



## CHALLENGES OF MADRASAH IBTIDA'YAH IN INDONESIA IN BUILDING SCHOOL CULTURE IN THE ERA OF DIGITALIZATION

Siti Maryam<sup>1</sup> Ari Susetiyo<sup>2</sup>

Universitas Islam Zainul Hasan Genggong<sup>1</sup> Jl. Raya PB. Sudirman No. 360 (0335) 842178  
Kraksaan Probolinggo Jawa Timur. Indonesia

Universitas Islam Tribakti Lirboyo Kediri<sup>2</sup> Jl. KH. Wahid Hasyim 62 Telp/ Fax. 0354-  
772879 Kediri 64114, Jawa Timur, Indonesia

e-mail: <sup>1</sup>[mmery9988@gmail.com](mailto:mmery9988@gmail.com), <sup>2</sup>[arisusetiyotribakti@gmail.com](mailto:arisusetiyotribakti@gmail.com)

### ABSTRACT

This article explores the challenges faced by Madrasah Ibtida'iyah in Indonesia in building a school culture within the era of digitalization. As Islamic primary education institutions, Madrasah Ibtida'iyah play a crucial role in shaping students' moral and intellectual development, yet they encounter significant hurdles due to rapid technological advancements. Through a comprehensive literature review, the study identifies key challenges, including the integration of digital tools, teacher preparedness, resource limitations, and the preservation of Islamic values amidst digital distractions. Findings reveal that while digitalization offers opportunities for innovative learning, it also poses risks to traditional school culture, necessitating adaptive strategies. The discussion emphasizes the need for teacher training, curriculum adjustment, and community involvement to foster a balanced school culture. The study concludes with recommendations for policymakers and educators to navigate these challenges effectively, ensuring Madrasah Ibtida'iyah remain relevant in the digital age.

**Keywords:** Madrasah Ibtida'iyah, School Culture, Digitalization, Islamic Education,

### ABSTRAK

Artikel ini membahas tantangan yang dihadapi Madrasah Ibtida'iyah di Indonesia dalam membangun budaya sekolah di era digitalisasi. Sebagai lembaga pendidikan dasar Islam, Madrasah Ibtida'iyah memainkan peran penting dalam membentuk perkembangan moral dan intelektual siswa, namun mereka menghadapi rintangan yang signifikan karena kemajuan teknologi yang pesat. Melalui tinjauan pustaka yang komprehensif, penelitian ini mengidentifikasi tantangan utama, termasuk integrasi perangkat digital, kesiapan guru, keterbatasan sumber daya, dan pelestarian nilai-nilai Islam di tengah gangguan digital. Temuan penelitian mengungkapkan bahwa meskipun digitalisasi menawarkan peluang untuk pembelajaran yang inovatif, namun juga menimbulkan risiko bagi budaya sekolah tradisional, yang memerlukan strategi adaptif. Pembahasan menekankan perlunya pelatihan guru, penyesuaian kurikulum, dan keterlibatan masyarakat untuk menumbuhkan budaya sekolah yang seimbang. Penelitian ini diakhiri dengan rekomendasi bagi para pembuat kebijakan dan pendidik untuk menavigasi tantangan ini secara efektif, memastikan Madrasah Ibtida'iyah tetap relevan di era digital.

**Kata kunci:** Madrasah Ibtida'iyah, Budaya Sekolah, Digitalisasi, Pendidikan Islam,

### INTRODUCTION

Madrasah Ibtida'iyah, as an Islamic-based primary education institution in Indonesia, plays a vital role in shaping the character and knowledge of children from an early age. This institution focuses not only on academic learning but also on instilling religious and moral values that form the foundation of an Islamic lifestyle. The era of digitalization has brought significant changes that impact the dynamics of education in

these madrasahs, necessitating adaptation to remain relevant. Modern technology offers opportunities to enhance the quality of learning, yet it also presents challenges in preserving the school's cultural identity. Therefore, this research aims to explore these issues in depth to provide sustainable solutions.

Digitalization provides modern tools such as learning applications and online platforms that can improve educational access for Madrasah Ibtida'iyah students. These platforms allow access to educational resources anytime and anywhere, including interactive religious materials. However, the use of this technology also carries risks, such as the erosion of traditional values that are characteristic of Islamic education.(Gusmana and Syamzaimar 2025) . The school culture reflecting Islamic values may be threatened by uncontrolled digital cultural influences, requiring wise management strategies. This study will explore how madrasahs can balance these aspects effectively.

Teachers in Madrasah Ibtida'iyah often face difficulties integrating technology into their daily teaching practices (Purba et al. 2024). Many of them have a traditional educational background with limited emphasis on digital skills, hindering the adoption of modern methods. Adequate training has become an urgent need to enhance teachers' abilities to utilize technology. Without this support, teachers may revert to conventional methods, potentially weakening the madrasah's competitiveness in the digital era. This research will highlight the importance of ongoing teacher training.

Resource limitations are a major issue for many Madrasah Ibtida'iyah, especially in remote areas. Technological infrastructure, such as internet access and hardware, is often unavailable or inadequate, making widespread digitalization challenging. This gap creates educational disparities between urban and rural madrasahs, potentially widening social inequalities. Therefore, interventions from the government and communities are needed to support resource provision. This study will identify practical solutions to address this problem.

Parents and the community play a significant role in supporting the development of school culture in madrasahs. Their support can include monitoring technology use at home and participating in school activities. However, their understanding of digitalization's impact is often limited, resulting in suboptimal support. Collaboration among schools, families, and communities is key to creating a balanced learning environment. This research will explore ways to enhance community involvement in the digital adaptation process. The Madrasah Ibtida'iyah curriculum is designed to balance religious and general education, reflecting the philosophy of Islamic education (Sartini et al. 2024) . The digital era demands curriculum adjustments to meet contemporary needs, including the integration of technology in learning. This challenge requires innovation in developing materials that support school culture while preserving religious values. This study will propose strategies for effectively and contextually revising the curriculum.

The influence of social media and gadgets is increasingly dominating the lives of Madrasah Ibtida'iyah students, potentially diverting their attention from religious learning. Children often show more interest in digital entertainment, such as games or videos, rather than reading religious books or participating in school activities. This threatens the development of a school culture based on discipline, religiosity, and togetherness. Thus, an educational approach is needed to guide the positive use of technology. discuss ways to manage this influence.

The government has a crucial role in supporting Madrasah Ibtida'iyah through inclusive educational policies. Support such as providing technological facilities, teacher training, and infrastructure subsidies can help madrasahs face the digital era. However, the implementation of these policies is often slow and uneven, particularly in remote areas. This study will evaluate the effectiveness of current policies and suggest improvements to support madrasah.

Previous studies indicate that a strong school culture can enhance academic performance and character development in students. In the digital era, madrasahs need to develop strategies that blend technology with Islamic values to maintain their identity. This approach will ensure that madrasahs remain relevant and meaningful educational institutions. This research will analyze successful strategies and adapt them to the local context.

Cultural challenges also arise from the diversity of students in Madrasah Ibtida'iyah, reflecting Indonesia's multiculturalism. The variety of cultural and religious backgrounds requires an inclusive approach to building a unifying school culture. Digitalization can serve as a tool to facilitate intercultural dialogue if used wisely and purposefully. This study will explore ways to leverage technology to strengthen cultural diversity in madrasah. Teacher training is an urgent solution to address the challenges of digitalization in Madrasah Ibtida'iyah. Teachers need to be equipped with digital skills and an understanding of how to integrate technology without compromising Islamic values. Training programs should be designed continuously and tailored to local needs. This research will propose an effective and affordable training model for madrasah teachers.

The madrasah community, including alumni and community leaders, can contribute to strengthening school culture through material and non-material support. Their contributions may include providing resources like technology devices or extracurricular activities that promote value-based education. This collaboration becomes increasingly important in the digital era to create a robust educational ecosystem. This study will assess the community's role and strategies to maximize its impact.

This research aims to identify the challenges faced by Madrasah Ibtida'iyah in building school culture in the digital era through a comprehensive approach. By deeply understanding these issues, effective solutions are expected to support madrasah development. A holistic approach involving all stakeholders is key to its success. This study will provide a tangible contribution to the development of Islamic education in Indonesia. Ultimately, the digital era offers both opportunities and threats to Madrasah Ibtida'iyah, an inevitable reality. With the right strategies, madrasahs can harness technology to strengthen school culture and improve educational quality. This research seeks to provide practical guidance for madrasah administrators, teachers, and communities to navigate these changes. The findings are hoped to serve as a reference for future educational policies.

The changes brought by digitalization also affect how students interact with the school environment. They tend to be more connected to the virtual world than the physical madrasah setting, which can weaken social bonds among them. Teachers and administrators need to create activities that combine technology with face-to-face interactions to maintain a sense of togetherness. This research will explore activities that support this balance. Investing in technology requires careful planning, especially for madrasahs with limited budgets. Costs for procurement, maintenance, and staff training add financial burdens that are often difficult to manage. Partnerships with private sectors or philanthropic organizations could be a solution to overcome these limitations. This study will analyze successful partnership models relevant to the madrasah context.

Exposure to negative online content poses a serious threat to students' character development. Madrasahs need to develop digital literacy to protect students from harmful social media influences and inappropriate websites. This approach must involve parents and communities to create comprehensive protection. This research will propose a suitable digital literacy program for madrasah students (Armadi, Ar, and Aini 2022)

National education policies need to be more responsive to the needs of Madrasah Ibtida'iyah in the digital era. Support such as technology subsidies and teacher training should be distributed evenly to reduce regional disparities. This study will suggest policy

changes to accelerate madrasah adaptation to digitalization. The results are expected to influence decision-making at the governmental level.

Adapting to digitalization also requires a mindset shift among madrasah administrators. Many still view technology as a threat rather than an opportunity, hindering innovation. Leadership training for administrators can help overcome these barriers. This research will propose a leadership training program focused on digitalization. Engaging students in developing school technology can boost their interest in learning. They can be involved in projects like creating digital content or managing simple devices. This approach also strengthens their sense of ownership toward the madrasah. This study will explore ways to actively involve students in the digital adaptation process. Finally, this research emphasizes the importance of continuous evaluation to ensure the success of digital adaptation. Data from evaluations can be used to periodically adjust strategies and policies. This approach will ensure that Madrasah Ibtida'iyah remain relevant and capable of facing future challenges. This study will provide a practical evaluation framework for madrasah administrators.

## RESEARCH METHOD

This research employs a literature review method (Bakri 2013) to examine the challenges faced by Madrasah Ibtida'iyah in Indonesia in building school culture in the digital era. This approach involves collecting and analyzing sources (Moleong 2016) including journals, books, and relevant research reports on Islamic education, digitalization, and school culture development. Inclusion criteria encompass studies addressing challenges in Islamic primary education, the impact of digitalization, and strategies for building school culture. Analysis is conducted using a thematic approach, where key themes such as technology integration, teacher training, and community involvement are identified and linked to the Madrasah Ibtida'iyah context.

## RESULTS AND DISCUSSION

### Challenges of Technology Integration in School Culture

Madrasah Ibtida'iyah in Indonesia face significant challenges in integrating digital technology into school culture, a process that is part of the transition to modern, value-based Islamic education. The digital era introduces tools like tablets, interactive learning applications, and online platforms that can enhance educational access, enabling students to learn religious and general subjects in a more dynamic and engaging way. However, the reality on the ground shows that many madrasahs, especially in rural and island areas, lack adequate infrastructure, such as stable internet connections, functional technology devices, or reliable electricity supply. This creates a significant digital divide, leaving students in remote areas behind in accessing current learning resources, which affects their motivation and participation in school activities.

The use of technology also alters social interaction patterns within the madrasah environment, an aspect that cannot be overlooked in building a harmonious school culture. Students tend to be more interested in their personal gadgets than in traditional group activities, such as religious discussions, reading the Al-Qur'an together under a teacher's guidance, or participating in extracurricular activities that promote togetherness, like cleaning the school mosque collaboratively. The school culture, originally built on communal values and silaturahmi (social bonding), which are hallmarks of Islamic education, may be at risk if technology is not managed wisely. For instance, using phones during lessons often reduces students' focus on religious activities like congregational prayers or study sessions, disrupting the sense of togetherness that underpins madrasah culture. To address this, madrasahs need to develop balanced



policies, such as establishing gadget-free zones in worship areas or holding joint reflection sessions to discuss technology's impact on social and spiritual behavior.

Teachers often struggle to adapt technology into their teaching methods, a challenge closely tied to individual readiness and institutional support. Lack of training makes some teachers hesitant or unconfident in using digital tools, which can weaken teaching efficacy and create discomfort in the classroom, especially if students are more tech-savvy than their instructors. Many teachers also feel overwhelmed by software complexity, lack time to learn new technology amidst busy teaching schedules, or struggle to handle technical issues like network disruptions or device malfunctions. A strong school culture requires teachers who can leverage technology to support value-based learning, such as integrating Al-Qur'an applications with Akidah Akhlak lessons (Abdurrahman and Nihaya 2025), using video sermons to enrich materials, or facilitating online discussions on Islamic history. Sustainable solutions involve training tailored to teaching schedules, specific madrasah needs, and teachers' digital literacy levels, using flexible, module-based approaches with hands-on classroom practice.

Additionally, technology integration often faces resistance from conservative community members within madrasahs, reflecting concerns about cultural change. Many religious leaders and parents worry that technology might erode traditional Islamic values, such as manual Al-Qur'an memorization, which is considered sacred, face-to-face teaching that fosters closeness (Sh and Sayed 2024), or local religious traditions like celebrating Maulid Nabi together. To overcome this resistance, madrasahs can conduct awareness campaigns demonstrating technology's benefits, such as interactive memorization apps, educational videos enriching Islamic history lessons, or online platforms strengthening student-teacher connections. This requires close collaboration between madrasah administrators, religious leaders, and local communities to build consensus, including involving religious figures in designing appropriate content and holding open dialogues to address concerns and foster trust.

Finally, technology integration involves significant financial burdens related to device and infrastructure maintenance. Digital devices require regular upkeep, software updates, replacements when damaged, and staff training to manage technology, adding to the strain on madrasahs with limited budgets. Solutions like partnerships with technology companies, alumni donations, or adoption programs involving local sponsors can alleviate this burden, for example, by providing free repair services, periodic technical support, or refurbished devices. With strategies including long-term budget planning, community involvement in resource management, and the formation of internal technical teams, madrasahs can build a school culture that leverages technology without losing the essence of Islamic education, creating an innovative yet tradition-rooted learning environment.

### **Teacher Readiness in the Digital Era**

Teacher readiness is a key factor in building an adaptive school culture in the digital era, an element that determines the success of technology integration in Islamic education. Many educators in Madrasah Ibtida'iyah have a traditional educational background that emphasizes manual teaching methods, such as direct lectures and textbook use, leaving them unprepared for modern technological demands (Asidiqi 2024). This creates a gap between contemporary needs and teachers' abilities to manage digitized classrooms, especially when students are often more familiar with smartphones, gaming apps, or social media platforms than their instructors. Some teachers feel unfamiliar with tools like projectors, digital boards, or online learning platforms, hindering the adoption of modern teaching methods, particularly in large classes with packed schedules, thus affecting the teaching-learning dynamics.

Studies show that teacher training in educational technology can improve teaching quality by introducing new methods, such as project-based learning, digital simulations, or

multimedia content to support religious lessons(Alvionita and Putri 2024). This training should cover the use of educational software, virtual classroom management, strategies for integrating technology with Islamic values like creating religion-based digital content(Pareza et al. 2025) , and basic technical troubleshooting, such as resolving network issues. However, access to such training is often limited, especially in remote areas where unstable internet, inaccessible training facilities, and transportation costs pose additional barriers for teachers with limited income. Madrasahs need to establish partnerships with the government, NGOs, or higher education institutions to offer training programs, such as free webinars, local workshops involving communities, or community-based training adjusted to teachers' schedules.

Another challenge is resistance from some teachers to change, often rooted in the belief that traditional methods are more effective for instilling Islamic values, such as manual Al-Qur'an memorization or face-to-face discussions rich in emotional connection. They may view technology as a threat to proven teaching methods, like direct lectures enabling personal interaction with students or textbooks seen as more personal and aligned with madrasah culture. To address this resistance, madrasahs can involve teachers in planning technology integration, for example, by forming curriculum development teams including representatives from various teaching levels and subjects, giving them an active role and avoiding forced adaptation without preparation. This participatory approach will boost teachers' confidence, ensure technology complements traditional methods, and foster an inclusive, responsive school culture(Zahro 2025).

Lack of motivation is also a significant issue among teachers, especially if digital training is deemed irrelevant to their daily needs or lacks tangible incentives (Irwan Sutiawan, n.d.) Many feel that the time invested in training does not match the benefits, particularly if madrasah infrastructure remains inadequate, such as a lack of devices or inconsistent internet access. Madrasahs can address this by offering meaningful rewards, such as nationally recognized digital skill certificates, opportunities to present innovations at educational forums, annual bonuses for technology-active teachers, or promotions based on digital competence. A dynamic school culture will emerge if teachers feel supported, motivated, and valued, creating a learning environment responsive to the digital era while strengthening the emotional bond between teachers and students.

Finally, teacher readiness depends on support from madrasah management, which plays a central role in establishing a clear vision for technology's role in education. Management needs to allocate specific time for training, provide resources like laptops, internet access, or dedicated training spaces, and create schedules allowing teachers to attend without sacrificing teaching time. Without commitment from management, including principals, school committees, and education boards, teachers' adaptation efforts will be hindered, and the school culture will struggle to evolve into a modern learning environment. With a systemic approach involving all parties, including technology mentors in each madrasah and support networks among teachers, madrasahs can build a school culture that integrates technology with Islamic values sustainably.

## Resource Limitations

Resource limitations pose a major obstacle to building a resilient school culture in Madrasah Ibtidaiyah, an issue reflecting structural challenges in Indonesia's Islamic education system (Prasinta 2024). Many madrasahs, particularly in rural and island regions, face funding shortages to purchase technology devices, upgrade facilities like suitable classrooms, or ensure a stable electricity supply, which are basic prerequisites for supporting digitalization(Susyanto 2022). This hinders the creation of a learning environment that supports technology use, a key component of modern school culture, and widens the gap between urban and rural madrasahs, where urban ones have better

access to technological infrastructure. Research indicates that initial technology investments, including installation, training, and maintenance costs, are often a major barrier for institutions with limited budgets, especially in economically weak areas with high poverty rates.

Potential solutions include partnerships with the private sector, Islamic organizations, or philanthropic bodies to provide necessary resources. Donations of devices, such as refurbished computers, portable tablets, or simple projectors, or sponsorship programs from technology companies can help madrasahs adopt technology without facing overwhelming financial burdens. For example, collaboration with local firms could involve supplying low-cost devices, free training for teachers and staff, or technology adoption programs engaging communities in resource management, such as forming joint maintenance teams across madrasahs. A strong school culture can be built if all students have equal access to digital learning tools, reflecting the justice principle in Islamic education that is a core foundation of madrasahs, and reducing regional disparities through an inclusive approach.

Resource limitations also extend to relevant and contextual digital learning materials, a need often overlooked in educational planning. Many madrasahs still rely on traditional textbooks, which inadequately support technology-based learning, particularly due to the lack of content reflecting local cultures, regional languages, or specific religious needs, such as Fiqih lessons tailored to local customs. Developing digital content that embodies Islamic values, such as local-example-based Fiqih apps, animated videos of Islamic history with regional narratives, interactive akhlak modules, or digital dictionaries in local languages, can strengthen school culture. This process requires collaboration with local tech developers, religious scholars, educators, and communities to ensure content aligns with the madrasah curriculum, while involving students in testing to ensure effectiveness and boost their engagement in the learning process.

Additionally, device maintenance presents a unique challenge that often receives insufficient attention. Digital devices require regular maintenance, software updates, replacements when damaged, and staff training to manage technology, adding financial and logistical burdens, especially in areas with limited access to technicians or original parts. Madrasahs can address this by training internal staff to handle basic maintenance, such as cleaning devices, installing updates, or diagnosing simple issues, or by forming joint technical support teams across madrasahs to share resources and expertise. A community-based approach, such as involving tech-savvy alumni, local youth organizations, or urban volunteers concerned with education, can also offer creative solutions to ensure technology resource availability, allowing school culture to thrive despite limitations.

### **Influence of Digitalization on Islamic Values**

Digitalization has a dual influence on Islamic values in Madrasah Ibtida'iyah, reflecting both potential and risks in transforming Islamic education. On one hand, technology can enrich religious learning by providing online access to resources like detailed Al-Qur'an tafsir, sermons from various scholars, interactive memorization apps, or engaging Islamic educational videos, allowing students to explore their faith flexibly beyond classroom limits. This supports the development of a religion-based school culture, offering students tools to deepen religious knowledge, such as accessing famous scholars' sermons or participating in supervised online Fiqih discussions. On the other hand, exposure to negative content, such as violence, pornography, secular culture, or extremist propaganda on social media, can undermine a religion-based school culture if not strictly monitored, especially given children's vulnerability to external influences contrary to Islamic teachings.

A strong school culture relies on the consistency of taught values, such as simplicity, obedience, and togetherness, which are hallmarks of Islamic education. Digitalization can disrupt this consistency if students are exposed to values conflicting with Islamic teachings, such as individualism promoted by competitive online games, materialism from luxury product ads highlighting glamorous lifestyles, or hedonistic behaviors displayed on platforms like TikTok and YouTube. For example, gaming addiction can reduce enthusiasm for traditional school community activities, while exposure to sexual or violent content can shake students' morals and foster behaviors misaligned with religious norms. Approaches like digital literacy education are essential to teach students to use technology wisely, filter content aligned with Islamic values, maintain a harmonious school culture, and build self-awareness to face increasingly complex digital challenges.

Parents play a critical role in mitigating negative digital influences, serving as key partners to madrasahs in shaping children's character at home. They should be engaged to monitor gadget use in line with school rules, such as limiting screen time, blocking inappropriate sites with parental control software, or establishing technology-free zones in family spaces to encourage direct interaction. Parent education programs, such as hands-on digital literacy workshops, counseling sessions with religious leaders to discuss technology's impact, or distributing safe gadget usage guides, can raise awareness about technology's effects and ways to support religious learning at home, such as encouraging children to read digital Al-Qur'an with family. A harmonious school culture will emerge with synergy among madrasahs, families, and communities in addressing digitalization challenges, creating an environment supporting students' moral and intellectual growth (Ridho, Kosim, and Abidin 2024).

Moreover, madrasahs need to develop positive digital content to counter negative influences and reinforce Islamic identity as part of school culture (Suwarni, 2022). Creating short videos on prophets' stories with simple animations, religious songs for children using local rhythms, Islamic educational games teaching morals, or podcasts on Islamic history with young narrators can attract students while strengthening religious values (Susetiyo and Sutrisno 2022). These projects can involve students and teachers in extracurricular activities, such as a madrasah media club blending creativity and learning, becoming part of an inclusive, creative (Susyanto 2022), and participatory school culture while boosting engagement and providing space for value-based creativity. With a proactive, collaborative, and community-based approach, madrasahs can ensure digitalization strengthens, rather than weakens, their religious identity.

### **Role of the Community in Supporting School Culture**

The local community holds great potential in supporting the development of a resilient school culture in the digital era, serving as a social backbone for madrasah sustainability. Support from parents, religious leaders, alumni, and community organizations can strengthen the madrasah's identity, (Ridho, Kosim, and Abidin 2024), for example, by providing resources like funds for technology devices, spaces for extracurricular activities, or logistical aid for religious events. The community can organize events such as live-streamed religious study sessions using simple technology, digital literacy training for children involving parents, or technology-based Islamic cultural festivals integrating local traditions with innovation (Rohmah, Latihah, and Nasir 2024), to attract students, enrich school culture, and extend religious education's reach to the broader society. Active community participation can also include voluntary contributions, donations of used devices, or communal work to improve infrastructure, demonstrating a collective commitment to education.

Challenges arise when the community lacks understanding of digitalization's benefits, often due to limited exposure or experience with technology, leading them to



view it as a threat to traditional education like manual Al-Qur'an memorization or face-to-face teaching rich in emotional closeness. Many parents and community leaders still believe older methods are more effective for instilling Islamic values, which can hinder technology adoption and create negative perceptions of change. Madrasahs need to educate the community through seminars with live demonstrations, active-participation workshops (Maryam and Susetiyo 2025), or community events like educational night markets showcasing religion-supporting technology demos, about technology use that aligns with Islamic values, such as memorization apps or sermon videos. This approach will build a school culture supported by collective awareness (Armadi, Ar, and Aini 2022), where the community understands its role as an educational partner and does not feel alienated by changes.

Collaboration with Islamic organizations, such as Nahdlatul Ulama, Muhammadiyah, or Islamic philanthropic bodies, can expand the resources and expertise available to madrasahs. Programs like technology device donations, community training involving various age groups, or building local technology infrastructure like servers can enhance madrasah capacity, especially in remote areas, with organizations driving sustainable technology initiatives. For instance, organizations can launch madrasah technology programs that also train parents, community leaders, and students, creating a robust, community-based support network. An inclusive and adaptive school culture will emerge if the community actively participates in the transition to the digital era, strengthening the bond between the school and its environment while boosting a sense of ownership in madrasah development.

Additionally, the community can monitor digitalization's impact on students, acting as a close social watchdog with significant cultural influence. Religious leaders can hold casual counseling sessions, group discussions with parents, regular religious activities for children with modern approaches, or digital literacy campaigns to guide students in responsible technology use while reinforcing Islamic values outside the classroom in ways relevant to modern children's needs. These activities can become part of a school culture based on religious and social values, enhancing students' sense of belonging to the madrasah and fostering a cohesive learning community that supports character development. By engaging the community comprehensively, including youth, local women, and traditional arts groups, madrasahs can build a resilient learning environment amid digitalization's currents.

### **Strategies for Adapting to Digitalization**

Madrasah Ibtida'iyah need to develop adaptation strategies to face the digital era, a proactive step to maintain relevance and strengthen school culture amid global changes. One approach is developing a curriculum that integrates technology with value-based learning (Muslimin 2023), aligned with Islamic identity and local needs. For example, learning apps can be enhanced with modules on Islamic morals, such as internet ethics, social media interaction per Islamic teachings (Syagif 2023), or technology use to support Al-Qur'an memorization with interactive methods. This strategy will reinforce a school culture relevant to the times, ensuring technology serves as a support, not a replacement, for religion-based education, and creating meaningful, contextual learning for students. This process requires collaboration with curriculum experts, religious scholars, tech developers, and educators to align content with Islamic values, incorporating input from students and parents to ensure practicality in daily life (Yudha et al. 2025).

Teacher training must be a priority in adaptation strategies, a long-term investment to improve education quality and build teaching capacity. Programs covering educational software use, virtual classroom management, strategies for integrating technology with Islamic values, and technical troubleshooting can enhance educators' skills in facing digital challenges. Training should occur regularly, such as every semester

for a flexible one-month duration, using hands-on classroom practice, like teaching simulations with learning apps, creating simple digital content, or using online discussion platforms. A dynamic school culture will form if teachers effectively utilize digitalization, creating an interactive, meaningful learning environment that supports character development and strengthens the emotional bond between teachers and students.

Continuous evaluation is also vital to ensure adaptation success and keep strategies relevant to evolving times. Madrasahs can use feedback from students, parents, and teachers to adjust approaches, such as assessing specific app effectiveness, technology usage schedules, or community acceptance, through simple questionnaires, in-depth interviews, or regular trimester group discussions. The evaluation system can include indicators like student participation in digital activities, improved understanding of religious and general subjects, or positive behavioral changes like discipline and cooperation, which are part of a responsive school culture. This approach will help madrasahs stay competitive in the digital era while preserving their religious identity, ensuring adaptations meet local needs, community aspirations, and technological advancements.

Furthermore, adaptation strategies can involve developing affordable, sustainable technological infrastructure as a foundation for modern learning. Madrasahs can leverage open resources, such as free accessible software, cloud-based learning platforms requiring minimal investment, or refurbished devices to reduce costs, while training students and staff to manage these resources independently. Partnerships with the government, international donors, or tech companies can support facility provision, such as simple computer labs tailored to local conditions, reliable low-speed internet in remote areas, or solar panels for electricity in regions without grid access. With a comprehensive strategy involving all stakeholders like madrasah committees, local organizations, and students, madrasahs can build an adaptive, sustainable school culture in the digital era, creating a robust and inclusive educational ecosystem.

### **Long-Term Impact on School Culture**

If digitalization challenges are not addressed with a structured approach, the school culture in Madrasah Ibtida'iyah may weaken over time, with significant effects on its identity and social function as an Islamic education institution. Students might lose interest in traditional values central to madrasah education, such as discipline in performing prayers, respect for teachers as role models, togetherness in religious activities like joint study sessions, or Al-Qur'an memorization as a spiritual pride, replacing them with an uncontrolled digital culture, such as isolating gaming addiction, negative social media exposure, or a consumerist lifestyle conflicting with Islamic simplicity teachings. This impact could diminish the madrasah's role as a guardian of Islamic identity in society, weaken communal bonds characteristic of Islamic education, and influence future generations' morals with increased individualism, reduced empathy, or noncompliance with religious norms.

Conversely, successful adaptation can strengthen school culture and position madrasahs as pioneers of modern, religion-based education relevant to the times. Madrasahs that effectively blend technology with Islamic values will produce an adaptive, moral generation capable of competing globally, such as in economic competition requiring digital skills, multicultural interactions needing cross-cultural understanding, or technology-driven workplaces valuing innovation, while maintaining a strong religious identity. For example, using technology for religious activities, like live-streamed congregational prayers for families, daily dua apps tailored to student needs, or discussion platforms on morals involving the community, can deepen spiritual understanding, strengthen community ties, and boost parental involvement in education. This evolving school culture will serve as a model for other educational institutions in Indonesia,

demonstrating that digitalization can align with tradition when managed wisely with active stakeholder involvement.

Further research is needed to monitor long-term impacts with a systematic, ongoing approach. Longitudinal studies can provide in-depth data on how digitalization affects student behavior, such as learning concentration levels, school activity participation, religious value understanding, or technology addiction risks impacting mental health, through periodic observations over five to ten years across diverse regions. This data can inform more effective policies, such as national guidelines on madrasah technology use including screen time limits, support programs for at-risk students with counseling, or positive digital content development initiatives involving input from researchers, educators, religious leaders, and communities. With an evidence-based approach, madrasahs can ensure a relevant school culture supporting holistic student development and adapting to global trends.

Additionally, long-term impacts depend on societal readiness as a social foundation supporting madrasahs through change. If communities support digital adaptation through active participation, such as providing local resources, monitoring home technology use with an educational approach, or hosting activities like parent digital literacy training, madrasahs will have a conducive ecosystem to build a strong school culture. Community education programs on technology benefits, such as hands-on training, mosque-based awareness campaigns with interactive sermons, or local leader collaborations to form support groups, can accelerate this process, creating an environment supporting value-based learning in the digital era. With a long-term vision involving strategic planning, continuous evaluation, and strong partnerships, madrasahs can become centers of sustainable Islamic educational innovation.

### **Criticism and Reflection**

Some critics argue that digitalization can damage madrasah identity if not carefully managed, a view reflecting deep cultural concerns. They worry that values like simplicity, a hallmark of Islamic living, obedience to religious teachings, togetherness in communal activities, and respect for traditions will be overshadowed by global cultural influences, such as consumerism promoting excessive lifestyles, individualism weakening solidarity, or modern lifestyles conflicting with religious principles. This reflection underscores the need for a selective approach to technology adoption, ensuring innovations align with religious principles, such as prioritizing content supporting religious learning like tafsir or prayers over irrelevant commercial entertainment. Research suggests that without strict filters, intensive guidance, and consistent oversight, madrasahs risk losing their appeal as value-based institutions.

On the other hand, completely rejecting digitalization is unrealistic given inevitable global changes and growing job market demands for digital skills, such as programming for industry needs, data analysis for decision-making, or online communication essential in globalization. Madrasahs must find a balance between tradition and innovation, prioritizing technology that supports religious learning, like audio-enhanced tafsir apps, curriculum-aligned sermon videos, or supervised online discussion platforms, over entertainment lacking educational value. This reflection encourages developing a unique school culture model reflecting Islamic identity while remaining open to change, involving ongoing dialogue among madrasah administrators, religious leaders, communities, and tech experts to reach consensus and craft adaptive policies meeting contemporary needs.

Moreover, criticism also arises regarding technology access disparities that could widen regional educational gaps. Urban madrasahs may adapt faster than those in rural or island areas, creating disparities in school culture quality, such as differences in technology device access, adequate teacher training, or locally relevant digital content.

This reflection highlights the need for inclusive policies ensuring equal opportunities for all madrasahs, such as region-based technology aid prioritizing underserved areas, subsidies for device purchases, or inter-madrasah support networks facilitating resource exchange. With a fair approach involving equitable resource distribution, local community empowerment, and sustained planning, madrasahs can build a consistent, sustainable school culture reflecting Indonesia's cultural diversity across regions.

### **Recommendations for Practice**

Based on these findings, Madrasah Ibtida'iyah are advised to integrate technology with intensive, structured teacher training as an initial step to build adaptive educational capacity. Training programs should cover the use of curriculum-appropriate educational apps, digital classroom management supporting distance learning, strategies for teaching value-based Islamic digital literacy, and practical technical troubleshooting, with a sufficient duration like a one-month program with weekly sessions, followed by post-training support to ensure classroom application. The curriculum should be revised to include relevant modules, such as online ethics reflecting religious teachings, social media interaction per Islamic values, technology use for Al-Qur'an memorization, and basic programming introduction for students as a future skill, becoming part of a modern school culture. Community collaboration should also be enhanced through activities like hands-on parent workshops, community technology projects like local content development, digital education festivals attracting students, or technology clubs involving active students.

The government can support through policies providing funds, technological facilities, and evenly distributed infrastructure across Indonesia. National programs for madrasahs can include mass training targeting most teachers within five years, procurement of refurbished tablets or computers to cut costs, internet infrastructure development in remote areas prioritizing low human development index regions, and electricity subsidies for madrasahs in areas without grid access. These recommendations aim to build an adaptive, sustainable school culture, ensuring madrasahs remain competitive and relevant Islamic education centers. Support should be accompanied by regular evaluations, such as annual reports with community input, field visits to monitor progress, and strategy adjustments per local needs to ensure successful implementation.

Additionally, madrasahs can form internal innovation teams comprising teachers, staff, community representatives, and high-achieving students, tasked with designing local initiatives like religion-based digital content reflecting local culture, student digital literacy campaigns with educational games, peer-to-peer teacher training for experience sharing, or simple research projects on technology's impact on student behavior. These teams can collaborate with local developers, universities with education programs, or tech organizations to create apps, educational videos, or learning platforms suited to madrasah contexts and student needs. This community-based approach will strengthen school culture by involving all stakeholders, creating a resilient learning environment in the digital era, boosting ownership of institutional development, and supporting continuous innovation rooted in Islamic values.

### **Future of School Culture in the Digital Era**

The future of school culture in Madrasah Ibtida'iyah depends on their ability to adapt to digitalization, a determining factor in their sustainability and relevance amid rapidly changing global conditions. With the right strategies and strong commitment, madrasahs can lead in modern Islamic education, integrating technology with religious values to produce an adaptive generation capable of competing globally, such as in economic competition requiring digital skills, multicultural interactions needing cross-cultural understanding, or technology-driven workplaces valuing innovation, while

staying grounded in solid Islamic principles. An evolving school culture will equip students with relevant digital skills, like basic programming for school projects, data analysis to support learning, or effective online communication, while deepening religious understanding through positive digital content, achieving a balance between modern competence and religious identity.

This research affirms that digitalization challenges can turn into opportunities with planned, inclusive approaches. With commitment from all stakeholders, including a supportive government, actively adapting teachers, fully engaged communities, and contributing support organizations, Madrasah Ibtida'iyah can preserve their identity while contributing to national educational progress. A bright future awaits if madrasahs can build an inclusive, innovative, value-based school culture, involving continuous innovations like developing madrasah-specific online learning platforms aligned with curricula, inter-madrasah networks for resource and experience sharing, or technology internship programs for students involving local communities. This approach will ensure madrasahs remain relevant in the digital era while preserving Islamic education's heritage, serving as a model for other systems, and reinforcing their status as premier educational institutions in Indonesia.

Furthermore, developing inter-madrasah networks can accelerate digital adaptation by creating a collaborative, mutually supportive ecosystem. Exchanging best practices among madrasahs, forming technology consortia across regions, implementing inter-madrasah mentoring programs for cross-regional learning, or hosting digital innovation competitions to spark student creativity can help madrasahs learn from each other, enriching school culture with new ideas like project-based teaching involving technology, AI use for personalized learning tailored to student needs, or multilingual content development supporting diverse cultural backgrounds. With a collective vision, adequate infrastructure support, and active community involvement, madrasahs can become an inspiring educational model, not only in Indonesia but also regionally, showcasing the strength of Islamic education in addressing global changes through community-based, technology-driven, and value-rooted approaches.

## CONCLUSIONS

This research concludes that Madrasah Ibtida'iyah in Indonesia face complex challenges in building school culture in the digital era. Issues like technology integration, teacher readiness, resource limitations, and digital cultural influences can weaken Islamic identity if not managed properly. However, with adaptation strategies such as teacher training, curriculum revision, and community involvement, madrasahs can leverage digitalization to strengthen school culture. This approach will produce students who are both morally upright and adaptable, while preserving the madrasah's role as a guardian of Islamic values. This study calls for sustained policy support and further research to ensure madrasahs remain relevant and competitive in the digital age.

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