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Digital Transformation Of Islamic Educational Leadership: Managerial Challenges In Managing Madrasah Artificial Intelligence (AI) Based In The Era Of Society 5.0

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Abstract

Digital transformation in the era of Society 5.0 present fundamental challenges for leadership Islamic education, in particular in context management of madrasas that are starting integrated with Intelligence Artificial. Problematics the main thing that comes to the fore is gap digital competence of madrasah principals, dilemma Islamic ethics in taking decision based algorithm, limitations infrastructure technology that creates digital divide, as well as resistance cultural-organizational from community Islamic education is worried will erosion values tradition and spirituality. Research This use method studies literature with analyze various literature scientific. Research results disclose that paradigm leadership Islamic education must shift from management administrative conventional going to leadership integrative that combines spiritual wisdom with digital skills, where the principal plays a role as a visionary digital- murabbi. Challenges digital competence and Islamic ethics become issue crucial that demands existence balance between AI utilization and principles Maqashid Syariah. Adaptive strategies are needed covers management infrastructure technology in a way contextual, ethical student data security, and development integrated AI curriculum with the values of monotheism. Meanwhile that, the gap implementation and resistance organizational need approach diplomatic and policy - based change culture. In conclusion that digital transformation of leadership Islamic education is an inevitability that must be responded to with strengthening digital literacy, compilation guide ethical the use of AI in madrasas, as well as development system management learning appropriate AI- based with context local and values Islam.

Keywords: Digital Transformation, Islamic Educational Leadership, Madrasah Management, Intelligence Artificial, Society 5.0

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INTRODUCTION

Wave digital transformation that is sweeping all over joints life man mature This has deliver global civilization is entering a new era known as as Society 5.0. A concept first proposed by the government. Japan This No just continue revolution Industry 4.0 which relies on automation and connectivity machine, but rather offer a greater vision humanist, namely A super smart society where space physical and spatial cyber integrate in a way smooth For finish various problematic social and economic well -being man That alone. In the landscape Society 5.0, Intelligence Artificial or Artificial Intelligence (AI) does not positioned as threats that will replace existence humans, but rather as partners strategic that expands capacity cognitive and operational man in processing big data, recognizing pattern complex, as well as produce more decisions precision and speed. For the world of education in a way In general, the presence of AI opens up unseen opportunities Once unimaginable previously, starting from personalization adaptive learning to need unique every participant educate, automation tasks administrative teachers, up to analysis predictive capable detect in a way early potential failure academic or problem behavior students. This fundamental transformation force all over stakeholders interest education For review repeat the old static and mechanistic paradigm, towards ecosystem more learning dynamic, collaborative, and data-driven (Holmes et al., 2022).

In the middle vortex global changes, institutions Islamic education, especially madrasas, is in a unique position at a time paradoxical. In one side, madrasah carries mission holy For transmit values divine, forming character morals noble, and guard orthodoxy tradition classical Islamic science that has take root during centuries. But on the other hand, madrasas do not can close eyes and isolate self from fact that the students and their students is resident native to the digital era (digital natives) who are deep daily life so intimate struggling with gadget smart, social media, and various application AI- based. Tension between must guard authenticity traditions and demands adapt with modernity technology This give birth to dilemma existential that is not easy solved. Many madrasas are still dwelling on the debate normative about halal-haram or whether or not it is permissible use modern technology in the learning process, while current change Keep going move heavy without compromise. In many case, madrasah management is still trapped in pattern Work conventional bureaucratic and reactive, where decision making decision more Lots based on personal intuition, past experience, or compliance to instruction technical administrative, rather than on objective and predictive data analysis. In fact, the demands of the Society 5.0 era want existence leap qualitative in governance institution education, from merely manual-based management towards intelligent-based management supported by AI systems (Sholikah & Samporno, 2024).

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Complexity problem the more increase if We observe in a way jelly reality empirical in the field. The Ministry of Religion of the Republic of Indonesia is actually has launch various initiative digitalization of madrasas, one of them is implementation of the Madrasah Digital Report (RDM) which aims For integrate system assessment and reporting results Study in a way electronics. The presence of this RDM mark step significant start in effort modernization administration Islamic education in Indonesia. However Thus, the implementation of the digitalization program the No necessarily walk smooth without obstacles. Various study show that level adoption and effectiveness utilization digital technology in madrasas is still very varied and tends to be unequal. Competence factor managerial the head of the madrasah was proven become variables a very decisive key success or failure digital transformation in the madrasa environment. The madrasa principal who has low digital literacy as well as No control skills managerial contemporary will become a bottleneck or obstacle main in the innovation process institutional. On the other hand, a visionary and adaptive madrasah principal to technology capable become catalyst driving change improvement teacher performance and quality learning in a way significant. Ironically, it still Lots the head of the madrasah who looked at digital technology merely as tool help administrative additional, not as ecosystem strategic that can transform all over aspect operational and pedagogical institution (Lisartika, 2025).

More continue, challenge managerial in managing AI -based madrasas in the Society 5.0 era No only dwelling on aspects technical and infrastructure only, but also touching distant realm more fundamental, namely reconstruction epistemological Islamic education itself. So far, Islamic education tends to separate diametrically between religious sciences and sciences general (modern sciences), a rooted dichotomy long in history post-classical Islamic civilization. As a result, modern technologies including AI are often viewed as entity neutral foreigners - even religiously tend secular, so that its integration to in Islamic curriculum and pedagogy experiences resistance culturally sufficient strong. In fact, if We browse return treasury golden era of Islamic science, classical Muslim scientists precisely show high technoscience spirit, where development science and technology viewed as an integral part of worship and glorification to Allah's verses are scattered in nature universe (kauniyah). Therefore that, the era of Society 5.0 in fact open opportunity gold for Islamic education for do reconciliation epistemological the through AI optimization. AI technology can utilized For develop system learning adaptive capable understand level understanding every students individually, providing virtual tutoring based on chatbot that can serve questions religious base during two tens four hours, up to do big data analysis for map trend understanding religious participant educate and detect potential deviation faith in a way early. However, all potential brilliant the only will become illusion mere

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if No supported by transformation paradigm leadership and management at the madrasah level (Fatmawati et al., 2025).

Reality on the ground show that problematic improvement quality management institution Islamic education in the era of Society 5.0 nature multidimensional and interconnected related One each other. In general, the problems the can classified to in a number of realm main. First realm is problematic infrastructure and digital divide, where thousands of madrasas in the region rural, mountainous and island Still struggling with limitations access stable electricity, adequate internet network, and availability device hardware supporting AI. This digital chasm No only create injustice access education quality, but also broaden gap quality graduate of between urban madrasas and suburban madrasas. The second domain is problematic source Power humans, which includes low level digital literacy among teachers and staff madrasah education, the lack of training applicable sustainability about utilization of AI in learning, as well as resistance psychological from part senior educators who feel threatened its existence by presence technology sophisticated. The third realm is problematic leadership and managerial, where many the head of the madrasah is still stuttering in formulate vision digital transformation, weak in manage change culture organization, as well as No own map clear roadmap in integrating AI into in madrasah governance. Without existence strong and visionary leadership, various initiative digitalization that is partial and sporadic only will leads to waste budget and fatigue organization without produce impact meaningful transformative (Sholikah & Samporno, 2024).

Temporary that, from perspective curriculum and pedagogy, integration of AI in Islamic education also faces challenge conceptual that is not light. Various study literature latest show that AI has huge potential For increase understanding student to material religious lessons that have been This considered abstract and difficult visualized. For example, generative AI can utilized For create simulation history Islamic civilization, visualizing architecture Grand Mosque from time to time, or even help students in analyze structure grammatical yellow book in a way more interactive. In addition, the AI system is also capable of facilitate more personalized learning, providing bait more back fast and accurate to results exercise questions, and assist teachers in identify need specific every student so that intervention learning can customized with ability and style Study individual. However Thus, the implementation all potential the requires existence development curriculum that is aware integrate AI literacy to in eye relevant lessons, as well adequate training for teachers so that they No only capable operate AI devices, but also have framework solid ethical and theological in take advantage of it. Without existence guide ethics harmonious use of AI with Islamic values, not No Possible presence technology This

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precisely will cause excess negative like plagiarism academic, dependency think instant, until erosion teacher authority as source knowledge and moral examples (Rahman & Putri, 2024).

Urgency digital transformation of leadership this Islamic education the more felt if We observe phenomena in other countries that are more formerly proceed in adopting AI for education. Study of experience AI - based user experience ChatGPT in learning Islamic religious education is carried out towards teachers in various countries shows encouraging results. Analysis results use scale User experience Questionnaire (UEQ) shows that educators feel significant benefits on dimensions Power attractiveness, efficiency, clarity (perspicuity), and reliability (dependability) in utilizing AI as assistant learning. Findings This confirm that AI integration in Islamic education is not merely a technological utopia, but rather A reality that has been proven give mark plus in a way practical. However, the same study also underlines that success AI implementation relies heavily on guidance and supervision from competent and experienced educators. AI remains A tools and their effectiveness fully determined by capacity humans who use it. In context here it is role leadership the head of the madrasah becomes very central, because they are the ones who hold control in create conducive ecosystem, providing source the power required, as well as direct utilization of AI to remain in line with vision and mission authentic Islamic education (Nisa & Sulaiman, 2025).

Responding complexity challenges and opportunities that have described said, then research that is specific and in-depth study digital transformation of leadership Islamic education, particularly that which focuses on challenges managerial in managing a madrasah based on Intelligence Artificial in the era of Society 5.0, becomes A inevitability very urgent academic issues. So far, the discourse about AI in education tend dominated by perspective technological and pedagogical common that often ignore uniqueness context socio-cultural and spiritual values inherent in the institution Islamic education. Existing studies more Lots discuss aspect technical AI implementation in schools general, while analysis deep about How paradigm Islamic leadership must transform, how dilemma Islamic ethics in taking decision based algorithm must addressed, as well as how contextual adaptive strategies with the reality of madrasas in Indonesia must be formulated, is still very limited and scattered. There are kind of gap worrying literature gap between progress rapidly AI technology in one side, with stagnation study critical-transformational in field management Islamic education on the other hand. Research This present For fill in gap the with offer A analysis comprehensive based studies libraries that are not only map problematic, but also formulate paradigm new, identify challenge ethical, as well as propose adaptive strategies that can become foothold conceptual for the heads of madrasas in navigate ark the institution in the middle ocean disruption technology

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Society 5.0 (Qomariyah et al., 2025).

With Thus, the study about digital transformation of leadership Islamic education in context AI - based madrasa management No only own significance theoretical in enrich treasury science management contemporary Islamic education, but also contains urgency high practicality for taker policies within the Ministry of Religion, madrasa heads throughout Indonesia, and all over observers and activists Islamic education. Findings from study This expected can give contribution constructive thinking in effort together advance quality Islamic education to be able to give birth to generation of Muslims who do not only superior spiritually and morally, but also adaptive, innovative, and competitive in chess increasingly global civilization driven by intelligence artificial. In the middle current big frequent changes confusing and worrying, madrasas are challenged For still firm anchored revelation, while with brave spread out screen innovation use catch fresh wind of progress technology. Dynamic balance between al- muhafazhah 'ala al- qadim al- shalih (maintaining good old tradition) and al- akhdzu bi al- jadid al- ashlah (taking matter newer good) this is the essence of digital transformation of leadership Islamic education in the era of Society 5.0 (Qomariyah et al., 2025).

METHOD

Study This is type study literature or which is methodological known with term library research. Research literature is something series activity research conducted with method collect, read, record, and analyze sourced data from ingredients library, good in the form of book references, articles journal scientific, report results research, documents policies, as well as sources written authoritative other relevant with topic study without must do study field or empirical data collection in a way directly. In the context studies this, approach library research chosen Because characteristic problems studied nature conceptual-theoretical and requires deepening as well as deep synthesis from various source literature that stretches in range multidisciplinary, starting from study management Islamic education, digital leadership, ethics Intelligence Artificial, until studies about transformation social in the era of Society 5.0. (Karsadi, 2022).

Data sources used in study This outline can classified to in two category main, namely primary data sources and secondary data sources. Primary data sources in study literature referring to the literature the main thing that becomes object study direct and analyzed in a way deep For answer formulation problem research. In the study In this case, the primary data sources consist of from books text scientifically which specific discuss topics like leadership Contemporary Islamic education, madrasa management in the digital era, concepts and

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implementation Intelligence Artificial in the world of education, as well runway philosophical and sociological from the Society 5.0 era. In addition to books, articles published in journal scientific reputable, good nationally accredited by the Ministry of Education, Culture, Research, and Technology and indexed international in reputable database such as Scopus and Web of Science, become a very vital primary source. Meanwhile that, secondary data sources is literature supporters who do not in a way direct become focus analysis main, but give information complement, explanation contextual, or strengthen arguments that are built. Source secondary This covering dictionary scientific, encyclopedia, books methodology research, as well as publications supporters others that can help researchers in understand terms technical or framework theoretical certain with more accurate. Determination data sources are carried out in a way purposive with criteria main relevance substance with topic research, updates publications, and credibility author and publisher (Connaway & Radford, 2021).

Data collection techniques in study literature This taken through a series systematic and planned procedures use ensure that the data obtained truly comprehensive and has level high accuracy For answer problem research. The first step taken is do search literature in a way extensive through various online academic databases such as Google Scholar, Garuda (Digital Reference Library), DOAJ (Directory of Open Access Journals), Scopus, and catalogs leading university digital libraries. Search process This done with use existing keywords determined previously and combined in a way varied For expand coverage results search, including " Digital Transformation of Islamic Educational Leadership ", " Madrasah Society 5.0 Management ", " Intelligence Artificial in Islamic Education", "AI Ethics from an Islamic Perspective ", " Digital Divide in Madrasas", and terms equivalent in English. The second step is do identification and verification beginning to successful literature found. At this stage this, researcher read in a way fast part abstract, foreword, and table of contents from every document For evaluate level suitability and relevance with topic research. Documents assessed No relevant or originate from sources that are not credible will removed, while documents that passed verification beginning will downloaded or photocopied For Then saved in personal database researcher. The third step is reading in a way in-depth and repeated (close reading) of literature that has been selected. Reading This No done in a way passive, but rather in a way active and critical with give sign, make notes margins (marginalia), as well as write bullet points important, quotes keys, and comments reflective in sheet notes special. Fourth step is do recording and organizing data systematic (Pettalongi et al., 2025).

After all required data collected, steps the next one is very crucial in study This is do data analysis. Data analysis techniques used in study literature This is technique analysis content

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qualitative (qualitative content analysis) which is descriptive-analytical-critical. Content analysis qualitative No just count frequency the appearance of words or theme certain as in analysis content quantitative, but rather focus on efforts interpret the meaning contained within text in a way in-depth, identifying patterns thematic, as well as reveal relationships logical existing inter -concepts in various source literature. The data analysis process in study This implemented through a number of mutually exclusive stages related in a way cyclical, not linear. Stages First is data reduction, namely the process of selecting, simplifying, abstracting and transforming raw data that has been collected become units more information focused and meaningful. At stage this, researcher read return all over notes and quotes that have been made, then sort it out based on categories appropriate thematic with sub- topics in framework research, such as category " paradigm" digital leadership ", " challenges Islamic ethics in AI", " adaptive strategies infrastructure ", and " resistance organizational ". Data that is not relevant or nature repetition will set aside. Stages second is data presentation (data display), namely the process of compiling and organizing a group information that has been reduced to in something form narrative Coherent and systematic descriptive - analytical stages third is withdrawal conclusion drawing and verification, namely the process of formulating findings substantive from overall analysis that has been done as well as do checking repeat in a way continously to validity conclusion the with method browse return raw data and literature supporters (Rusilowati et al., 2025).

For ensure quality and integrity scientific from results study this, then done a series technique testing common data validity (trustworthiness) used in tradition study qualitative, including study bibliography. The validity of the data in study This No measured based on internal validity and reliability parameters as in study quantitative-experimental, but rather tested through four criteria The main points proposed by Lincoln and Guba are: degrees credibility, transferability, dependability, and confirmability. fulfil criteria credibility, which is basically is effort For convincing reader that findings study This truly represent authentic meaning from the analyzed data, researchers apply several strategies. The first strategy is do triangulation data sources, namely with method compare and confirm information obtained from One source literature with source literature others who have perspective different or even contradictory. Through the process of triangulation this, researcher can identify consensus among experts at a time map dot, dot, dot the debate is there, so the resulting interpretation become richer and more balanced. The second strategy is do discussion peer debriefing with method discuss draft beginning results analysis with colleagues academics or a mentor who has expertise in the field management Islamic education and studies technology. Input, criticism, and questions critical issues that arise from session discussion this is very valuable For hone sharpness analysis and

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identification weaknesses logical in arguments that are built. While that, criteria transferability is met with method serve a very rich and in-depth description (thick description) about context research, data sources used, and steps methodology adopted. Detailed description This allows reader For evaluate Alone to what extent the findings and concepts produced in study This can applied or transferred to in context or other situations that have similarity characteristics. Furthermore, the criteria dependability and confirmability are guaranteed with method conduct an audit trail, namely storing and documenting in a way neat and systematic all over traces of the research process, starting from notes search literature, results verification documents, sheets notes analysis, written drafts that have been revised, until decisions methodology taken during study ongoing (Connaway & Radford, 2021).

RESULTS AND DISCUSSION

A. Paradigm New Islamic Educational Leadership in the Era of Society 5.0 : From Management Conventional Towards Intelligence Integration Artificial Intelligence (AI)

The existence of madrasas as institution the oldest Islamic education in the archipelago today at a crossroads a very decisive historical event. The Era of Society 5.0 No just offer progress all -round technology automatically, but rather present A leap civilization where space physical space and cyberspace meet in One ecosystem called Cyber-Physical System. In the context of this, paradigm leadership Islamic education does not Again adequate If only based on expertise managerial Industry 4.0 administrative leadership. Leadership in this era demand A leap epistemological, namely fundamental shift from pattern think management conventional control - centered documents and sources Power man in a way mechanistic, towards A synthesis organic between Islamic spiritual wisdom and sophistication computing Intelligence Artificial. Today 's madrasa head called No only be an obedient administrator procedures, but rather become digital- murabbi, a person a capable visionary leader read signs of the times through lens revelation at a time algorithm. Changes This is not just adoption device soft or installation digital infrastructure, but rather A transformation culture organization that changes method view madrasa residents in interpreting the processes of ta'lim, tarbiyah, and ta'dib. The presence of AI has forcing stakeholders policy Islamic education for review repeat definition authority and wisdom. If during This decision strategic fully based on intuition, spiritual experience, and deliberation limited, now variables the must dialectic with the power of big data analytics and machine learning projecting trend quality education until a number of year to front.

Improvement quality education done with method depend on that internal potential itself. This process use various available techniques and data For empowering component in effort

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continously increase his ability, so that he can fulfil expectations of students and society (Azmi & Ridha, 2019). Therefore that, paradigm new leadership This necessitate existence balance new between qalb (heart) conscience) and aql (digital rationality), where AI does not placed as god technology that replaces role humans, but rather as tool or extension hand from function istikhlaf (caliphate) of humans in advance earth For realize ecosystem more education precision, personal, and benefit (Akmal Mundiri, 2026).

More far, AI integration in leadership Islamic education gives rise to A redefinition about the meaning of " presence " of a person leader. In management conventional, presence physique head of madrasah in the room meeting or on the page school become symbol main supervision and role model. However, in the era of intelligent systems, the presence of the transform to be " presence" systemic ". A transformative madrasah principal is those who are able build system smart that remains Work although He currently No be on site. For example, the system Early Warning System AI- based capable detect in a way early potential decline morals participant educate based on attendance data analysis, history violations, up to sentiment their digital communication. This is where location a fundamental shift from management by presence to management by data-driven wisdom. Madrasah principals must data literate, capable understand the executive dashboard that presents indicator performance key (IKK) in real-time, starting from level parental satisfaction, effectiveness method teacher learning, up to prediction need development competence power educators. This is need change orientation leadership from the beginning nature reactive-traditional (complete problem after happened) to be proactive-predictive (preventive) problem before happen based on AI projection). However Thus, this digital transformation No may making madrasas lose his spirit. In the middle onslaught automation, values like uswah hasanah (good example), closeness emotional between teachers and students, and touch spiritual in the coaching process character must still become breath main. AI must positioned as a decision support system that strengthens, not weaken, authority divine and human in the educational process. Success transformation it really depends on the capacity leader in communicate vision new This to all stakeholders, to reduce anxiety that machine will replace the role of teachers, as well as confirm that objective end from all over automation This is For humanize man whole (human) Kamil) in the middle current disruption increasingly advanced technology heavy (Darimus & Jisman, 2026).

B. Challenge Digital Competence and Islamic Ethics in Managerial Decision Making AI- Based in Madrasah

Implementation Intelligence Artificial in madrasah governance is not similar with buy A device electronics ready use it. He present together a series challenge multidimensional testing

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competence technical at a time moral integrity of leaders Islamic education. Challenges The first and most fundamental is gap digital competence among head of madrasah and staff management. So far, the curriculum training more Islamic leadership Lots dominated by studies normative-theological and managerial administrative basis. As a result, many the head of the madrasa who has capacity competent in read the yellow book and understand psychology development students, however stuttering when face to face with logic algorithms and data interpretation. The absence adequate digital literacy This potential give birth to two poles equally extreme dangerous. In one side, appears attitude apathy and total rejection of technology Because considered as secular and threatening Western products originality Islamic education. On the other hand, a techno-utopian attitude has also emerged, namely reception blindly blind to every AI recommendations without through the verification process critical and considerate sharia. Second attitude This clear contradictory with principle wasathiyah (moderation) which is character main Muslims. A Madrasa leaders in the AI era must own competence double, namely technological literacy and spiritual literacy. He must capable understand basics method Work system AI recommendations not to easy fooled by algorithmic bias or data manipulation. Without competence this, decision managerial decisions taken No Again reflection from vision big Islamic education, but rather reflection from the machine output that can So wrong or No in accordance with context socio-cultural unique Islamic boarding schools and madrasas (Husni & Hasan, 2025).

Challenge next shift to more realm complicated and sensitive, namely Islamic ethics in taking decision AI- based. When a AI system recommends rejection to candidate students based on analysis predictive that child said " has the potential low in a way academic " or " risky do violation heavy ", can you the head of the madrasah refused recommendation machine That on base love love (rahmah) and faith that guidance and change behavior is right God's prerogative alone ? This is where location dilemma acute ethical principles base in Islamic ethics emphasizes that every individual own good natural potential, and duties educator is develop potential said, not judge his future based on calculation of past data. The concept of AI based on historical data and pattern recognition is contradictory. diametrically opposed to Spirit tajdid (renewal) and repentance in Islam which opens door change for anyone. The principal of the madrasah is faced with a test heavy For No necessarily delegate authority taking decision ethical to system automatic. The use of AI in evaluate teacher performance or determine graduation students must framed in framework maqashid syariah (objectives) sharia), namely safeguarding religion (hifzh al-din), soul (hifzh al- nafs), intellect (hifzh al-' aql), descendants (hifzh al- nasl), and wealth (hifzh al-mal). AI's decision is only efficiency - oriented budget or improvement ranking

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academic, but sacrifice teacher mental health or ignore coaching morals " problematic " students are decisions that are substantive No Islamic although in a way procedural based technology sophisticated. Transparency algorithm become demands unethical Can offered. The head of the madrasah is obliged ensure that the AI system used free from gharar (uncertainty) and dharar (danger) which can oppress rights individual in community study. Without existence framework solid Islamic ethics, AI is not tool empowerment, but rather instrument gnawing dehumanization values sublime Islamic education from in (Rahman & Syahputra, 2024).

C. Adaptive Strategy Head of Madrasah in Manage Infrastructure Technology, Student Data, and Curriculum AI -based

Face wave disruption Intelligence Increasingly artificial not unstoppable, the head of the madrasah does not Can only stand as viewer or victims of change. Required a series of planned, systematic, and contextual adaptive strategies with characteristics institution Islamic education. The first strategy that must be executed is management infrastructure technology in a way smart and sustainable. Different with school common that often own access funding more loose, madrasas, especially those with status private and located in the area outskirts, must move with appropriate technology logic. Adaptive strategy here means ability head of madrasah for No stuck on the narrative of "AI has to be super sophisticated and expensive." Instead, it must capable identify low-hanging fruits, namely simple AI solutions that have an impact big However affordable. For example, integrating generative AI like ChatGPT or Gemini for assist teachers in compile Plan Implementation Differentiated learning (RPP), or utilise chatbot automatic For respond question parent administration students for 24 hours. Adaptive strategy this also includes diplomacy budget and partnership strategic. A visionary madrasah principal will active build collaboration with college Islamic high school, Muslim developer community, or Zakat Collection Institution for get support technical and financial in build infrastructure the basis of AI. They realize that investing in secure cloud computing or stable internet network now The same importance with development building class new. Without adequate infrastructure, everything discourse about digital transformation is just a deceptive utopia (Aziz & Hidayat, 2025).

along with development infrastructure physical and network, crucial and very specific adaptive strategies for Islamic institutions are ethical and secure management of student data. In the AI era, data is asset at a time a very vulnerable trust. Madrasas store very personal and sensitive data, starting from from history mental health of students, background behind possible family problematic, until notes development of worship and memorization of the Qur'an. Adaptive strategies the head of the madrasa must ensure that digitalization of this data No open

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door leakage privacy or abuse Information. Implementation of an isolated Local Area Network (LAN) for internal data, use encryption on the student database, as well as regulations strict about who may accessing AI analytics data is minimum steps are not Can compromised. More from just security cyber, the head of the madrasah must also direct utilization of this data For greater purpose noble, namely personalization learning. AI is capable map uniqueness every santri : type learning (visual, auditory, kinesthetic), speed understand material, up to potential non- academic talents. With the right strategy, AI- processed data will not only used For make ranking discriminatory class, but rather For give intervention appropriate education with individual needs. This is essence from humanizing education in the digital era, where technology precisely allows teachers to give more personal attention because tasks repetitive administrative has taken transferred by machines (Nurhayati & Kurniawan, 2026).

Next, on the aspect curriculum, adaptive strategies the head of the madrasa must leading to integration material AI prowess without lost identity Islam. This is work House the biggest at a time opportunity gold. Wrong strategy will make madrasahs merely photocopy from secular STEM (Science, Technology, Engineering, Math) schools that teach coding and data science without spirit. The right adaptive strategy is develop AI Curriculum Based on Islamic Values. In terms of this, the head of the madrasah needs to push team developer curriculum For No only teach How method neural network or natural language processing work, but more important Again teach why and for What technology This created in monotheistic perspective. Subject Jurisprudence must start touch chapters new about deepfake law, ethics use of robots in worship, or ownership status content generated by generative AI. Subjects Creed Morals must strengthen moral fortress for students No easy provoked by biased information spread by social media algorithms. This is adaptive strategy form progressive -regressive curriculum : advanced to front adopt modern science, however step back to behind dig root Islamic epistemology about science and technology. The head of the madrasah must become capable conductor align between orchestration modern technology with rhythm predecessors pious. Failure in formulating an integrative curriculum strategy This will give birth to sophisticated Muslim generation in a way technical However porous spiritually, or on the contrary, a pious generation ritually but stuttering and oppressed by civilization his time (Fauzi & Maulana, 2025).

D. The gap Implementation (Digital divide) and Resistance Organizational to AI Transformation in Islamic Educational Institutions

Behind narrative big about potential brilliant AI in revolutionize Islamic education, there is reality bitter must recognized and managed with head cold, namely gap implementation or digital divide. The gap This is not issue side, but rather challenge structural threats justice access

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education quality among Muslims themselves. Digital divide in madrasah context operates in three interlocking layers intertwined. Layers First is gap access physical. Like heaven and earth, madrasah in urban areas big one that has laboratory computer complete and fiber internet connection optics speed tall will with easy jump into the AI era. Meanwhile that, thousands of private madrasas and Islamic boarding schools Salaf in remote areas villages, mountains, or island outermost Still must wrestling with power outage rotating and signaling lost cell phone arise. For them, even accessing a simple online learning platform is already is achievements, especially dream implement system management learning AI- based applications that require large bandwidth. Layer second is gap capacity source Power human. Although in a way physique a madrasah in the area has accept help device computer from government, often No There is any teacher or power education that has ability For operate, maintain, moreover develop AI systems. Training provided by the ministry often nature ceremonial, duration short, and not sustainable. As a result, aid technology advanced only become display dusty in the room head school or more ironic again, only used For needs administrative simple like type letter. Layer the third most subtle is gap linguistics and content. Most of literature, training, and tools quality AI software tall Still using English. While that, the contents appropriate AI learning with context Islam and Indonesian language are still very minimal. The gap these three layers create deep abyss between elite madrasas and marginal madrasas, a irony in the middle the spirit of Islam which is highly respected tall justice (Rahmawati & Setiawan, 2026).

Layer challenge the next one that doesn't lost complicated is resistance organizational origin from in body institution Islamic education alone. Resistance This often No expressed vulgarly as rejection to technology, but rather hiding behind arguments normative and cultural that is visible noble. Form the most common resistance is romanticism tradition, namely deep - rooted beliefs strong that method classical Islamic education that has succeed gave birth to great scholars in the past is the only one the right and wrong way may be " polluted " by intervention machine. There are concerns existential that the presence of AI will erode authority religious teacher or ustaz, reducing connection mystical between teacher and student (suhbah), as well as replace blessings knowledge with just a dry and mechanical data transfer. Resistance This reinforced by structure madrasah and Islamic boarding school organizations that tend to hierarchical and paternalistic, where decisions absolute in hand senior figures who have not Of course familiar with digital technology. Ideas AI transformation brought by young madrasah principal or deputy head field curriculum often stranded Because No get blessing from the board of trustees or conservative foundation. Form resistance other is culture Work slow and procedural bureaucracy. AI implementation demands agility, experimentation fast, and

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tolerance to failure as part from the learning process. Meanwhile that, culture work in many madrasas still dwelling on the logic of " origin" in accordance technical instructions " (instructions) technical) and " no violate "rules ". Innovation often dead before develop Because hit wall rigid bureaucracy and fear will be an administrative audit. Facing resistance cultural and structural this, approach rigid technocratic only will make things worse atmosphere. The head of the madrasah needs to play role as agent patient and diplomatic change, using Language culture and religion to bridge gap understanding between stronghold transformative and stronghold conservative (Mustafa & Anwar, 2025).

CONCLUSION

Based on results study studies library this, can concluded that digital transformation of leadership Islamic education in the era of Society 5.0 demand shift the fundamental paradigm of management administrative conventional going to leadership integrative that combines Islamic spiritual wisdom with sophistication Intelligence Artificial, where the head of the madrasah does not Again just act as an administrator but as a visionary and grounded digital-murabbi values maqashid sharia. Challenges mainly lies in the gap digital competence among madrasa leaders and dilemma ethical in taking decision based algorithm that must be subject to the principles Islamic ethics so as not to trapped in dehumanization. Adaptive strategies are needed covers management infrastructure technology in a way smart and contextual, student data security in a way ethical, as well as development integrated AI curriculum with the values of monotheism. Meanwhile that, reality digital divide and resistance cultural-organizational become inhibitor structural that requires approach change in a way diplomatic and based culture. Implementation from results study This necessitate existence action real in the form of strengthening digital literacy and AI ethics for the head of the madrasah through training integrated sustainability with Islamic values, development system management learning simple, affordable AI - based in accordance context local, as well as compilation guide policy ethical the use of AI in the madrasa environment involving all over stakeholders interest use bridge gap technology and dampening resistance in a way participatory.

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