

CHANGE MANAGEMENT IN THE DIGITAL TRANSFORMATION OF PESANTREN-BASED MADRASAHs: STRATEGIES FOR PRESERVING TRADITIONAL VALUES AMID EDUCATIONAL MODERNIZATION

Faidhur Rohim¹, Nadilla Aleyda Maqhfira Agustin²
Sunan Kalijaga State Islamic University Yogyakarta, Indonesia¹⁻²
Corresponding author: faidzurrohim248@gmail.com

ABSTRACT

Digital transformation in pesantren-based madrasahs does more than transfer administrative and learning activities to digital devices; it also changes workflows, authority, competencies, and patterns of relationships among educational actors. This study analyzes the change-management process, leaders' strategies for aligning digital transformation with institutional systems and culture, and efforts to preserve traditional values amid educational modernization at MA Miftahul Ulum Bengak, Wongsorejo, Banyuwangi. The study employed a qualitative case-study design. Data were obtained from 12 purposively selected informants representing the pesantren foundation or governing body, madrasah leaders, teachers, technology administrators, administrative staff, students, parents, and alumni. Data were collected through semi-structured interviews, observation, and document analysis and were analyzed through data condensation, thematic coding, matrix displays, and conclusion drawing; trustworthiness was strengthened through source and method triangulation and member checking. The findings reveal three main patterns: change proceeded gradually through needs diagnosis, team formation, piloting, mentoring, evaluation, and institutionalization; leaders employed value-based and participatory leadership together with selective technology-use policies; and traditions were preserved by positioning adab, talaqqī, teacher and kiai role-modelling, congregational discipline, and Islamic studies as normative boundaries for transformation. The study proposes a model of digital change in pesantren-based madrasahs that positions technology as a means of strengthening governance and learning without displacing pedagogical authority or the institution's traditional identity.

Keywords: change management; digital transformation; pesantren-based madrasah; traditional values; educational leadership

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INTRODUCTION

Digital transformation has evolved from the separate use of devices into comprehensive change affecting processes, structures, user experience, and organizational culture. In education, it is evident in academic information systems, blended learning, digital archives, communication with parents, cashless payments, and data analytics. Pesantren face more complex demands because technology promises efficiency while also introducing communication patterns, sources of knowledge, and new habits that are not always compatible with the discipline of residential life. Studies of pesantren education indicate that technology can broaden access to learning resources and improve services, but its success depends on human readiness, infrastructure, and leadership direction (Nugroho & Astutik, 2024; Zafi et al., 2021). The central issue, therefore, is not whether pesantren should use technology, but how such change should be managed so that digital benefits can be realized without diminishing the formative aims of *adab* and *tafaqquh fi al-dīn*.

Pesantren possess distinctive organizational characteristics: strong *kiai* authority, the integration of learning and worship, close teacher–student relationships, and traditions transmitted through everyday practice. Digitalization focused solely on applications risks producing systems that are technically new but socially rejected, only partially used, or disruptive to students’ concentration and discipline. Research on pesantren digitalization reveals diverse patterns of adaptation, ranging from learning media and integrated administrative systems to online classical-text instruction and digital economic initiatives (Yuwanda et al., 2023; Hidayah et al., 2025; Hasibuan & Tolentino, 2025). These findings affirm that digital transformation is not merely an information-technology project. It is an organizational change process that affects the division of roles, teachers’ competencies, control over device use, policy legitimacy, and the ways pesantren maintain the continuity of tradition.

The change-management literature explains that successful transformation requires strategic direction, communication, participation, readiness, organizational learning, and the institutionalization of new practices. Digital leadership must also bridge a technological vision with organizational members’ adaptive capacity (Özkan Alakaş, 2024; Philippart, 2022; Akarsu et al., 2026). However, concepts of change developed in business organizations or mainstream schools cannot simply be transferred to pesantren. Decisions in pesantren derive legitimacy not only from formal

positions but also from moral trust in the *kiai*. Acceptance of change is likewise often determined by leaders' ability to demonstrate that innovation does not conflict with *khidmah*, *adab*, simplicity, self-reliance, and scholarly tradition. These distinctive features require a value-sensitive interpretation of change management.

Previous studies have largely described the technologies used or their effects on learning and administration. Some have examined the transition from digitization to digitalization, the integration of tradition and technology, students' digital literacy, infrastructure policy, service governance, cultural change, and the strengthening of the *pesantren* economy (Ridho et al., 2024; Happyana et al., 2025; Agus Alif Humaydiy et al., 2026; Sutrisno & Mas'ud, 2026; Amirudin & Nur Mizan, 2026; Anonim, 2026; Nilawati Idris, 2026; Maylinda Putri Maharani, 2025; Muhardi, 2025; Mahmudah & Ridwan, 2025; Mohammad Khoirur Rachman & Ahmad Mohammad Tidjani, 2024; Abdurahman et al., 2026). Despite their importance, these studies offer limited explanations of the sequence of change, the actors who build acceptance, mechanisms for addressing resistance, and the translation of traditional values into operational rules. Consequently, transformation is often portrayed as the presence of devices and platforms rather than as an ongoing organizational negotiation. This gap provides the basis for the present study.

This study addresses three questions. First, how is change managed in the implementation of digital transformation at MA Miftahul Ulum Bengak, Wongsorejo, Banyuwangi? Second, what strategies do leaders employ to align digital transformation with the systems and culture of a *pesantren*-based madrasah? Third, how does the institution preserve traditional values amid educational modernization and digital transformation? The study seeks to connect the stages of change, value-based leadership, and mechanisms for preserving tradition. Conceptually, it draws on the diagnosis–mobilization–implementation–institutionalization framework, change readiness, digital leadership, and organizational culture. Practically, the findings are expected to guide managers of *pesantren*-based madrasahs in organizing digitalization gradually, measurably, and in ways rooted in institutional identity.

METHOD

This study employed a qualitative approach with a case-study design. A case study was selected because the research focused on processes, decisions, meanings, and interactions among actors involved in digital transformation within a single institution with clearly defined organizational and cultural

boundaries. This approach enabled the researchers to understand change not only through the use of devices or applications, but also through actors' experiences, leadership patterns, responses to change, and efforts to preserve institutional values. The unit of analysis was the change-management process in the digital transformation of MA Miftahul Ulum Bengak, Wongsorejo, Banyuwangi. The study observed informed consent, confidentiality, and the use of data solely for academic purposes.

The research site was MA Miftahul Ulum in Bengak, Wongsorejo District, Banyuwangi Regency, East Java. The madrasah was purposively selected because it employs technology in administrative services and learning while preserving the values and traditions of pesantren-based education. The digital-transformation practices examined included student-data management, attendance, official communication with parents, electronic archives, administrative services, and the limited use of digital learning materials. Informants were selected through purposive sampling based on their involvement in decision-making and technology implementation, teaching experience, position as users, and relationship to madrasah services. Twelve informants were assigned role-based codes to protect their identities and facilitate the presentation of data.

Table 1. Profile of research informants

Code	Informant role	Number	Data relevance
PG-01	Governing body/Foundation	1	Vision, values, and change legitimacy
MP-02	Madrasah Principal	1	Planning and coordination
KD-03	Vice Principal for Curriculum	1	Curriculum and scholarly tradition
KS-04	Vice Principal for Student Affairs	1	System integration and academic services
UT-05	Senior Teacher	1	Acceptance and resistance
UM-06	Junior Teacher	1	Digital learning practices
TI-07	Technology Administrator	1	Infrastructure and support
AD-08	Administrative Staff	1	Service digitalization
SN-09	Senior Student	1	Experience and digital discipline
SN-10	Junior Student	1	User adaptation
WS-11	Parent	1	Communication and accountability
AL-12	Alumnus	1	Continuity of values and networks

Data were collected through semi-structured interviews, observation of learning and administrative activities, and examination of documents such as device-use policies, activity schedules, information-system guidelines, and evaluation minutes. Interview questions addressed the drivers of change, decision-making processes, members' responses, forms of assistance, emerging conflicts, perceived outcomes, and ways of preserving institutional values. Data analysis comprised four stages: transcription and familiarization, initial coding, grouping codes into themes, and verifying the relationships between the themes and research questions. Trustworthiness was strengthened through source and method triangulation by comparing information across informants and matching interview evidence with observations and documents. Negative-case analysis and member checking were also conducted to ensure interpretive accuracy. Informants' identities were anonymized, and quotations were selected for their thematic relevance and their ability to represent diverse actor experiences.

RESULTS AND DISCUSSION

The findings from MA Miftahul Ulum Bengak reveal three themes in its digital transformation: gradual change from needs identification to institutionalization; value-based and participatory leadership; and the preservation of tradition through selective technology use and the reinforcement of core practices. These themes are interrelated. The stages of change provide an operating mechanism, leadership supplies legitimacy and direction, and traditional values serve as criteria for accepting, limiting, or rejecting particular uses of technology.

1. The Change-Management Process: From Diagnosis to Institutionalization

Change began with shared operational problems rather than a desire to follow trends. Student data were dispersed, payment reconciliation was slow, information provided to parents was inconsistent, and digital learning materials were stored in personal accounts. Leaders diagnosed needs through unit meetings and service-process mapping. This diagnosis reframed technology from a symbol of modernity into a problem-solving instrument. Urgent needs were prioritized, while features that did not directly support services were postponed. The pattern indicates that transformation began with problem-solution fit and organizational readiness rather than system procurement.

“We did not begin by asking which application was the most sophisticated. We started by identifying which tasks were most frequently delayed and caused confusion among parents. Only then did we select the system that was genuinely needed.” (MP-02, interview, 2026).

The next stage was the formation of a change team comprising leaders, technology administrators, administrative personnel, heads of educational units, and user representatives. This small team translated the governing body’s vision into procedures, coordinated needs across units, and prevented technological control from becoming concentrated in one individual. Technology administrators were not granted sole authority because decisions concerning data, learning, and discipline remained with the relevant unit leaders. This cross-functional structure reflects the principle that digital transformation requires a combination of leadership, technical capability, and organizational learning. In the pesantren context, a change coalition also requires the moral endorsement of the governing kiai so that innovation is not perceived as a technical agenda detached from educational purposes.

“The IT unit explains what is technically possible, but the boundaries of use are determined collectively. When a matter affects study periods, residential rules, or teacher–student relationships, the decision must return to the governing body and the head of religious education.” (TI-07, interview, 2026).

Implementation proceeded through pilot projects. Attendance and payment systems were tested in one unit, while digital materials were used by several teachers who were ready to adopt them. The pilots exposed connection problems, duplicate accounts, difficulties experienced by senior staff, and the potential use of devices for purposes unrelated to learning. Following evaluation, interfaces were simplified, access rights were separated, and concise guidelines were prepared. This gradual approach reduced disruption to pesantren routines and allowed social corrections before technical expansion. The practice supports findings that technology adoption in pesantren is more stable when aligned with institutional capacity, needs, and characteristics.

“During the first month, I still recorded everything twice because I was concerned that the data might be lost. After training and after we saw that reports could be retrieved, we gradually reduced manual recording.” (AD-o8, interview, 2026).

Resistance arose primarily from fears of losing roles, concerns about the erosion of adab, and the burden of learning a new system. Leaders did not treat every objection as an anti-change attitude. They distinguished competency problems, technical problems, and value-related concerns. Competency issues were addressed through individual assistance, technical issues through system improvements, and value concerns through forums involving the governing body and senior teachers. This strategy turned resistance into information for improving the change design. Theoretically, member involvement and change communication strengthen readiness because individuals understand the reasons, benefits, and boundaries of change.

“I do not reject technology, but students should not come to believe that all knowledge can be found independently. Once it was explained that digital materials were only supplementary and that religious learning would remain teacher-led, I could accept it.” (UT-o5, interview, 2026).

Institutionalization occurred when digital practices were incorporated into policies, budgets, task allocation, evaluation, and competency-development programs. The institution established official accounts, data-backup schedules, service officers, response standards for parents, and monthly evaluations. Success was measured not only by user numbers, but also by data accuracy, reduced repetitive work, service speed, compliance with rules, and the uninterrupted continuation of core activities. Digital change thereby moved from a temporary project to an organizational capability. Institutionalization nevertheless remained adaptive: systems could be discontinued or modified if they produced effects contrary to educational aims. This finding extends the concept of institutionalizing change by showing that, in value-based organizations, the sustainability of innovation depends on both performance and normative congruence.

2. Leadership Strategies: Aligning Technology, Systems, and Pesantren Culture

The principal leadership strategy was to articulate a vision of technology as a khādim, or servant of education, rather than a substitute for pedagogical relationships. This simple formulation established a hierarchy of decisions: educational purposes took precedence over efficiency, and scholarly authority was not delegated to a platform. The governing body used study forums, meetings, and role-modelling to explain the reasons for change. Its language was not merely technical, but connected technology with trustworthiness, order, public benefit, and responsibility for time. Such framing narrowed the distance between innovation and the moral vocabulary already understood by members of the institution. Effective digital leadership indeed requires the capacity to articulate the purpose of technology within an organization's identity.

"We accept technology insofar as it helps us fulfil our educational responsibility. It must not become the master that governs every aspect of institutional life. Values, teachers, and the purpose of student formation must continue to determine the direction." (PG-01, interview, 2026).

Leaders also applied tiered participation. The governing body established the general direction and value boundaries; a cross-unit team discussed operational design; and feedback on implementation was gathered from staff, teachers, students, and parents. This model was not equivalent to unrestricted democratic decision-making because the pesantren's authority structure was preserved. Participation was used to obtain information, build ownership, and improve implementation quality. The combination of normative authority and operational consultation enabled timely decisions without disregarding user experience. At the organizational level, this strategy resembles ambidextrous leadership: maintaining identity stability while allowing controlled experimentation.

"The governing body establishes the basic rules, but we evaluate their application together. Students often offer simple suggestions that managers have not considered, such as access times and the wording of notifications." (KS-04, interview, 2026).

Alignment with the educational system was achieved by mapping the academic calendar, worship schedule, religious learning, formal schooling, permissions, and services for parents. Technology was not applied uniformly to every activity. Repetitive administrative work requiring accuracy was digitalized more extensively, whereas activities dependent on proximity, oral correction, role-modelling, and habituation remained predominantly face-to-face. Videos, digital libraries, and quizzes served as enrichment rather than substitutes for sorogan, bandongan, musyāwarah, and talaqqī. This selective strategy accords with research emphasizing the integration of tradition and technology rather than the replacement of tradition.

“Digital media are useful for vocabulary and repetition. However, when reading classical texts, students must still attend to how the teacher provides meaning, explains context, and corrects their reading.” (UM-06, interview, 2026).

The next strategy was differentiated capacity development. Administrative staff were trained to manage data and reports; teachers received training in material design and digital ethics; students attended digital-literacy orientation; and unit leaders learned to interpret dashboards for decision-making. Assistance was provided in small groups so that slower participants would not feel embarrassed. The institution also established a rapid-support mechanism through a single official channel. Role-based training avoided the assumption that one general session would suffice for every user. The literature indicates that competency, digital culture, and leadership support are mutually reinforcing factors in transformation readiness.

“Training was not conducted as a single session for everyone. As teachers, we needed guidance on preparing materials and maintaining students’ focus, while office staff required accuracy in data entry and data security.” (KD-03, interview, 2026).

Leaders managed risk through restricted-access policies, account separation, content approval, data backup, and scheduled device use. Supervision was not solely punitive. Students were taught about digital footprints, tabayyun, privacy, copyright, distraction, and responsible time use. Parents were involved through official communication channels so

that they did not depend on potentially inconsistent personal messages. These policies demonstrate that digital governance in pesantren encompasses technical, pedagogical, and ethical dimensions. Culturally aligned transformation does not mean transformation without rules, but innovation within boundaries that can be understood and evaluated.

“We appreciate receiving information more quickly, but a single communication channel has been most helpful. Previously, information from different groups sometimes conflicted; parents now know which announcements are official.” (WS-11, interview, 2026).

3. Preserving Traditional Values amid Modernization

Traditional values were preserved not by rejecting all technology, but by identifying core practices whose meaning must not be lost. Field data show that these practices included respect for teachers, congregational discipline, simplicity, khidmah, self-reliance, Islamic studies, continuity of scholarly tradition, and community life within the madrasah. Each innovation was assessed in terms of its effects on these practices. Technology was accepted when it supported order or broadened enrichment without reducing educational interaction. Its use was restricted when it generated individualization, distraction, or ambiguity regarding scholarly authority. This approach shows that preserving tradition involves translating values into design and policy criteria.

“For us, preserving tradition does not mean that everything must remain as it was in the past. What must be protected are adab, the chain of learning, togetherness, and earnestness. The tools may change as long as this essence is not lost.” (AL-12, interview, 2026).

Adab was positioned as a digital competency rather than merely as a set of rules preceding technology use. Students were habituated to request permission, acknowledge sources, refrain from interrupting teachers merely because they had found an online answer, and avoid distributing internal materials without consent. When using digital sources, they were directed to verify information with teachers and compare sources. In this way, tabayyun and respect for scholarly authority were translated into media practices. Religious digital literacy became part of character formation rather than a separate supplementary subject. This is important

because abundant information can broaden knowledge while weakening validation processes when students lack an ethical framework.

“When we find a religious explanation on social media, we do not immediately treat it as truth. We usually make a note of it and then ask about it during deliberation sessions or consult a teacher.” (SN-09, interview, 2026).

The learning tradition was maintained through an asymmetrical hybrid model. Asymmetry meant that face-to-face meetings remained central, while digital media supported preparation, practice, documentation, and enrichment. Recordings did not replace attendance at religious lessons; digital texts did not automatically replace the practice of annotating printed texts; and online forums did not replace musyāwarah, which cultivates confidence and speaking etiquette. This choice differs from blended learning that allocates activities solely on the basis of efficiency. The institution allocated activities according to the forms of knowledge and values to be developed. Pesantren curriculum transformation integrating digital practices and turāth must likewise preserve the underlying scholarly logic, not merely the format of content.

“Videos help me review lessons, but the experience is different when I do not attend class. In the classroom, corrections are immediate, and we also learn how to conduct ourselves before a teacher.” (SN-10, interview, 2026).

Values were also maintained through non-digital routines. Access to devices was restricted during worship, core religious lessons, khidmah, communal meals, and residential activities. Device-free spaces were understood not as backwardness but as an educational design for safeguarding attention, social relationships, and self-discipline. These boundaries conveyed the symbolic message that not every experience should be mediated by a screen. At the same time, managers avoided unrealistic prohibitions by providing clear times and places for access. Balancing restriction with literacy reduced concealed use and opened space for dialogue about digital problems.

“If access were available at all times, residential activities would become quiet and everyone would be occupied individually. The

schedule tells us when technology should be used for learning and when we must be fully present with our peers.” (SN-09, interview, 2026).

Role-modelling by leaders and teachers constituted the strongest mechanism for preserving values. Device-use rules lost legitimacy when managers themselves used devices without restraint during teaching or communal activities. Leaders therefore established standards of conduct for educators, including the use of official channels, caution in sharing content, and a willingness to learn technology without abandoning personal interaction. Traditional values endured not only in documents but also through consistency between messages and actions. In pesantren, moral authority enables change to be accepted, but it also requires leaders to model the boundaries they establish. This is where change leadership and pedagogical role-modelling intersect.

“Students quickly notice whether rules apply only to them. When teachers also put away their phones during religious study, the restriction feels educational rather than merely prohibitive.” (UT-05, interview, 2026).

Taken together, the findings produce a “value-anchored digital transformation” model. The model comprises five elements: diagnosis of genuine needs; value-based legitimacy and direction from leaders; a cross-role coalition; gradual experimentation accompanied by support; and institutionalization incorporating ethical boundaries and evaluation of cultural effects. Technology operates within a corridor of values, while values are translated into operational decisions. The model challenges two extremes: a romanticization of tradition that forecloses necessary change and technological determinism that assumes modernization invariably produces progress. Pesantren can become adaptive precisely when identity is used as a resource for evaluating innovation rather than as a reason for rejecting it. Preservation and transformation are therefore not mutually exclusive agendas, but two processes that must be designed simultaneously.

CONCLUSION

Change management in pesantren digital transformation proceeded through problem diagnosis, priority setting, cross-functional team formation, piloting, assistance, evaluation, and institutionalization. Change became more acceptable when technology was introduced as a response to genuine needs and

members' objections were treated as data for improving the design. Leadership strategies rested on a vision of technology as a servant of education, value-based legitimacy, tiered participation, selective integration into educational processes, role-appropriate competency development, and risk governance. Traditional values were preserved by defining core practices, translating adab into digital ethics, maintaining direct learning as the center, providing non-digital spaces, and strengthening leaders' role-modelling. Theoretically, the study demonstrates that change management in pesantren should include normative congruence as a criterion of success alongside effectiveness and adoption. Practically, pesantren are advised to begin with needs and cultural audits, use pilot projects, establish indicators of pedagogical impact, and regularly evaluate technology's effects on discipline, teacher-student relationships, and scholarly traditions. The study is limited by its single-case design at MA Miftahul Ulum Bengak and its restricted observation period. Future research should compare multiple pesantren-based madrasahs and employ longitudinal observation to assess the applicability of the proposed model in broader contexts.

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