Jurnal Visionary: **Penelitian dan Pengembangan di Bidang Administrasi Pendidikan**
Research in Educational Management and Leadership
Volume 14 Number 1 April 2026
Journal Homepage: https://e-journal.undikma.ac.id/index.php/visionary

Transformation and Organizational Resilience: PAI Strategies in Facing Global Challenges in the Digital Era

Asep Deny Firdaus[1], Iyad Suryadi[2], Helmawati[3], Saeful Anwar[4]

[1,2,3,4] Sekolah Pascasarjana, Universitas Islam Nusantara Bandung, Bandung, Indonesia.
Email: adenyfirdaus@gmail.com, *helmawati.dr@gmail.com*[2], *Iyadsuryadi@uninus.ac.id*[3]
saefulanwar@uninus.ac.id

Article Info

Received: 12/02/2026
Accepted: 13/03/2026
Published: 10/04/2026

Abstract: This study aims to analyze Islamic Religious Education (PAI) strategies in facing global challenges and infrastructure limitations at MIN 5 Cilacap. Utilizing a qualitative approach with a holistic single case study design. Data were collected through observation, in-depth interviews, and documentation studies, then analyzed using Miles, Huberman, and Saldana's interactive model. Findings reveal planning strategies based on Managerial Realism and digital content curation (gatekeeping) effectively balance limited budgets. Technology implementation successfully shifts the paradigm from verbalism to concrete visualization and creates joyful learning through evaluation gamification. The success of this digital transformation is supported by organizational resilience, transformational leadership, and peer tutoring. Physical facility limitations in border areas can be overcome through pedagogical adaptability and social capital (humanware), establishing technology as an epistemological bridge without losing the spiritual essence of Islamic education.

Keywords: Transformation and Organizational Resiliences, Global Challenges, Digital Era

Abstrak: *Penelitian ini bertujuan menganalisis strategi Pendidikan Agama Islam (PAI) dalam menghadapi tantangan global dan keterbatasan infrastruktur di MIN 5 Cilacap. **:** Menggunakan pendekatan kualitatif dengan desain studi kasus tunggal holistik. Data dikumpulkan melalui observasi, wawancara mendalam, dan studi dokumentasi, kemudian dianalisis menggunakan model interaktif Miles, Huberman, dan Saldana. Temuan menunjukkan strategi perencanaan berbasis Realisme Manajerial dan kurasi konten digital (gatekeeping) yang efektif menyeimbangkan anggaran terbatas. Implementasi teknologi berhasil menggeser paradigma verbalisme menuju visualisasi konkret dan menciptakan joyful learning melalui gamifikasi evaluasi. Keberhasilan transformasi digital ini ditopang oleh resiliensi organisasi, kepemimpinan transformasional, dan kolaborasi sejawat (peer tutoring). Keterbatasan fasilitas fisik di wilayah perbatasan dapat diatasi melalui adaptabilitas pedagogis dan modal sosial (humanware), menjadikan teknologi sebagai jembatan epistemologis tanpa menghilangkan esensi spiritualitas pendidikan Islam.*

Kata Kunci: *Transformasi dan Resiliensi Organisasi, Tantangan Global, Era Digital.*

Introduction

Entering the third decade of the 21st century, the global education landscape is experiencing tectonic shocks due to the acceleration of the 4.0 Industrial Revolution, which is now moving rapidly towards the Society 5.0 era. This fundamental change not only alters economic and social structures but also disrupts how humans produce, distribute, and consume knowledge, including religious knowledge. Trilling and Fadel (2009) emphasize that the greatest challenge of today's education is preparing students for an uncharted future, using technology that has not yet been created, to solve unknown problems. In this context, the

integration of technology in learning is no longer a cosmetic option to look modern, but an epistemological imperative to ensure the relevance of education itself.

For Islamic Religious Education (PAI), this global challenge is existential and paradoxical. On one hand, PAI carries a sacred theological mandate to transfer Islamic knowledge (*transfer of knowledge*) and internalize moral values (*transfer of values*) derived from revelation. On the other hand, PAI must confront the profane reality of students living in a digital ecosystem that is fast, visual, and instant (Anwar et al., 2025; Suherman et al., 2025). Azyumardi Azra (2012) highlights those Islamic educational institutions are often trapped in normative-textual approaches and rigid one-way lecture methods (*teacher-centered*). Consequently, psychological alienation occurs where PAI is perceived as a boring artifact of the past, irrelevant to the dynamics of students' modern lives.

This situation is exacerbated by a sharp generational gap. Today's students are what Marc Prensky (2001) calls *digital natives*. Their cognitive structures are formed to process information in a multi-tasking and visual manner. Conversely, the majority of PAI teachers fall into the *digital immigrants* category, often stuttering in adopting digital culture. If this gap is not bridged, students potentially seek alternative religious authority from the internet ("Sheikh Google") or social media influencers whose scientific authority is questionable and prone to radicalism infiltration.

The Ministry of Religious Affairs of the Republic of Indonesia has responded to this urgency through the Madrasah Digital Transformation roadmap, requiring teachers to master Technological Pedagogical Content Knowledge (TPACK) competencies. However, empirical reality in the field often shows a wide gap between policy expectations (*Das Sollen*) and actual practice (*Das Sein*). Many educational institutions, including at the primary level like Madrasah Ibtidaiyah (MI), possess basic technology infrastructure but fail in its strategic implementation. Technology is often interpreted reductionistically; merely moving text from printed books to projector screens without changing the underlying pedagogy.

The case study at MIN 5 Cilacap represents a microcosm of these macro challenges. As a public madrasah located in a border area, MIN 5 Cilacap faces a dual challenge: geographical limitations and global demands. Initial observations indicate a phenomenon of "strategic stuttering," where teachers have the desire to adapt but falter in methodological execution. Although basic infrastructure is available, its utilization has not touched on substantive pedagogical aspects. PAI teachers at this madrasah grapple with the dialectical tension between maintaining the sanctity of religious messages and modernizing delivery media, often triggering confusion in instructional design.

This research becomes crucial because it not only aims to inventory technical obstacles as previous research has done but seeks to dissect the "black box" of PAI teacher strategies in navigating this transition. The main focus is analyzing how teachers design learning that utilizes technological sophistication without losing the essence of Islamic spirituality amidst physical facility limitations. This study assumes that behind the infrastructure limitations of border areas, there lies unique organizational resilience and pedagogical adaptation that can serve as a model for other madrasahs. Thus, this research is expected to contribute theoretically to the formulation of adaptive PAI strategies capable of standing tall in maintaining tradition (*turats*) while embracing modernity in the global era.

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Method

This study employs a qualitative approach with an interpretivism paradigm to understand the meaning and processes behind learning strategies. The applied design is a holistic single case study (*single case holistic design*), positioning PAI strategies at MIN 5 Cilacap as a unified system that is intact and context-bound (*bounded system*). The research location was chosen purposively due to the unique characteristics of this madrasah as a public institution in a border area undergoing digital transformation.

Research participants include the Madrasah Head as the policy stakeholder, teachers of the PAI subject cluster (Aqidah Akhlak, Fiqh, SKI, Al-Qur'an Hadith), and students. Data collection was carried out through three main techniques: (1) Participatory observation to directly observe TPACK implementation and student interaction in class; (2) In-depth interviews to explore the reasons behind teachers' pedagogical decisions; and (3) Documentation study of lesson plans (RPP), digital artifacts, and infrastructure documents. Data analysis followed the interactive model of Miles, Huberman, and Saldana (2014), consisting of data condensation (*data condensation*), data display (*data display*), and conclusion drawing/verification. Data validity is ensured through source and technique triangulation as well as member checking (*member check*) to guarantee the credibility of findings.

Result and Discussion

1. Managerial Realism and Digital Curation within the TPACK Framework

   Research findings at MIN 5 Cilacap reveal an interesting phenomenon regarding a paradigm shift in the pre-instructional stage. The planning strategy for Islamic Religious Education (PAI) learning at this madrasah has undergone a fundamental transformation, moving from mere fulfillment of rigid administrative routines to adaptive and anticipatory strategic instruments. If previously Lesson Implementation Plans (RPP) or Teaching Modules were often viewed as dead documents for supervisory needs, now they become living navigation maps responding to the dynamics of the times. Comprehensive data analysis reveals that this transformation is supported by two mutually reinforcing main pillars: Managerial Realism policy at the leadership level and tight Digital Curation integration at the teacher level.

   At the managerial level, the Head of MIN 5 Cilacap applies a leadership strategy categorized as prudent *Resource Dependence*. Facing a double squeeze—namely limited School Operational Assistance (BOS) budgets on one hand, and global demands for digitalization and the obligation to organize inclusive education on the other—the madrasah chose not to get trapped in ambitions for massive and instant high-end technology procurement. The leadership realizes that forcing the purchase of luxurious devices like smartboards or tablets for every student would shake the madrasah's operational stability and sacrifice other crucial posts.

   Instead, a "Budget Priority Scale and Asset Optimization" strategy is applied. This policy is clearly reflected in the Madrasah Head's narrative, placing human values and inclusivity on par with, or even more urgent than, physical modernization. As revealed in the findings: "Our toughest challenge is in budget planning... So to build ramps or special toilets for the disabled this year cannot be fully covered yet. We can only plan minor

E-mail address: visionary@undikma.ac.id

repairs." This statement implies an ethical struggle in planning: the madrasah must divide a small budget pie to ensure accessibility for special needs students is maintained, while slowly paying off technology needs.

In the perspective of *Resource Dependence* theory (Pfeffer & Salancik, 1978), this decision is not a sign of managerial incompetence or resistance to progress. Rather, it is a smart organizational adaptation strategy to survive and remain functional amidst resource scarcity (*resource scarcity*). The Madrasah Head does not reject technology but contextualizes technology according to the institution's carrying capacity. This policy indirectly requires teachers to change their mindset from demanding facilities to utilizing existing ones. Teachers are encouraged to be creative using cheap but effective technology (*low cost, high impact*) and optimizing personal devices (*Bring Your Own Device/BYOD*). This approach successfully avoids the trap of *technological determinism*—a naive belief that procuring sophisticated tools will automatically improve education quality—which often ignores the readiness of cultural ecosystems and supporting infrastructure.

Teaching Module document findings show highly selective digital link integration. This is where the new role of the PAI teacher emerges: no longer just an information conveyor, but as a *Gatekeeper* or strict content curator. This strategy becomes crucial in the post-truth era and information flood (*information overload*), where the internet is filled with unverified, biased, and even radical religious narratives. PAI teachers realize that letting students surf for religious material without guidance is a risky action. This awareness is confirmed by the statement of the Aqidah Akhlak Teacher: "I watch the video until the end first... I only take from credible channels like Kemenag or NU Online." The act of watching until the end before inserting video links into the RPP is a form of serious content validation. Teachers perform theological filtering to ensure that the digital material is free from elements of violence, pornography, or aqidah deviation.

This Digital Curation strategy is essentially a praxis manifestation of critical digital literacy (Buckingham, 2007) combined with the principle of *hifz al-aql* (preserving the intellect) in Maqashid Shariah. Teachers consciously plan learning as an ideological filter to fortify students' aqidah from exposure to radical, intolerant, or hoax content rampant in the digital ecosystem. Thus, PAI learning planning serves a dual function: as instructional design for knowledge transfer, and as a spiritual defense fortress. Furthermore, this planning also adopts the *Backward Design* pattern (Wiggins & McTighe, 2005). Teachers do not start planning from "what will I do today," but from "what is the evidence that students understand." Teachers establish understanding goals and assessment evidence—such as high scores in Quizizz gamification or video analysis skills—first, then design relevant learning activities. This shift towards *outcome-based planning* makes technology integration more directed and meaningful, not just an add-on.

Therefore, in their planning, teachers always prepare material in offline formats (download at the beginning/offline) as a backup. Analysis of this phenomenon aligns with the *Resilience in Education* theory (Gu & Day, 2007). Teachers build fail-safe mechanisms to ensure learning continuity (*learning continuity*) even if technology infrastructure fails. When the internet goes down, learning does not stop; teachers alertly switch to materials stored on flash drives or laptops. This anticipatory attitude proves that physical and geographical limitations at MIN 5 Cilacap can be overcome with anticipatory and reflective instructional design maturity. Learning planning is not compiled in an idealistic vacuum,

but grounded in field reality full of uncertainty, making PAI teachers at this madrasah resilient and adaptive practitioners in facing global challenges.

2. Pedagogical Implementation: From Verbalism to Visualization and Connectivism

Technology implementation in the Islamic Religious Education (PAI) learning process at MIN 5 Cilacap is not merely a technical phenomenon of replacing blackboards with projector screens, but marks a significant epistemological shift. Technology in this madrasah is no longer positioned as a mere presentation aid (*supplementary tool*), but functions as a cognitive bridge (*cognitive bridge*) that fundamentally changes how students process, understand, and internalize religious concepts. Based on in-depth analysis of observation and interview data, the effectiveness of this implementation is identified in three main pedagogical dimensions: visualization of abstract concepts in doctrinal material, contextual-connectivist exploration in history material, and gamification at the evaluation stage.

In the first dimension, particularly in Aqidah Akhlak and Fiqh subjects, technology implementation presents as a solution to the classic religious education problem: verbalism. Historically, material that is metaphysical-eschatological (such as the events of the Last Day, the grave realm) or complex procedural material (such as Hajj rituals and corpse management) was often taught through dry lecture methods. Madrasah Ibtidaiyah (MI) age students, who according to Piaget are at the concrete operational stage, often struggle to build accurate mental constructions if relying solely on teacher oral descriptions. Consequently, the understanding formed is often partial or even misconceived.

When teachers show visual simulations of *tawaf* procedures around the Kaaba or scientific visualizations of universe destruction during the apocalypse, technology acts as *Cognitive Scaffolding*. In the perspective of *Cognitive Load Theory* (Sweller, 1988), this visualization functions to lower extraneous cognitive load (*extraneous cognitive load*). Students no longer need to expend large mental energy just to imagine the shape of the Kaaba or the sequence of Hajj pillars, because the visualization is presented before their eyes. Consequently, student cognitive capacity can be fully diverted to process *germane load*, namely understanding the meaning, wisdom, and spiritual value behind the worship. Its instructional impact is significant; not only does cognitive understanding increase, but also affective responses in the form of a *sense of awe* and spiritual vibrations that strengthen faith, making PAI material more alive and touching the heart.

In the second dimension, technology implementation in Islamic Cultural History (SKI) subjects reflects the application of *Connectivism* theory initiated by George Siemens (2005) and the *Contextual Teaching and Learning* (CTL) approach. The biggest challenge of history learning is students' perception that SKI is merely boring memorization of years and figure names, disconnected from current reality. Teachers at MIN 5 Cilacap answer this challenge by utilizing geospatial applications like Google Earth and virtual tours. Within the connectivism theory framework, learning is a process of connecting information nodes (*nodes*). Teachers facilitate students to connect history text in books (text nodes) with geographical reality on the internet (visual-spatial nodes). This strategy changes the SKI learning paradigm from one originally based on temporal memorization (time sequence) to spatial exploration (space understanding).

Students are invited on a virtual journey to the Arabian Peninsula, seeing the topography of Uhud hill or the distance between Mecca and Medina. This triggers students' critical reasoning to analyze the causality of historical events. For example, students can understand why the archer troops on Uhud hill played a strategic role after seeing visualizations of the hill's height and position on a digital map. Technology here functions as an "Educational Time Machine" reviving the past with present visual data. Furthermore, this immersive experience fosters historical empathy (*historical empathy*), where students can feel the heaviness of the Prophet's preaching struggle, so history is no longer an old fairy tale, but a real and inspiring struggle trace.

The third dimension is the revolution in the evaluation stage through gamification. Exams or daily tests are traditionally associated with anxiety (*anxiety*), pressure, and boredom. Teachers at MIN 5 Cilacap deconstruct this perception by implementing interactive quiz applications like Quizizz, Kahoot, or Wordwall. Psychological analysis shows that this strategy successfully creates a mental condition called by Mihaly Csikszentmihalyi (1990) as *Flow*. In a *flow* condition, students are fully immersed in learning activities with high focus and feelings of pleasure, so they forget they are being tested. Gamification features like leaderboards (*leaderboard*), energetic background music, and instant points provide strong positive reinforcement (*positive reinforcement*).

These three dimensions of technology implementation at MIN 5 Cilacap prove that madrasahs in peripheral areas are capable of practicing substantive modern education essence. Technology does not replace the teacher's role, but repositions the teacher from *sage on the stage* (the sole source of knowledge dominating the stage) to *guide on the side* (facilitator accompanying the discovery process). Teachers make technology a strategic partner to create meaningful learning (*meaningful learning*), where students do not just memorize dogma, but visualize truth, connect history, and celebrate knowledge with joy.

3. Dialectics of Supporting and Inhibiting Factors in the Madrasah Ecosystem

The success of digital transformation in Islamic Religious Education (PAI) learning at MIN 5 Cilacap is not a coincidence or the result of a single standalone factor. This phenomenon is the resultant of complex dialectical interaction between various forces pulling each other in the madrasah ecosystem. To dissect the anatomy of this success comprehensively, this analysis adopts Kurt Lewin's (1951) *Force Field Analysis* framework. Lewin postulated that change in an organization is the result of dynamic battle between driving forces (*driving forces*) wanting change and restraining forces (*restraining forces*) maintaining the status quo or hindering progress.

In-depth analysis identifies that the main driving force acting as the locomotive of change is transformational leadership commitment. The Head of MIN 5 Cilacap plays a central role not merely as an administrator, but as an *agent of change*. Research findings highlight the "lean bureaucracy" (*lean bureaucracy*) policy applied by the leadership, where teachers are given full autonomy to access and use school facilities without convoluted administrative procedures. Within Bernard Bass's (1985) leadership theory framework, this approach creates a *Psychological Safety* climate crucial for innovation. Teachers feel safe to experiment with new methods, take pedagogical risks, and even make technical mistakes without fear of sanctions or blame. This sense of safety triggers teachers'

courage to exit the comfort zone of conventional lecture methods. This management support becomes a solid moral foundation for educators to continue innovating.

The second driving factor, no less vital, originates from the bottom current, namely the characteristics of the students themselves. As *Digital Natives* (Prensky, 2001), MIN 5 Cilacap students possess natural enthusiasm for technology. Field findings show that positive student responses—such as sparkling eyes when watching videos or cheers during digital quizzes—function as motivational fuel for teachers. In educational psychology, this phenomenon creates a *Positive Feedback Loop*. When teachers see their hard efforts preparing digital material paid off with increased student understanding and happiness, it increases *Teacher Self-Efficacy*. Teachers become increasingly convinced they are capable of teaching with technology, which then encourages them to learn further.

The third driving force is the formation of a solid peer tutoring collaboration culture. At MIN 5 Cilacap, there is a generation gap between young *tech-savvy* teachers and senior *digital immigrant* teachers. However, instead of being a source of conflict, this diversity is managed into *Professional Capital* as theorized by Hargreaves and Fullan (2012). Mutualistic symbiosis occurs: young teachers help with operational technical aspects, while senior teachers share classroom management experience and material depth. The formation of this *Community of Practice* (Wenger, 1998) proves that social capital (*social capital*) in this madrasah is very strong, capable of covering financial capital shortages.

Additionally, budget limitations (BOS) create resource scarcity (*resource scarcity*). The non-ideal ratio of computer and projector devices forces the madrasah to apply strict laboratory usage scheduling, indirectly reducing teacher flexibility to teach spontaneously. Teachers must plan tool usage far in advance, which sometimes hinders pedagogical momentum (Anwar & Sulaeman, 2025). A significant internal restraining factor is the *Technostress* phenomenon among senior teachers. Adaptation to technology demands a large cognitive load. For teachers accustomed to analog methods, learning new applications, editing videos, and handling technical errors are real stress triggers. The double burden between routine administrative demands and digital innovation demands potentially causes work fatigue (*burnout*). Some teachers are even tempted to return to conventional methods ("turn back right") as a self-defense mechanism to conserve mental energy.

Although restraining forces are quite massive, the fact that technology-based learning continues to run and develop at MIN 5 Cilacap shows that this madrasah possesses a high level of *Organizational Resilience*. This resilience is not achieved by eliminating obstacles frontally—because moving geographical location or multiplying budget instantly is impossible—but by strengthening supporting factors to neutralize the impact of inhibiting factors (Anwar, 2024). The offline material download strategy is a smart adaptive response to signal (infrastructure) obstacles. Young-old teacher collaboration strategy is a solutive response to competency obstacles and technostress (HR). This analysis leads to a crucial conclusion: the key to technology implementation success in border madrasahs does not lie in hardware sophistication (*hardware*) or software modernity (*software*) alone. The main key lies in human resource quality (*humanware*)—namely leadership commitment, teacher spirit, and mutual cooperation culture—as well as social adaptation capabilities built on shared commitment to provide the best education for students. MIN 5 Cilacap

proves that physical facility limitations can be surpassed by the richness of social capital and the mental resilience of its educators.

Conclusion

This study concludes that the success of Islamic Religious Education (PAI) strategies at MIN 5 Cilacap in facing global challenges is not determined by facility luxury, but by organizational resilience and pedagogical adaptability. Planning strategies based on Managerial Realism and digital content curation (*gatekeeping*) prove effective in balancing budget limitations while fortifying student aqidah. Implementatively, technology successfully changes the learning paradigm from verbalism to concrete visualization and creates *joyful learning* through gamification. The key success factor is *humanware*, namely transformational leadership and peer tutoring collaboration capable of overcoming structural obstacles in border areas. This study has several limitations. First, the use of a single case study design limits statistical generalization, so findings are contextual. Second, research focus is exclusively limited to pedagogical strategies of the PAI subject cluster, without including analysis of general subjects. Third, the definition of global challenges is limited to the phenomenon of 4.0 Industrial Revolution technology disruption and *digital natives* student characteristics. Future research is suggested to expand scope through comparative studies or mixed methods to test strategy effectiveness more broadly.

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