritized. As the primary educators in religious instruction, teachers should be equipped with appropriate technological skills to optimize the learning process. With ongoing training on the use of technology in Islamic education, teachers will be better able to deliver lessons effectively and respond to students' questions.

Digital literacy must be a top priority in Islamic religious education policy in the digital age, teaching students to use technology ethically and wisely. This includes the ability to critically evaluate information obtained online, especially when it concerns religious doctrine. Digitally literate students will be able to discern information and avoid content that contradicts Islamic principles. However, policies related to Islamic religious education must address the challenges posed by digital technology. Misunderstandings of religious teachings may arise due to the rapid and diverse spread of information. Therefore, to distinguish between knowledge aligned with Islamic beliefs and that which is not, the education system must train students to think critically and analytically about the information presented to them.

Moreover, Islamic religious education policy should make use of social media. Social media offers a broader audience reach, particularly among young people. Students are more likely to understand and embrace religious education if engaging and educational content is produced for social media platforms. In designing policies for Islamic religious education, collaboration between the community, educational institutions, and the government is essential. All stakeholders must be involved in the policy-making process to ensure that education remains inclusive and responsive to societal needs. Through effective collaboration, educational policies can better address the challenges of the digital era.

Islamic religious education policies must also ensure that all students, especially those living in rural or underdeveloped areas, have access to the programs. In the digital era, access to technology is crucial for facilitating the teaching and learning process. Therefore, to enable all students to participate effectively in Islamic religious education, the government must guarantee access

to both devices and the internet. Additionally, the mental health impacts of the digital era on students must be considered within educational policy. Social media and the digital world often place pressures on students that can negatively affect their mental well-being. To help students overcome these challenges, educational policy should incorporate initiatives that promote mental health, such as counseling services and stress management instruction (Ritonga, 2024).

Digital Inclusion Strategies for Equitable Access

The integration of technology into Islamic Religious Education encompasses several key elements, including integration models, instructional techniques, and their impact on students' understanding of religious content. Effective strategies for incorporating digital technology into Islamic Religious Education include the following: (1) Approach - When integrating digital technology into Islamic Religious Education, it is essential to consider students' needs and potential, while also adapting to the local context and teachers' capabilities. (2) Integration Models – Various models, including collaborative, informative, and productive, can be employed. In the collaborative model, digital technology facilitates communication between educators, students, and Islamic educational institutions. The informative model is used for managing and accessing information, while the productive model fosters creativity and skill development among students. (3) Implications for Student Understanding – By utilizing diverse media, models, and teaching strategies, digital technology integration can enhance students' comprehension of religious content, making learning more engaging and participatory. Furthermore, students from various regions and communities benefit from technology's ability to enable interaction and competition among Islamic educational institutions.

While integrating modern technology, it is essential to uphold traditional principles such as simplicity, honesty, justice, and compassion within the framework of Islamic education. By applying technology wisely, Islamic Religious Education can equip students to preserve these values in the digital age (Dhiya Salabila, 2024).

The creation of teaching materials and learning media based on digital technology is part of the educator's role in leveraging technology, in line with educational developments in the digitalization era. However, for successful and relevant character education, educators must also possess digital literacy skills. According to Syafi'i Ma'arif, education requires a long-term process to enrich individuals intellectually and spiritually, enabling them to develop their lives with specific aspirations and goals, particularly to produce outstanding human beings (Zurqoni, 2016).

Teachers in the digital era need to develop the following competencies: (1) Ability to create and implement technology-based learning such as the Internet of Things (IoT). To make learning innovative and dynamic, teachers must use applications, online learning environments, and educational software that foster active student participation. (2) Ability to commercialize technology – Teachers should utilize technological innovations to inspire and foster entrepreneurship among students by creating commercially viable technology-based projects that provide practical experience in producing valuable and innovative products. (3) Globalization skills – Teachers must have global awareness and cross-cultural competencies to navigate a borderless world, teaching students about cultural diversity, critical thinking in global contexts, and solving global issues. (4) Future strategy competence – The capacity to plan for rapid changes in the future,

utilizing data and analytics to facilitate staff mobility, student exchanges, identify educational trends, and engage in collaborative research aligned with the Sustainable Development Goals (SDGs). (5) Counseling skills – Teachers should act as counselors who can address students' psychological needs, fostering emotional intelligence, providing emotional support, and creating an inclusive learning environment to mitigate digital-era stress.

By applying these five competencies, educators can serve as change agents who equip the next generation with the skills, values, and character needed to meet digital-era challenges (Fahman Arbia, 2024). Government and educational institutions have implemented several strategies, such as: (1) Curriculum Digitalization – Developing digital learning materials grounded in Islamic values. (2) Teacher Training – Enhancing teacher capacity through ICT training and the use of Learning Management Systems (LMS). (3) Technology Partnerships – Collaborating with platforms such as SiberMu and Madrasah Digital.

Notable best practices include the Madrasah Digital program developed by the Directorate of KSKK Madrasah, Ministry of Religious Affairs, which has successfully increased digital learning capacity in several regions. Platforms like SiberMu (Sistem Belajar Muhammadiyah) and Ruang Guru Madrasah demonstrate effective synergy between educational institutions and technology providers (Nugroho, 2021c). UNESCO states that effective digital inclusion consists of four dimensions: access, affordability, literacy, and content relevance (UNESCO, 2022b). The success of these strategies depends heavily on strengthening human resource capacity, providing digital infrastructure, and ensuring policy support for equitable access. This approach positions digital transformation in Islamic education not only as a tool for efficiency but also as a means to achieve social justice.

Considering these factors, efforts to make education more contextual, responsive, and adaptive to contemporary demands are reflected in the evolving role of teachers in learning methodologies. Teachers serve as value managers and bridges between Islamic teachings and the digital world—now an integral part of students' lives—within the framework of Islamic Religious Education. This strengthens their role as change agents in shaping a generation of technologically literate, devout, and intelligent Muslims, rather than diminishing their significance in the learning process.

Technology-based learning—the use of various devices and digital platforms to enhance, support, and extend teaching and learning—has become essential in adapting education systems to the demands of the digital era. This paradigm shift allows teachers to serve as mentors, guides, and facilitators, encouraging students to learn actively from diverse digital resources rather than relying solely on the teacher as the primary source of knowledge. By incorporating electronic media such as computers, smartphones, the internet, and various learning applications, education becomes more dynamic, interactive, and adaptable. Students feel more connected to their technologically advanced world, which positively influences engagement and motivation (Hartika, 2025). According to Fitriyani, teaching quality directly affects students' understanding of the material and their learning motivation. In addition to teacher performance, pedagogical approaches, classroom interactions, curriculum readiness, and the use of instructional technology also play significant roles (Ernawati & Zamroni, 2025).

Implications of Islamic Values in Digital Transformation

The research findings indicate that inclusive education in Islamic educational institutions in the Era 5.0 has developed as a response to the changing times, characterized by the widespread advancement of digital transformation and public participation. The inclusive leadership that has emerged is marked by openness to diversity, active participation from all stakeholders, the utilization of digital technologies, and adherence to Islamic principles as the foundation of ethics and morality. Leaders of Islamic educational organizations, both in schools and pesantren, have become more flexible and cooperative in responding to change by encouraging the participation of teachers, students, parents, and the wider community in decision-making processes and the implementation of educational programs. The use of digital platforms such as Google Workspace for Education, Zoom, and WhatsApp groups, as well as web-based academic information systems, has facilitated effective communication and coordination across organizations. This not only enhances the quality of interaction but also accelerates the process of information gathering and collective decision-making (Mamduh Nuruddin, 2025).

Beyond the technical aspects, digital transformation in Islamic education must take into account Islamic principles and values in the use of technology. The ultimate aim of Islamic education—to create the ideal human being with high moral character and knowledge—must remain consistent with the digital revolution. The concept of ta'dib, which seeks to produce individuals who are morally upright and intellectually broad-minded, should remain a central demand of Islamic education. To ensure that digital content continues to reflect Islamic principles in online interactions, such content must prioritize ethical and Islamic values, promote morally responsible learning, and be designed in line with the concept of digital civility (S.M.N, 1993).

The integration of Islamic principles into the development and implementation of educational technology is therefore a primary necessity. The objectives of Islamic law (maqāṣid al-sharī'ah), such as the preservation of life, intellect, lineage, and wealth, must be considered when developing digital learning platforms for use in Islamic educational institutions. In this regard, technology cannot be regarded as neutral; rather, it must function as a tool for moral education and da'wah, helping students develop Islamic character. Another essential element in the evolution of Islamic education is the ethics of digital communication. Teachers, students, and other education professionals who use social media must adhere to Islamic ethics in both written and visual communication. Digital plagiarism, fraud, hate speech, and the misuse of digital images are practices contrary to Islamic values of integrity and honesty. Therefore, digital literacy education in Islamic institutions must include the teaching of Islamic media ethics alongside technical competencies.

Consequently, the creation of a comprehensive Islamic digital ethics framework cannot be separated from the strategic approach to the digitalization of Islamic education. The development of a digital ecosystem that is not only technologically advanced but also civilized, moral, and spiritual should be led by Islamic educational institutions. In the long term, this will foster a generation of Muslims who are not only technologically literate but also God-conscious—a generation capable of mastering technology without compromising moral and spiritual integrity (Mudiono, 2025). As stated by K.H. Hasan Abdullah Sahal, a leader of Pondok Modern Darussalam Gontor, "The method is more important than the material, the teacher is more important than the method, and the soul

of the teacher is more important than the teacher himself” (Sabran, 2022).

Access Disparities and Challenges of Digital Inclusion

The ability to use digital technology wisely, morally, and effectively is known as digital literacy. Beyond technical proficiency with digital devices, this literacy encompasses essential understanding of digital data, security awareness, and the capacity to adapt to the ever-evolving technological advancements. Significant issues remain regarding the level of digital literacy in Indonesia. Rural residents and the elderly have significantly lower levels of digital literacy. According to the Agency for the Assessment and Application of Technology, this is due to a lack of education, digital skills training, and access to suitable devices and reliable internet connectivity (Asdhika Sinaga, 2025).

In the current digital era, technology has transformed the paradigm of learning in general, and religious education in particular. Beyond enhancing accessibility and efficiency, the use of technology in Islamic Religious Education (PAI) aims to improve the quality of learning and enable a more engaging and dynamic learning environment. In addition to educational resources, technology has also transformed the administration and assessment of Islamic Religious Education. Educational information systems can be used to track student achievement, monitor engagement, and analyze data to identify learning patterns that may require further attention. This provides teachers with opportunities to offer more detailed and individualized feedback to their students and to adjust teaching strategies to meet the specific needs of each learner.

However, there are also shortcomings in the use of technology in teaching Islamic Religious Education. Among them is the need to ensure that the fundamental religious principles being taught are not diminished by the use of technology. To ensure that technology continues to complement the primary goals of religious education, it must be integrated carefully and in alignment with Islamic moral and ethical principles. Therefore, integrating technology into Islamic religious education is not merely about leveraging it for personal benefit, but rather as a means to enhance student learning, expand access to Islamic knowledge, and equip the next generation of Muslims to face modern challenges with strong religious integrity and wisdom (Rahmadani, 2024).

For children with special needs, reducing educational inequality is greatly supported by the implementation of inclusive education, aided by digital technology. Regardless of a student’s physical, mental, or sensory limitations, inclusive education seeks to provide them with equal opportunities. Digital technology can help children with special needs overcome challenges they often face in traditional classroom settings. For example, students with visual impairments can use text-to-speech devices or screen readers, while students with hearing impairments can benefit from hearing aids connected to digital learning systems. By providing broader access, these technologies make it easier for students to adapt to the educational resources they require, as they facilitate self-directed learning (Auliawati, 2023).

Although digital transformation offers many benefits, not everyone or every community has equal access to these advantages. A significant problem is the digital divide, particularly in developing countries such as Indonesia. Gaps in digital literacy, access to information and communication technology (ICT), and technological skills are the root causes of this growing inequality. For instance, data shows that more than 30% of residents in the most rural districts of Indonesia lack adequate internet connectivity. Careers, educational prospects,

and participation in the growing digital economy are all affected by these limitations. Due to inadequate internet connectivity, certain groups are often unable to take advantage of the opportunities presented by digital technology, especially in remote areas. This results in widening economic and social gaps between communities that have embraced technology and those that have not. The disparity in access to and use of digital technology experienced by certain individuals is known as the digital divide. This issue is also referred to as digital illiteracy, the inability of some people or groups to utilize technological advancements because they lack adequate access or understanding (Aurellia, 2025).

Environmental challenges will always exist, both within and outside institutions, and every educational institution must ensure that its integrity and achievements are maintained alongside the progress and growth of digitalization and technology in education. Therefore, it is evident that education must keep pace with these advancements and developments and make use of them (Fara Meida, 2022). However, sensitivity toward this transformation remains lacking in the field of Islamic education. The strategic role of Islamic religious education as a guide for technological progress—preventing it from leading to moral decline—has been diminished due to the low quality of resources and the lack of creativity among educators in delivering Islamic education (Rifa'i, 2020).

CONCLUSION

Digital transformation in Islamic education is a strategic response to the challenges and opportunities presented by the era of disruption. Digitalization is no longer merely an option, but an urgent necessity to ensure the sustainability and quality of education that remains relevant to contemporary developments. In the context of Islamic education, this transformation entails integrating technology into the learning process, strengthening the digital literacy capacity of teachers and students, and ensuring equitable access to digital learning infrastructure and content grounded in Islamic values.

The implementation of digital transformation has not yet been evenly distributed across all regions, particularly in the 3T (frontier, outermost, and disadvantaged) areas. Inequities in access to devices, internet connectivity, and digital competence remain the main obstacles to achieving equitable access to education. Therefore, digital inclusion becomes an essential approach to ensuring that every individual, without exception, can access and utilize digital technology for their educational needs. Islamic education holds great potential to leverage technology in expanding the reach of dakwah (Islamic outreach), enhancing the quality of learning, and promoting social justice. The process of digital transformation must remain rooted in Islamic values, uphold ethical use of technology, and be directed toward shaping individuals who are knowledgeable, virtuous, and adaptable in the digital era.

Thus, digital transformation in Islamic education is not merely a form of technical modernization, but also a manifestation of the Islamic principles of justice, openness, and social responsibility. Through a digital inclusion approach, Islamic education can serve as a vital guide in creating an intelligent, just, and civilized society in an era of rapid change and challenges.

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