

Effective Approaches in the Transformation of Madrasahs in the Contemporary Era in West Sumatra

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Abstract

This study examines effective approaches to madrasah transformation in West Sumatra, focusing on the challenges faced and development strategies that can be applied. Therefore, the researcher is interested in examining this theme. The approach used is a qualitative method with a case study type of research. Data collection techniques use observation, interviews, and documents from international journals, Scopus, and so on. This research was conducted in madrasahs in West Sumatra. The results show that madrasahs in West Sumatra have shifted from traditional institutions to modern educational institutions, or in other words, they have undergone a transformation. Madrasahs in this region have been trying to transform in the contemporary era. However, they still face obstacles related to the implementation of a curriculum that is not yet fully in line with the needs of the times, challenges in leadership and management, some teachers who use old traditions such as teaching using lecture methods, and inadequate infrastructure.

Keywords:

Effective Approach;
Madrasah Transformation;
West Sumatra.

Abstrak

Penelitian ini mengkaji pendekatan efektif dalam transformasi madrasah di Sumatera Barat, dengan fokus pada tantangan yang dihadapi dan strategi pengembangan yang dapat diterapkan. Oleh karena itu, peneliti tertarik mengkaji tema ini. Pendekatan yang digunakan adalah metode kualitatif dengan jenis penelitian studi kasus. Teknik pengumpulan datanya menggunakan observasi, wawancara, dan dokumen baik itu dari jurnal internasional, scopus, dan sebagainya. Penelitian ini dilakukan di madrasah yang ada di Sumatera barat. Hasil penelitian menunjukkan bahwa madrasah di Sumatera Barat sudah mengalami pergeseran dari lembaga tradisional menuju lembaga pendidikan modern atau bisa di sebut dengan bertransformasi. Madrasah di daerah ini sudah berupaya melakukan transformasi di era kontemporer. Namun, masih menghadapi kendala terkait implementasi kurikulum masih belum sepenuhnya sesuai kebutuhan zaman, terdapat tantangan dalam kepemimpinan dan manajemen, Sebagian guru yang menggunakan tradisi lama

Kata Kunci:

Pendekatan Efektif;
Transformasi Madrasah;
Sumatera Barat.



1. Introduction

Transformation is a profound and comprehensive process of change from an initial condition to a new state that is fundamentally different. The term is commonly used to describe alterations encompassing various aspects such as organizational structure, culture, technology, and systems. Transformation can have positive impacts, such as progress and quality improvement, but it may also bring negative effects like decline or deterioration. In the field of education, transformation refers to changes in teaching methods, strategies, curricula, and learning philosophies aimed at enhancing the relevance, effectiveness, and overall quality of education. This process is continuous and requires commitment as well as active involvement from all stakeholders involved.

Significant changes in Islamic educational thought began to emerge during the modern era, when Muslims were confronted with the challenges of colonialism, modernization, and globalization. Reformist figures such as Muhammad Abduh, Syed Ahmad Khan, and Fazlur Rahman reconstructed educational thought using approaches that were contextualized to the realities of their time. These figures emphasized the importance of integrating religious knowledge with modern sciences within the framework of Islamic epistemology. They advocated for curriculum reform that combined Islamic values with the principles of rationality and modern science, without eroding Islam's identity as the foundational basis of education. In the contemporary era, Islamic education faces new challenges such as the influence of secularization, the rise of digitalization, and the demand for 21st-century skills. Therefore, Islamic education must adopt adaptive and progressive approaches to respond to these changes. Education can no longer rely solely on memorization and content mastery but must also develop digital literacy, critical thinking, collaborative skills, and an appreciation for multicultural values.

Within this framework, Islamic education is expected to serve as a platform for holistic human development, capable of bridging traditional heritage with global challenges. The movement toward a transformative Islamic education system calls for a paradigm shift in curriculum design toward a more integrative model. The curriculum should not only encompass Islamic and scientific aspects but also be structured to cultivate 21st-century competencies. Innovation in technology-based and creativity-oriented curricula is essential to create an inclusive and participatory learning environment. In this context, teachers serve as key agents of change who must transform into innovative learning facilitators, master modern pedagogy, and skillfully integrate technology effectively into the teaching and learning process. Furthermore, Islamic education must take into account the social and cultural backgrounds of learners. Local contexts often

play a crucial role in determining the success of the educational process. Islamic education will hold deeper meaning when it can connect to the real lives of students, including their social values, local culture, and the challenges they face. Therefore, adopting educational approaches rooted in prophetic values and local wisdom becomes a vital strategy in shaping students' character and spirituality in their daily lives.

Madrasahs in West Sumatra have evolved from surau-based educational institutions into formal institutions that combine religious and general education. This transformation reflects the community's need for more systematic education that is relevant to social changes. However, the quality of education, management, and curriculum relevance remain major challenges that must be addressed. Previous studies show that madrasahs have undergone several phases of transformation, from traditional to modern institutions. However, gaps in managerial aspects and educational quality still exist. Previous research also emphasizes the importance of effective leadership in improving the quality of madrasahs (Haviz et al., 2015).

History shows that madrasahs in Indonesia have undergone a process of transformation from traditional institutions to modern ones. This change has been influenced by internal factors, such as teaching quality and management, as well as external factors, including government policy and technological developments. The aim of this transformation is to balance religious education with general knowledge, thereby producing graduates with comprehensive competencies (Arifin et al., 2024). Despite the transformation, the quality of madrasah management still faces obstacles. Strategic planning, policy implementation, and program evaluation are not yet optimal. A study at Madrasah Aliyah Negeri Medan shows that adaptive management hinders the achievement of educational quality, especially in human resource management and curriculum (Nurhayati et al., 2021).

One of the main issues is the integration of religious and general curricula. A holistic curriculum can improve students' overall competence, but its implementation is hampered by limited facilities, teacher quality, and resistance to change. Research at Madrasah Aliyah Aceh Tamiang shows that a quality management-based curriculum can increase stakeholder satisfaction and student achievement (Mardiana et al., 2025). Advances in information technology have opened up opportunities to improve the quality of madrasah education. The implementation of e-learning, interactive media, and distance learning has expanded access and increased the interactivity of learning. However, there are still challenges in the form of limited infrastructure and teacher competence in utilizing technology effectively (Fatihin et al., 2023).

Government policy plays a crucial role in the transformation process. Support in the form of madrasah autonomy, teacher competency improvement, and educational facilities helps accelerate change. However, implementation obstacles such as inter-agency coordination, limited budgets, and community resistance are challenges that must be overcome (Alwi et al., 2023). Community involvement, including parents and religious leaders, plays an important role in the success of the transformation. Active participation increases support for

madrasah policies, strengthens a sense of ownership, and encourages improvements in education quality. Madrasahs need to establish effective communication with the community and involve them in program planning and evaluation (Ginting et al., 2024).

Teachers play a strategic role in improving the quality of education. Professional development through training, workshops, and certification can improve teachers' competence and motivation, thereby positively impacting student learning outcomes. A conducive work environment also encourages the growth of teachers' professionalism (Gunawan et al., 2025). Systematic evaluation and accountability of madrasah management are important to ensure that programs run according to their objectives. An evaluation system that involves stakeholders and valid data helps with continuous improvement and increases public trust in the institution (Rohidin et al., 2023). Adaptive and participatory management models are important for supporting educational quality. The involvement of all parties teachers, students, parents, and the community can improve operational effectiveness and the relevance of education to local needs (Kosim et al., 2023).

The transformation of madrasahs faces internal challenges, such as resistance to change and limited resources, as well as external challenges in the form of unsynchronized regulations and policies. The right strategy is needed to overcome obstacles and ensure that the transformation process runs smoothly. Behind these challenges, the transformation of madrasahs opens up great opportunities, including improving the quality of education, expanding access, and strengthening the role of madrasahs in the socio-economic development of the community. The implementation of innovations in curriculum, management, and technology can maximize these opportunities. The leadership of madrasah principals has a significant influence on the success of transformation. Visionary, communicative madrasah principals who are able to motivate teachers and students can accelerate positive change and improve the quality of learning.

The transformation of madrasahs is also linked to global education standards. The integration of digital literacy, critical thinking skills, and 21st-century competencies is essential for madrasah graduates to be able to compete internationally without compromising religious values. Overall, the transformation of madrasahs in West Sumatra is a complex process involving internal and external factors. Successful transformation requires effective management collaboration, community participation, policy support, teacher development, and strategic use of technology. With these steps, madrasahs can improve the quality of education and the relevance of the curriculum in the modern era.

Although various studies have examined changes in madrasahs in Indonesia for instance, research on the historical transformation patterns of Islamic educational institutions in the Minangkabau region (Yola et al., 2024), analyses of the evolution of madrasahs oriented toward the development of transformative Islamic scholars (Shofiyah & Zaelan, 2024), and studies on the integration of technology-based learning with Islamic values in East Java madrasahs (Abtokhi et al., 2023) there remain several key gaps that need to be

addressed. First, few studies have empirically designed and tested comprehensive interventions that encompass curriculum development, teacher training, technology utilization, and community participation within the context of madrasahs in West Sumatra. Second, although local cultural context is often cited as an important factor, only a limited number of studies have developed curricula that integrate local wisdom values with 21st-century skills and systematically evaluated their effectiveness. Third, most existing studies employ cross-sectional and short-term approaches, leaving a lack of longitudinal evaluations or comparative analyses across different contexts (e.g., urban vs. rural, public vs. private). Fourth, research outcomes still largely focus on traditional indicators such as test scores and content mastery, without adequately assessing 21st-century competencies like digital literacy, critical thinking, collaboration, and creativity within the madrasah framework. Fifth, the role of local communities as co-designers in the transformation process is often underrepresented in both research design and evaluation. Therefore, this study, which focuses on *“Effective Approaches in Madrasah Transformation in the Contemporary Era in West Sumatra,”* has a strong potential to fill these gaps by designing and evaluating contextual, longitudinal, and locally relevant interventions.

This study aims to explore the transformation process of madrasahs in West Sumatra, identify key issues, and formulate applicable development strategies. The ultimate goal is to contribute to improving the quality of Islamic education in the region. The transformation of madrasahs will be more effective if it is carried out through curriculum reform, improved management, and strengthening the quality of human resources to adapt to global dynamics and local educational needs. The transformation of madrasahs is influenced by internal factors such as management and teaching quality, as well as external factors such as government policy and technological advances. The interaction between these factors determines the success of the transformation process.

2. Methods

The research approach used qualitative methods and case studies to obtain a comprehensive picture of madrasah transformation (Sugiyono, 2020). Data was obtained through interviews with school principals, teachers, students, and supporting documents such as curricula, annual reports, and education policies. The techniques used included in-depth interviews, participatory observation, and document and international journal studies, Scopus, Taylor & Francis, and so on (Sugiyono, 2018). The data was analyzed thematically so that patterns and relationships between variables could be clearly identified. Once the data was available, the next technique was to analyze the data by reducing, condensing, displaying, and drawing conclusions (Miles & Huberman, 2014). The location of this research is a madrasah in West Sumatra.

3. Result and Discussion

Effective Approaches to Madrasah Transformation in the Contemporary Era in West Sumatra

Observations show that some madrasahs in West Sumatra still use a rigid curriculum that is not responsive to changing times. This inflexibility limits learning innovation and the development of contemporary skills, including critical thinking, creativity, and digital literacy (Fatihin et al., 2023). Interviews with teachers and students confirmed that limited facilities and lack of professional training were major obstacles to implementing innovative curricula. These findings are consistent with research (Gunawan et al., 2025) which emphasizes the importance of developing teacher capacity to improve the quality of learning and prepare students for the world of work. The lack of adaptation to educational technology is also a significant obstacle. Many madrasahs have not yet utilized e-learning, interactive media, or digital platforms to support learning. As a result, graduates are often ill-prepared to face competition at the national and global levels, particularly in terms of digital skills and problem-solving abilities. This highlights the need for strategic integration of technology into the curriculum.

An analysis of Islamic education policy documents indicates that centralized regulation limits the autonomy of madrasahs in developing their curriculum and internal management systems. This top-down approach hinders the adaptation of programs to local needs and student characteristics, making pedagogical innovation difficult to achieve. International research shows that school autonomy significantly increases teacher participation, student motivation, and learning quality. Despite these obstacles, case studies show that transformational leadership by madrasah principals has a positive impact on teacher performance and learning quality. Madrasah principals with a clear vision, good communication skills, and managerial competence are able to motivate teachers and students to achieve higher performance. This leadership is a key factor in the successful transformation of madrasahs, including the integration of curriculum and technology innovations (Wanyama, 2025).

The implications of these findings suggest that the success of madrasah transformation depends on a combination of government policy, internal institutional capacity, and adaptability to technology. Madrasahs that implement innovative management and transformational leadership show significant improvements in academic achievement and student satisfaction. Comparisons between madrasahs reveal that institutions with greater autonomy are able to adapt their curricula to local needs and the job market, while madrasahs that are overly dependent on central regulations tend to have limited innovation. International studies confirm that decentralization and teacher involvement in curriculum planning improve the quality of learning and student motivation. Reflection on these conditions emphasizes the need for comprehensive transformation strategies, including adaptive curriculum reform, increased teacher professionalism through continuous training, and strategic use of technology. Strengthening the transformational leadership of madrasah principals is a determining factor because they can bridge government policies with local needs.

The proposed action plan includes several key steps: first, expanding the autonomy of madrasahs in curriculum development and management; second, providing intensive and ongoing training for teachers; third, systematically integrating digital technology to support learning; and fourth, developing a transformational leadership model that emphasizes vision, communication, and collaboration. The implementation of these steps is expected to improve the quality of education and the relevance of madrasah graduates in facing global challenges.

Opportunities for Competency-Based Curriculum Development

Competency-based curricula open up opportunities to integrate religious studies with contemporary skills such as digital literacy, collaboration, and problem solving so that madrasah graduates are more socially and economically relevant. Active learning approaches (e.g., problem-based learning, discovery learning) combined with religious content can strengthen students' conceptual understanding and practical skills. A pilot program of integrated curriculum in several representative madrasahs can serve as proof of concept before large-scale implementation, as well as provide input for the development of learning resources and assessments (La Zubair & Romi Faslah, 2025).

1) Integration of Religious Studies and Skills in the Contemporary Era

The development of a competency-based curriculum (CBC) in madrasahs opens up new opportunities to integrate religious knowledge with contemporary skills such as digital literacy, collaboration, creativity, communication, and problem solving. This integration is important because the modern workplace and society demand cross-disciplinary competencies that are not only knowledge-based, but also involve character, moral values, and social skills. According to (Oudeweetering & Voogt, 2018) Contemporary curricula must balance knowledge, skills, and values so that students can adapt to rapid social and technological changes. In the context of Islamic education, this integration is not just a matter of adding digital skills to religious lessons, but of making Islamic values the ethical basis for the use of technology and social collaboration. This is in line with (Syahroni et al., 2025) which emphasizes the importance of moral intelligence and spiritual values as components of global competence in modern Islamic education.

2) Active Learning and Applied Religiosity

CBC provides opportunities for the application of active learning approaches such as problem-based learning (PBL), project-based learning (PjBL), and discovery learning, which have been proven effective in improving students' critical thinking and problem-solving skills. The problem-based learning model plays an important role in developing higher-order thinking skills because students learn through real challenges and deep reflection. In madrasahs, the application of this model can be contextualized with Islamic values, for example, a project on environmental management based on the value of *khalifah fil ardh* (human responsibility towards the earth). Research by (Handayani et al., 2025) found that the

implementation of project-based learning with the integration of Islamic values can improve collaboration, creativity, and spiritual awareness among students in Islamic schools in Indonesia.

3) Pilot Programs and Contextual Adaptation

A great opportunity for CBC in madrasahs is through pilot programs in representative schools before being implemented nationally. This stage is important to test the feasibility of learning tools, teacher readiness, and competency-based assessment mechanisms. The success of CBC greatly depends on the contextual adaptability of the education system's ability to adjust the curriculum to local social, cultural, and spiritual conditions. In the context of madrasahs, pilot programs can be a means of adapting global competency concepts to Islamic values and Indonesian culture, for example through the integration of digital competencies with digital akhlaq (media ethics) and collaborative learning with the principle of ukhuwah (brotherhood).

4) Implications for the Development of Learning Resources and Assessment

Competency-based curricula require a paradigm shift in the development of learning resources and assessment systems. Traditional textbooks need to be replaced by interactive modules, e-learning platforms, and project-based media that encourage active student participation. Furthermore, (William, 2018) states that competency-based assessments must evaluate transfer of learning abilities, namely the extent to which students can apply the knowledge and values they have learned in real-world contexts. In madrasahs, assessments can be developed using authentic assessment models that measure not only cognitive aspects, but also attitudes, spiritual values, and social skills. (Rahman, 2025) adding that competency-based ethical assessment models in Islamic education encourage a balance between intellectual learning outcomes and the moral development of students.

Management and Leadership (The Role of Madrasah Principals in Transformation)

School principals who implement transformational leadership can be drivers of change, promoting a collaborative learning culture, shared vision, and pedagogical innovation at the school level. Strengthening leadership capacity through formal training, coaching/mentoring, and professional networking has been proven to increase managerial effectiveness and the successful implementation of curriculum policies. A continuous academic supervision system and internal accountability mechanisms need to be developed so that policy changes do not stop at the document stage, but are realized in daily learning practices (Hainun et al., 2022). The principal plays a central role as a change agent. Transformational leadership that focuses on vision, inspiration, and staff empowerment can encourage pedagogical innovation, a collaborative learning culture, and the sustainability of curriculum reform. However, this role will only be effective if it is supported by capacity building (formal training,

coaching/mentoring, professional networking), a continuous academic supervision system, and clear internal accountability mechanisms.

1) The Head of Madrasah as an Agent of Change

With a transformational leadership style, the head of madrasah builds a shared vision, provides inspiration, and encourages collective commitment to change, rather than merely managing administrative activities. Educational management literature shows that effective leadership increases teacher retention, motivation, and school readiness to innovate in curriculum and learning practices. The key functions that the principal must play are formulating a vision for transformation, building a collaborative culture, and facilitating evidence-based pedagogical experiments (Nguyen et al., 2024). The concrete practice is to initiate small teams (teacher learning communities), communicate new competency achievement targets, and allocate time for professional learning communities (PLC) activities.

2) Leadership Capacity Building (Training, Coaching, and Networking)

Empirical evidence and systematic reviews show that formal training (instructional leadership, change management), ongoing coaching/mentoring, and professional networking (connections between principals/madrasahs/universities) significantly improve managerial effectiveness and the successful implementation of curriculum policies. Coaching programs that focus on classroom practices and instructional supervision accelerate the transfer of skills to everyday practice (Owan et al., 2023).

3) Continuous Academic Supervision as a Guardian of Implementation

Policy changes often “stop at the document” level if there is no mechanism for continuous and dialogical supervision. Modern supervision must move from administrative inspection to instructional supervision: criteria-based classroom observation, reflective dialogue with teachers, and follow-up interventions (micro-training, modeling). Studies show that school-based supervisory practices improve the quality of teachers' lesson preparation and classroom management.

4) Internal Accountability: From Policy to Practice

Internal accountability links the principal's vision/policy with learning outcomes. This includes transparent and fair teacher performance evaluation policies, indicators of curriculum implementation progress (e.g., percentage of PBL learning, student portfolios, authentic assessments), and periodic reporting mechanisms to the school board/stakeholders. Research on teacher evaluation confirms that a collaborative (rather than punitive) evaluation process is more effective in improving the quality of learning (Maktoum & Kaabi, 2024).

5) Contextualization of Leadership in Madrasahs / Islamic Education

Leadership in madrasahs cannot be separated from the context of Islamic values and local culture. Studies on leadership practices in madrasahs emphasize that successful madrasah principals combine modern managerial skills and values-based leadership (role modeling, character building) so that reforms do not conflict with the religious identity of the

institution. Adaptive and culturally sensitive leadership models increase the legitimacy of change in the eyes of teachers, students, and the madrasah community.

6) **Common Challenges & How to Overcome Them**

Challenges are often encountered in: (1) staff resistance, (2) limited resources, (3) inadequate principal competency for instructional supervision, (4) administrative burdens that reduce time for coaching. Mitigation strategies: Facilitate teacher participation from the design phase (ownership), allocate administrative burdens through managerial teams (curriculum deputies, IT coordinators), provide non-financial incentives such as professional recognition, research time, network access, and use a phased approach (pilot → evaluation → scale up) with clear indicators (Elkaleh et al., 2025).

Human Resources (Teacher Training and Technology Integration)

Teacher quality is key to training programs designed to develop pedagogical competencies, authentic assessment, and competency-based mastery of subject matter must be a priority. The integration of educational technology (ICT) in madrasahs requires ongoing training that combines technical aspects (digital literacy) and pedagogical aspects (how technology supports active learning). Lack of infrastructure and digital readiness among teachers are real obstacles, therefore policy intervention and funding allocation are needed to ensure access to devices and connectivity in madrasahs (Pabbajah et al., 2025).

The quality of human resources, especially teachers, is the main foundation for improving the quality of madrasah education. Teachers serve as agents of change who play a direct role in translating educational policies and innovations into classroom learning practices. Therefore, teacher training needs to focus on strengthening pedagogical, professional, social, and personal competencies based on Islamic values. Systematically designed training will help teachers design active and relevant learning processes that are capable of shaping students' critical thinking skills. (Darling-hammond et al., 2017) emphasizes that effective teacher professional development must be ongoing, collaborative, and reflective, as it has been proven to have a significant impact on improving learning outcomes. In addition, a competency-based approach requires teachers to not only master the subject matter, but also be skilled in using authentic assessments to comprehensively measure student abilities.

Digital transformation in Islamic education places the integration of information and communication technology (ICT) as an important aspect in strengthening the quality of learning in madrasahs. Teachers' mastery of technology is not limited to the use of devices, but also how the technology is used to enrich pedagogical approaches. The Technological Pedagogical Content Knowledge (TPACK) model proposed by (Koehler & Mishra, 2009) emphasizes the need for a balance between content understanding, pedagogy, and technology so that the learning process becomes more contextual and interactive. With the application of ICT, teachers can create collaborative and student-

centered learning. However, the effectiveness of technology implementation is still constrained by infrastructure limitations and low digital literacy among teachers. According to (Tondeur et al., 2017), The main obstacles include a lack of facilities, weak policy support, and limited practical training in the field.

This situation underscores the need for comprehensive policy support to strengthen the digital capacity of teachers in madrasahs. The government and Islamic educational institutions must ensure sufficient funding is available for digital competency development, the provision of learning devices, and improved internet access. Alenezi (2022) emphasizes the importance of a data- and evidence-based approach in formulating ICT policies so that digital transformation is effective and sustainable. This is in line with the view that (Gusli et al., 2025) which highlights that the success of madrasah digitization is highly dependent on the synergy between education policy, human resource readiness, and infrastructure support. Thus, teacher training in madrasahs must be implemented as a continuous professional development process that not only strengthens technical skills but also deepens pedagogical understanding of the use of technology to create innovative, inclusive, and quality-oriented learning.

Outcomes (Religiously Minded and Competent Graduates for Today's World)

Planned reforms enable madrasahs to produce graduates who are religiously balanced and have the functional skills needed in the modern workplace, such as digital literacy, communication, and critical thinking skills. The use of competency-based assessments and portfolios can capture broader learning outcomes than rote memorization tests, making the outcomes more meaningful. ETDCI Initial data from madrasahs that have adopted integrative curriculum practices show an improvement in the balance of outcomes between the religious domain and general competencies, although long-term evaluation is needed to measure the socioeconomic impact (Hasriadi et al., 2023).

1) Balance between Religious Mastery and 21st Century Competencies

A systematic transformation of madrasahs opens up great opportunities to produce graduates who have a balance between religious knowledge and the functional competencies needed in the digital age. These competencies include digital literacy, effective communication, and critical thinking skills as key prerequisites in the modern workplace. Research shows that integrating digital literacy into religious learning can strengthen student engagement and improve higher-order thinking skills that are applicable in real life. The need for madrasah graduates who are able to adapt to socio-economic changes is becoming increasingly urgent, especially amid global digital transformation. Other studies confirm that Islamic educational institutions that integrate technology into their curriculum have a greater opportunity to prepare students to face future challenges, including increasingly complex changes in the world of work. Thus, madrasahs should ideally produce graduates who are able to harmonize Islamic spiritual values with 21st-century skills such as collaboration, creativity, and global adaptability.

2) **Assessment Innovation: From Memorization Tests to Competency-Based and Portfolio-Based Assessment**

The paradigm shift from conventional memorization-based assessment to competency-based and portfolio assessment is an important step toward measuring learning outcomes more comprehensively. Recent research explains that portfolios enable teachers to assess student development holistically across three main domains: cognitive, affective, and psychomotor, which were previously difficult to measure with written exams. Portfolios not only assess final results, but also facilitate reflection, collaborative projects, and documentation of student work that demonstrates their abilities in real life. Another study from Medical Education Online confirms that portfolio-based assessment provides an authentic picture of student competency development, although a more integrated reporting system is still needed to make optimal use of competency data. Thus, the implementation of competency-based assessment in madrasahs serves not only to measure learning outcomes but also to foster students' metacognitive awareness and improve their ability to apply religious and general knowledge in a balanced manner.

3) **Initial Findings and the Importance of Long-Term Evaluation**

Various preliminary studies in madrasahs that have implemented an integrative curriculum show positive results in creating a balance between religious knowledge and general skills. The integration of digital literacy, for example, has been shown to increase student motivation and create a more interactive and contextual learning experience. However, a number of studies also emphasize that this success is still short-term and requires ongoing evaluation to comprehensively assess the socioeconomic impact of graduates. Longitudinal evaluations such as tracer studies can be used to monitor the contribution of graduates in the workplace and society, as well as to assess the extent to which their religious values and digital skills are applied in daily life. This approach will strengthen the relevance of madrasah education to the needs of contemporary society and ensure that the reforms carried out not only produce religious graduates, but also productive ones who are adaptive to global changes.

4) **Strategic Implications for Madrasah Development**

Based on the results of this study, there are several important implications for madrasahs in Indonesia, particularly in West Sumatra:

a. **Integrative Curriculum Design**

Madrasahs need to develop a curriculum that systematically combines Islamic values with 21st-century skills, rather than simply adding technology material symbolically.

b. **Assessment Reform**

Learning assessment should focus on portfolios, projects, reflection, and real-world learning, rather than merely memorizing religious texts.

c. **Tracer Study and Alumni Monitoring**

- d. Post-graduation evaluation is important to ensure that the competencies acquired are actually implemented in social and professional life.
- e. Improving Teacher Capacity and Digital Infrastructure
Madrasah teachers need to be trained to have digital literacy and modern pedagogy that encourages active and innovative learning.
- f. Contextualization with Local Culture
The transformation of madrasahs in West Sumatra should take into account local Minangkabau values such as adat basandi syarak, syarak basandi Kitabullah, so that graduates do not lose their cultural identity amid globalization (Gusli, 2024).

Thus, madrasahs in the modern era serve as educational institutions that not only transmit religious knowledge, but also shape a generation with religious character, technological skills, and readiness to compete in a dynamic global ecosystem.

Potential and Special Needs of Madrasahs in West Sumatra

Madrasahs in West Sumatra have great potential in developing Islamic education because they are rooted in the surau tradition and Minangkabau cultural values that emphasize scientific aspects, morality, and deliberation in the learning process. This tradition is a significant social and cultural asset in supporting contextual curriculum transformation and local wisdom orientation. However, various studies indicate that this cultural strength is not yet fully supported by consistent policies, adequate human resources, or sufficient financial support to drive comprehensive improvements in madrasah education quality. The imbalance between socio-cultural potential and educational policy poses challenges for madrasahs in West Sumatra in implementing modern learning innovations and utilizing educational technology (Gusli, Zakir, et al., 2024).

Therefore, a needs-based intervention program is needed that can connect traditional values with the demands of the times. One strategic step is the development of learning modules that combine Minangkabau values such as budi, musyawarah, and gotong royong with 21st-century competencies, including digital literacy, critical thinking, and collaboration. This integration can increase the relevance of the curriculum and strengthen community participation in the madrasah education transformation process. Furthermore, the synergy between local governments, traditional leaders, and Islamic educational institutions needs to be strengthened so that the transformation of madrasahs is not only formal and administrative, but also substantive, innovative, and remains rooted in a dynamic local cultural identity. Thus, strengthening the potential and fulfilling the specific needs of madrasahs in West Sumatra needs to be done through a collaborative and sustainable approach that respects local socio-cultural characteristics, so that madrasahs can develop into Islamic educational institutions that are excellent, adaptive, and relevant to global demands.

Holistic and Local Needs-Based Approach

The holistic approach in the context of madrasah development emphasizes the importance of integration between various aspects of education such as curriculum, management, human resources, infrastructure, and community support in a mutually reinforcing intervention system. Research in Yogyakarta shows that a holistic approach through the integration of spiritual, emotional, intellectual, and social dimensions in learning activities has been proven to improve students' character, academic achievement, and social resilience. Local needs assessment is a key step in ensuring that educational interventions are appropriate to the specific context of the madrasah and its community. Through mapping the conditions of teachers, facilities, local culture, and stakeholder aspirations, education policies can be designed to be more relevant and effective. Research shows that conducting needs assessments in the Madrasah Ibtidaiyah Teacher Education (PGMI) program helps develop a more contextual curriculum that is oriented towards the actual needs of teachers and the community (Lestari et al., 2024).

The active involvement of stakeholders such as teachers, school principals, school committees, parents, and community leaders is also an important factor in ensuring the sustainability of transformation. A study in West Java found that the integration of Islamic values, school culture, and collaborative governance can strengthen students' character and shape an inclusive educational ecosystem. In addition, effective contextual intervention models usually begin with pilot projects, followed by a rigorous monitoring and evaluation process, and evidence-based adjustments before being implemented on a wider scale. A study at Madrasah Ibtidaiyah Palembang shows that this approach, which combines teacher training, curriculum renewal, facility improvements, and parent involvement, has succeeded in improving the quality of learning despite resource constraints (Gusli, Junaidi, et al., 2024). Thus, a holistic and locally driven approach enables madrasahs to implement changes that are relevant to the socio-cultural conditions of their communities. This strategy not only strengthens the sustainability of educational programs but also ensures that educational reforms go beyond administrative adjustments, becoming deeply rooted in the dynamic realities of local contexts. However, the success of its implementation still depends on the readiness of school management, the capacity of educators, and adequate policy and resource support from various stakeholders.

Stakeholder Collaboration (Government, Community, and Educational Institutions)

Cross-stakeholder collaboration enables access to essential resources such as funding, expertise, and materials along with policy support and social legitimacy needed for the transformation of madrasahs. Partnerships with universities and training institutions can provide teacher training modules, classroom action research, and tested competency-based assessment models. The role of local communities and Islamic organizations should be strengthened as operational partners to ensure that the programs implemented align with

cultural values and gain local support (Wati et al., 2025). Collaboration among stakeholders including the government, educational institutions, and the community is a strategic element in strengthening the capacity of madrasahs to carry out sustainable transformation. Such cooperation enables synergy in funding, the provision of expertise, the development of learning materials, as well as the policy support and social legitimacy needed to enhance educational quality. Research indicates that structured partnerships between madrasahs and external institutions contribute positively to the improvement of students' academic, moral, and spiritual development (Gusli, Hanani, et al., 2024).

Partnerships with universities and training institutions also play a crucial role in providing professional development modules for teachers, promoting classroom action research, and developing competency-based assessment models relevant to 21st-century educational needs. Studies on multi-institutional collaboration in human resource development show that synergy between madrasahs, the government, and the private sector can enhance the effectiveness of training programs and foster learning innovation within madrasahs. Beyond educational institutions, communities and Islamic social organizations (ormas) hold a vital role as operational partners in ensuring that educational policies and programs align with local cultural values and receive strong community support. Comparative research between madrasahs in Indonesia and Thailand underscores that local community involvement has a significant impact on the sustainability and effectiveness of madrasah management (Kurnia Mira Lestari et al., 2025).

Strong collaboration not only provides resource support but also expands networks of innovation and enriches the overall ecosystem of Islamic education. Recent studies indicate that synergy among stakeholders can enhance curriculum relevance, teacher competence, and the readiness of madrasah graduates to meet the demands of the job market. Nevertheless, several challenges continue to hinder the optimization of such collaboration, including weak inter-institutional coordination, a lack of participatory communication, and limited integrated monitoring mechanisms. Studies conducted in several madrasahs reveal that although various stakeholders have been identified as partners, not all possess the same level of capacity and commitment in implementing the programs. (Ramadhoni Aulia Gusli & Hamdi Abdul Karim, 2024). Therefore, effective collaboration in the context of madrasah transformation must be built upon a clear partnership framework, with transparent role distribution, open communication systems, and consistent policy support. The involvement of universities in teacher training, active community participation in school activities, and the government's regulatory support will serve as the main foundation for realizing madrasahs that are excellent, adaptive, and deeply rooted in Islamic values and local wisdom.

4. Conclusion

The transformation of madrasahs in the modern era requires a comprehensive and adaptive strategy grounded in local realities, enabling them to face contemporary developments without abandoning Islamic values and

Minangkabau culture. In West Sumatra, effective madrasah transformation must be built upon a strong socio-cultural foundation while adopting principles of educational quality management, digital innovation, and professional governance. An integrated approach that unites curriculum design, institutional management, human resource development, and community participation has proven to be more effective than reforms that are merely partial or administrative. A crucial first step is conducting a needs assessment to ensure that every madrasah development program truly aligns with the social, economic, and cultural characteristics of the local community. A competency-based curriculum that integrates Islamic values, local wisdom, and 21st-century skills such as digital literacy, effective communication, and critical thinking is essential for producing graduates who are both religiously grounded and adaptable to global change.

Furthermore, strengthening the capacity of teachers and madrasah principals through technology-based training and classroom action research should be expanded to ensure that the transformation efforts yield tangible improvements in learning quality. In addition, the success of madrasah transformation is highly determined by the synergy among various stakeholders government, community, universities, and religious organizations that play crucial roles in providing resources, educational innovations, and social legitimacy. This cross-sector collaboration positions madrasahs not only as formal educational institutions but also as centers for community empowerment and the cultivation of Islamic character. Thus, the most effective approach to madrasah transformation in West Sumatra is a comprehensive, collaborative, and context-based one. This approach integrates the traditional Islamic and Minangkabau values with modern educational innovations, enabling madrasahs to serve both as leading educational institutions and as drivers of social and cultural progress in the contemporary era.

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