



Digital Leadership for Enhancing Competitive Advantage in Islamic Educational Institutions: A Multisite Study at MTsN 1 Pacitan and MTs Pembangunan Pacitan

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Abstract: Digital leadership has become an essential capability for educational institutions seeking to strengthen organizational quality and sustain competitive advantage in the era of digital transformation. Existing studies have largely examined digital leadership and competitive advantage as separate constructs, while empirical evidence from Islamic educational institutions remains limited. This study aimed to analyze how digital leadership implemented by madrasah principals contributes to competitive advantage through digital vision, digital transformation, leadership characteristics, and value-based organizational development. A qualitative multisite case study was conducted at MTsN 1 Pacitan and MTs Pembangunan Pacitan, East Java, Indonesia. Data were collected through semi-structured interviews, participant observation, and document analysis involving principals, teachers, administrative staff, information technology coordinators, students, and institutional stakeholders. Data were analyzed using the Miles and Huberman interactive model through within-site and cross-site analyses, while trustworthiness was established through triangulation, member checking, prolonged engagement, and audit trails. The findings indicate that competitive advantage is generated through the integration of digital vision, digital transformation, visionary, innovative, collaborative, and adaptive leadership, all embedded within Islamic educational values. Cross-case analysis also produced the Value-Based Digital Leadership Spectrum Model, consisting of Digital Adoption, Digital Integration, Digital Systemization, Digital Transformation, and Value-Based Digital Ecosystem. This model explains that digital maturity develops progressively according to leadership vision, organizational readiness, human resource capacity, and pesantren culture. The study contributes a contextual theoretical framework that enriches digital leadership literature by positioning Islamic values as strategic resources for sustainable digital transformation and long-term competitive advantage.

Keywords: Digital Leadership, Competitive Advantage, Islamic Education, Digital Transformation, Value-Based Leadership.

INTRODUCTION

The rapid advancement of digital technology has fundamentally transformed organizational management across various sectors, including education. Digital transformation has shifted educational institutions from conventional administrative practices toward technology-driven governance that emphasizes innovation, efficiency, and organizational sustainability. In this context, school and madrasah leaders are required not only to possess managerial competence but also to demonstrate digital leadership capable of integrating information and communication technologies into strategic decision-making, educational management, and institutional



development (Wujarso et al., 2023; Rudito & Sinaga, 2017). Consequently, digital leadership has emerged as a strategic capability for educational organizations seeking to improve institutional quality and maintain competitiveness in the era of digital disruption.

Digital leadership extends beyond the technical ability to utilize digital technologies. It encompasses the capacity to formulate a digital vision, facilitate organizational transformation, promote innovation, and cultivate a collaborative culture that enables educational institutions to respond effectively to dynamic environmental changes (Farunik, 2019; Paramarta et al., 2022; Ruslin, 2025). This perspective is consistent with the Upper Echelons Theory, which argues that organizational outcomes largely reflect the values, experiences, and strategic decisions of top leaders (Hambrick & Mason, 1984). Therefore, the success of digital transformation within educational institutions depends substantially on the digital competencies and strategic orientation of school principals or madrasah leaders.

Within Islamic educational institutions, leadership plays an essential role in determining institutional quality and long-term sustainability. Islamic education is expected not only to preserve religious values but also to respond adaptively to contemporary societal and technological developments. Qomar (2013) argues that educational strategies in Islamic institutions must continuously evolve to remain relevant to changing social demands. Likewise, Muhaimin (2012) emphasizes that institutional excellence is reflected through the quality of educational inputs, learning processes, and graduate outcomes. Furthermore, Mutohar (2013) asserts that educational quality should be evaluated comprehensively by considering inputs, processes, outputs, and institutional outcomes that generate public trust and stakeholder satisfaction.

Alongside educational quality, competitive advantage has become an increasingly important objective for educational institutions. According to Dash (2017), competitive advantage is achieved when an organization's services are perceived as superior to those of competing institutions. In educational settings, this superiority is developed through innovation, high-quality educational services, effective organizational management, and distinctive institutional characteristics. Kartajaya (2007) further explains that differentiation constitutes a strategic approach to creating uniqueness through educational content, service delivery, and organizational infrastructure. Consequently, digital leadership becomes a critical mechanism for enabling



educational institutions to develop innovative flagship programs that strengthen institutional competitiveness.

This phenomenon is evident in Islamic secondary schools that have increasingly integrated digital technology into institutional governance and educational innovation. MTsN 1 Pacitan has developed several flagship programs, including Qur'anic memorization (*Tahfidz*), digital classrooms, research-based learning, language development, and an accelerated learning program through the Semester Credit System (*Layanan Belajar Cerdas Istimewa*). Similarly, MTs Pembangunan Pacitan has established flagship programs consisting of Tahfidz classes, language immersion, information technology classes, digital literacy and cinematography programs, and technology-based student admission services. These initiatives illustrate how digital transformation has been utilized not merely for administrative efficiency but also as a strategic instrument to improve educational quality and institutional competitiveness (Madrasah Profile Archives of MTsN 1 Pacitan; MTs Pembangunan Pacitan Profile; Documentation and Observation of MTsN 1 Pacitan).

Previous studies have confirmed the growing importance of digital leadership within educational organizations. Utami (2024) found that digital leadership characteristics among senior high school principals vary across different levels of digital maturity, indicating that digital ecosystems significantly influence leadership practices. Meanwhile, Zhu et al. (2025), through a systematic review, concluded that digital leadership in education remains conceptually fragmented and lacks a universally accepted definition. Their review also highlights the limited number of empirical studies examining contextual practices of digital leadership, particularly regarding digital security, organizational adaptation, and lifelong learning. In another study, Qory'ah et al. (2024) demonstrated that the success of flagship educational programs largely depends on systematic leadership strategies involving collaborative planning, implementation, and continuous evaluation.

Despite these valuable contributions, previous studies reveal several important research gaps. First, most studies investigate digital leadership independently from competitive advantage. Second, existing research predominantly focuses on schools rather than Islamic educational institutions. Third, empirical investigations that simultaneously examine digital vision, digital



transformation, leadership characteristics, and competitive advantage within a multisite madrasah context remain limited. Consequently, a comprehensive understanding of how digital leadership contributes to developing sustainable competitive advantage in Islamic educational institutions has yet to be fully established.

Preliminary observations indicate that MTsN 1 Pacitan and MTs Pembangunan Pacitan provide an appropriate context for addressing this gap. Although the two madrasahs operate in different geographical settings—urban and rural—they have both successfully implemented digital-based institutional management supported by adequate technological infrastructure, including computer laboratories, network systems, digital administrative services, and technology-enhanced learning environments. More importantly, both institutions have integrated Islamic values with digital innovation through flagship programs combining Qur'anic memorization, digital literacy, language development, and information technology. These institutional characteristics demonstrate that digital leadership extends beyond technology adoption and functions as a strategic capability for building organizational competitiveness.

The novelty of this study lies in its integration of three essential dimensions of digital leadership—digital vision, digital transformation, and digital leadership characteristics—to explain how they collectively contribute to strengthening competitive advantage in Islamic educational institutions. Unlike previous studies that examine these dimensions separately, this research employs a multisite approach involving MTsN 1 Pacitan and MTs Pembangunan Pacitan to develop a more comprehensive understanding of digital leadership practices in madrasahs. Accordingly, this study aims to analyze how digital leadership is implemented by madrasah principals to enhance competitive advantage, thereby contributing both to the theoretical development of digital leadership literature and to practical strategies for managing Islamic educational institutions in the digital era.

METHODS

Research Design

This study employed a qualitative approach using a multisite case study design to investigate the implementation of digital leadership in strengthening the competitive advantage of Islamic



educational institutions. A qualitative approach was selected because it enables researchers to explore and understand the meanings individuals and groups assign to social and organizational phenomena within their natural settings through inductive inquiry (Creswell, 2013; Moleong, 2014). Rather than emphasizing statistical measurement, qualitative research seeks to interpret experiences, behaviors, and institutional practices based on participants' perspectives.

A multisite case study was adopted because the research involved two Islamic junior secondary schools with comparable organizational characteristics but different institutional contexts. This design facilitates both within-site and cross-site comparisons, enabling the identification of similarities and differences in digital leadership practices implemented by school principals. According to Yin (1987), multisite case studies provide richer analytical evidence and improve the transferability of research findings by comparing multiple cases representing similar phenomena.

Research Setting and Participants

The research was conducted at MTsN 1 Pacitan and MTs Pembangunan Pacitan, East Java, Indonesia. These institutions were purposively selected because both have implemented digital transformation in educational management while maintaining strong Islamic educational values and flagship programs. The two schools also share several characteristics, including the integration of information technology into learning, Qur'anic memorization (*Tahfidz*) programs, digital administrative services, and continuous efforts to improve institutional competitiveness.

Participants were selected using purposive sampling, followed by snowball sampling to identify additional informants possessing substantial knowledge regarding digital leadership implementation. The participants consisted of school principals, vice principals, teachers responsible for flagship programs, information technology coordinators, administrative staff, students, and other stakeholders directly involved in educational management. Purposive sampling enabled the researchers to obtain information-rich participants, whereas snowball sampling expanded the participant network based on recommendations from initial informants (Sugiyono, 2016; Moleong, 2006).



Data Collection

Data were collected through semi-structured interviews, participant observation, and document analysis. Semi-structured interviews were conducted with key informants to explore their experiences regarding digital vision, digital transformation, leadership practices, and institutional competitiveness. Open-ended questions allowed participants to explain their experiences comprehensively while providing flexibility for the researcher to probe emerging issues during the interview process (Creswell, 2013).

Participant observation was undertaken to understand naturally occurring leadership practices, digital learning implementation, organizational interactions, and school culture. During the observations, field notes and visual documentation were systematically recorded to capture significant events related to digital leadership implementation (Arikunto, 2010).

Document analysis complemented the interview and observational data by examining strategic planning documents, organizational structures, digital policy documents, flagship program reports, meeting minutes, institutional archives, school websites, and social media publications. The triangulation of interviews, observations, and documentary evidence strengthened the completeness and credibility of the research findings (Sugiyono, 2013).

Data Analysis

Data analysis followed the interactive model developed by Miles and Huberman (1992), consisting of data condensation, data display, and conclusion drawing and verification. Data analysis was conducted concurrently with data collection through continuous comparison between interview transcripts, observation notes, and documentary evidence.

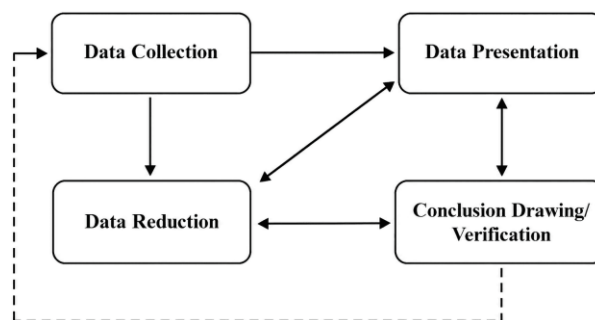


Figure 1. Analysis Data

Because this research adopted a multisite design, data analysis was carried out in two sequential stages. The first stage involved within-site analysis, where data from MTsN 1 Pacitan



and MTs Pembangunan Pacitan were analyzed independently to identify the characteristics of digital leadership implementation within each institution. The second stage consisted of cross-site analysis, in which findings from both institutions were compared to identify common themes, contextual differences, and conceptual patterns concerning digital leadership and competitive advantage. The comparative analysis enabled the researchers to formulate broader theoretical propositions beyond the findings of individual cases (Miles & Huberman, 1992; Yin, 1987).

Trustworthiness

The trustworthiness of the findings was established using the criteria proposed by Lincoln and Guba (1985), including credibility, transferability, dependability, and confirmability.

- Credibility was ensured through prolonged engagement in the research sites, persistent observation, triangulation of data sources and data collection techniques, member checking, and peer debriefing. Triangulation involved comparing information obtained from principals, teachers, administrative staff, students, observations, and institutional documents to verify data consistency.
- Transferability was enhanced through detailed descriptions of the institutional contexts, participant characteristics, and research procedures, allowing readers to determine the applicability of the findings in similar educational settings.
- Dependability was maintained by documenting every stage of the research process, including research planning, data collection, coding procedures, data analysis, and interpretation, thereby creating an audit trail that ensured methodological consistency.
- Confirmability was established by continuously comparing empirical evidence derived from interviews, observations, and documentary analysis while maintaining researcher reflexivity throughout the study. This procedure minimized researcher bias and ensured that the findings accurately reflected participants' perspectives rather than personal assumptions (Lincoln & Guba, 1985; Patton, 2006).



RESULT AND DISCUSSION

Digital Vision of Madrasah Principals in Enhancing Competitive Advantage

The findings reveal that the principals of MTsN 1 Pacitan and MTs Pembangunan Pacitan have developed a clear digital vision that positions technology as a strategic instrument for improving educational quality and strengthening institutional competitive advantage. Although both institutions embrace digital transformation, they demonstrate different strategic orientations. MTsN 1 Pacitan adopts a system enhancement approach by integrating digital technologies into curriculum implementation, instructional practices, and academic supervision while maintaining the existing organizational structure. In contrast, MTs Pembangunan Pacitan applies a system transformation approach in which digitalization becomes the foundation for redesigning the educational system through specialized learning tracks (Tahfidz, Informatics, Languages, and Sports), digital learning ecosystems, and competency-based student development rooted in Islamic boarding school (pesantren) values. These contrasting approaches indicate that digital transformation in Islamic educational institutions is context-dependent and shaped by organizational culture, institutional readiness, and leadership orientation.

These findings extend the concept of digital leadership proposed by Sheninger (2019), who argues that educational leaders must establish a shared digital vision capable of transforming teaching, learning, communication, and organizational management. In both madrasahs, technology is not perceived merely as a collection of digital tools but as a strategic mechanism for achieving long-term institutional goals. However, this study demonstrates that digital leadership within Islamic schools possesses distinctive characteristics that are insufficiently addressed in mainstream digital leadership literature. Unlike secular educational institutions, digital leadership in madrasahs integrates technological innovation with Islamic educational philosophy, ensuring that digital transformation reinforces rather than replaces religious values. Consequently, digital vision functions simultaneously as an instrument for technological modernization and moral education, creating what this study conceptualizes as Islamic Digital Leadership.

The findings are also consistent with Fullan's (2014) theory of educational change, which emphasizes that sustainable transformation depends on leaders' capacity to develop a shared vision, foster organizational commitment, and implement change gradually. At MTsN 1 Pacitan,



digital transformation follows an evolutionary pathway characterized by incremental innovation, continuous teacher supervision, and systematic integration of instructional technologies. This gradual process minimizes organizational resistance while strengthening institutional stability. Conversely, MTs Pembangunan Pacitan demonstrates a more transformational orientation by redesigning educational structures, diversifying learning pathways, strengthening digital competencies, and expanding collaboration networks beyond the school environment. Such findings support Fullan's proposition that effective educational reform requires balancing innovation with organizational capacity and stakeholder readiness.

From the perspective of strategic management, the findings further support the Resource-Based View (RBV) proposed by Barney (1991), which argues that sustainable competitive advantage arises from valuable, rare, inimitable, and organizationally embedded resources. In this study, digital vision emerges as an intangible strategic capability that enables madrasahs to integrate leadership, technology, curriculum innovation, and organizational culture into unique institutional competencies. Rather than relying solely on technological infrastructure, both institutions leverage leadership vision as a dynamic organizational resource that differentiates them from competing schools. This finding indicates that competitive advantage in Islamic educational institutions is generated primarily through strategic leadership capabilities rather than technological investment alone.

The study aligns with the Dynamic Capabilities Theory developed by Teece (2018), which emphasizes that organizations must continuously sense environmental changes, seize emerging opportunities, and transform internal resources to remain competitive. MTs Pembangunan Pacitan illustrates stronger dynamic capabilities through its adaptive curriculum, digital extracurricular programs, multimedia production initiatives, and external institutional partnerships. Meanwhile, MTsN 1 Pacitan demonstrates adaptive capability by strengthening existing instructional systems through continuous digital integration and professional supervision. These differences illustrate that digital transformation can follow multiple developmental trajectories while still contributing to organizational competitiveness.

An important theoretical contribution of this research lies in proposing two complementary models of digital vision within Islamic educational leadership. The first model, termed Integrative



Digital Vision, represents a leadership orientation in which technology is integrated into existing educational systems to improve instructional quality, curriculum implementation, and academic management without fundamentally altering organizational structures. The second model, referred to as Transformative Digital Vision, describes leadership that utilizes digital technology to redesign educational systems, develop new learning ecosystems, empower students through digital competencies, and establish broader institutional collaborations. These two models expand existing digital leadership frameworks by demonstrating that digital transformation is not a single continuum but encompasses different strategic pathways depending on institutional context.

Another distinctive contribution concerns the integration of Islamic educational values into digital transformation. Existing digital leadership models generally emphasize innovation, efficiency, organizational communication, and technological adoption (Sheninger, 2019; Dexter, 2018). However, the present study demonstrates that digital transformation in madrasahs simultaneously promotes akhlaq (moral character), Qur'anic literacy, and pesantren values. Digitalization therefore functions not only as a technological innovation but also as a mechanism for preserving religious identity while enhancing institutional competitiveness. This finding enriches contemporary discussions on educational leadership by introducing an Islamic perspective in which technological advancement and spiritual development are mutually reinforcing rather than contradictory.

This study concludes that the competitive advantage of madrasahs is determined not simply by the availability of digital infrastructure but by the principal's ability to formulate, communicate, and institutionalize a coherent digital vision aligned with organizational goals and Islamic values. Accordingly, digital vision should be recognized as a strategic leadership capability that enables Islamic educational institutions to achieve sustainable innovation, organizational resilience, and long-term competitive advantage in the era of digital transformation.

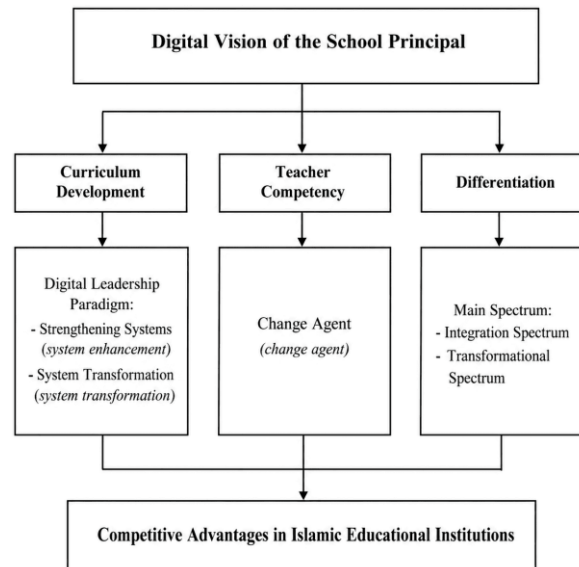


Figure 2. *Spectrum of Madrasah Principals' Digital Vision*

Digital Transformation in Enhancing Competitive Advantage

The findings demonstrate that digital transformation in both madrasahs has evolved beyond the adoption of digital technologies as instructional tools toward a comprehensive transformation of educational systems and organizational practices. Nevertheless, the degree and orientation of transformation differ substantially between the two institutions. At MTsN 1 Pacitan, digital transformation is primarily manifested through the integration of digital media into classroom instruction, technology-assisted academic supervision, and continuous enhancement of teachers' digital competencies. In this context, digitalization functions as an instrument for improving instructional effectiveness while preserving the existing organizational structure. Conversely, MTs Pembangunan Pacitan exhibits a broader and more systemic transformation by integrating digital technologies into student competency development, multimedia production, digital journalism, institutional branding through social media, and digital communication networks that support organizational coordination and external collaboration. These findings indicate that digital transformation is not a uniform process but develops according to institutional priorities, organizational maturity, and leadership strategies.

From a theoretical perspective, these findings are consistent with the digital transformation framework proposed by Bharadwaj et al. (2013), who argue that digital technologies should be viewed as strategic organizational assets capable of reshaping institutional processes, creating new



capabilities, and generating sustainable value. Rather than simply digitizing existing activities, successful organizations redesign their operational models to exploit the strategic potential of digital technologies. The findings suggest that MTs Pembangunan Pacitan has moved beyond digital adoption toward strategic digital transformation by embedding technology into its educational model, student development programs, and organizational governance. Meanwhile, MTsN 1 Pacitan represents a transitional stage in which digital technologies primarily enhance instructional quality without fundamentally restructuring institutional operations.

The results also support the organizational digital maturity perspective developed by Kane et al. (2015), which emphasizes that successful digital transformation depends more on leadership, organizational culture, and strategic alignment than on technological investment itself. Both madrasahs possess comparable access to digital technologies; however, differences in leadership orientation produce distinct transformation outcomes. MTsN 1 Pacitan prioritizes instructional improvement through structured digital integration, whereas MTs Pembangunan Pacitan demonstrates higher digital maturity by integrating technology into curriculum innovation, student empowerment, institutional communication, and collaborative partnerships. This finding reinforces the argument that digital maturity should be understood as an organizational capability rather than merely a technological condition.

The findings resonate with Rogers' (2016) concept of digital transformation, which argues that organizations in the digital era must rethink their value creation processes rather than simply automate existing activities. In MTs Pembangunan Pacitan, digital transformation is reflected in the emergence of new educational value propositions, including digital journalism, multimedia production, student-generated digital content, and specialized academic programs that prepare learners for future competencies while preserving Islamic values. These initiatives demonstrate that technology is utilized to generate new educational experiences and institutional differentiation, thereby strengthening competitive positioning in an increasingly competitive educational environment.

Unlike conventional digital transformation models that primarily emphasize organizational efficiency and technological innovation, this study identifies a distinctive pattern within Islamic educational institutions. Digital transformation in madrasahs is guided by the integration of



technological advancement with religious identity, ensuring that digital innovation contributes to the development of moral character (*akhlaq*), Qur'anic literacy, and Islamic values. Technology therefore functions not only as a driver of organizational innovation but also as a medium for strengthening spiritual education. This finding suggests that digital transformation within Islamic schools should be understood as value-based digital transformation, in which technological development is intentionally aligned with religious and ethical objectives rather than technological modernization alone.

The findings also correspond with the socio-technical systems perspective proposed by Bostrom and Heinen (1977), which argues that organizational transformation succeeds only when technological systems evolve simultaneously with social systems, including leadership, organizational culture, communication, and human competencies. In both madrasahs, technological implementation is accompanied by continuous teacher development, collaborative organizational communication, student participation, and institutional learning processes. Consequently, digital transformation is realized as a balanced interaction between technological innovation and organizational adaptation rather than a purely technological initiative.

An important theoretical contribution of this study is the identification of two complementary models of digital transformation within Islamic educational institutions. The first, referred to as Instructional Digital Transformation, emphasizes the enhancement of teaching quality through technology integration, digital supervision, and professional development while maintaining organizational stability. This model characterizes the transformation observed at MTsN 1 Pacitan. The second, termed Holistic Digital Transformation, reflects a broader organizational change in which digital technologies reshape curriculum design, student competency development, institutional communication, external partnerships, and organizational culture, as demonstrated by MTs Pembangunan Pacitan. These models extend existing digital transformation theories by illustrating that educational transformation occurs through multiple developmental pathways rather than a single linear progression.

This study argues that sustainable competitive advantage in madrasahs is achieved not through technology adoption alone but through the institutionalization of digital transformation across instructional, managerial, organizational, and cultural dimensions. Digital transformation



becomes strategically valuable when educational leaders successfully integrate technological innovation with organizational learning, stakeholder collaboration, and Islamic educational values. Accordingly, digital transformation should be conceptualized as a multidimensional capability that simultaneously enhances educational quality, organizational resilience, institutional reputation, and long-term competitiveness.

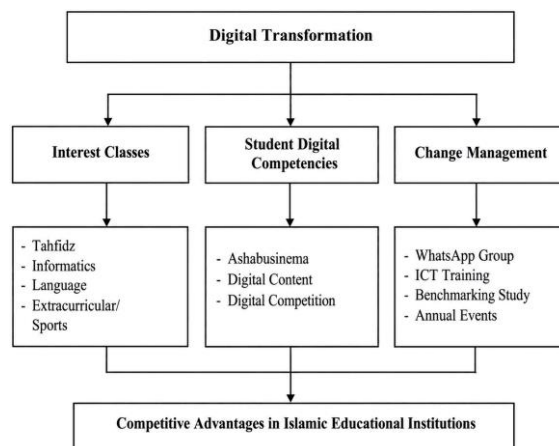


Figure 3. Digital Transformation Model of Madrasahs in Enhancing Competitive Advantage

Characteristics of Digital Leadership in Enhancing Competitive Advantage

The findings demonstrate that the digital leadership of madrasah principals at MTsN 1 Pacitan and MTs Pembangunan Pacitan is not a uniform construct but evolves according to institutional contexts, organizational culture, and strategic priorities. Although both institutions have integrated digital technologies into educational management, their leadership characteristics differ in decision-making patterns, innovation strategies, and approaches to organizational transformation. Across both cases, four interconnected dimensions emerged as the foundation of digital leadership: visionary, innovative, collaborative, and adaptive leadership. Rather than functioning independently, these dimensions interact to create strategic capabilities that enable madrasahs to develop sustainable competitive advantage instead of merely adopting educational technologies.

Visionary leadership is reflected in the principals' capacity to formulate and communicate a long-term digital direction that aligns technological development with institutional objectives. At MTsN 1 Pacitan, digital vision strengthens existing educational systems through curriculum integration, digital supervision, and technology-supported instruction. MTs Pembangunan Pacitan



demonstrates a broader orientation by redesigning educational structures through specialization programs in Tahfidz, Informatics, Languages, and Sports while embedding pesantren values into every aspect of digital transformation. This pattern extends the digital leadership framework proposed by Sheninger (2019), who emphasizes that effective digital leaders create a shared vision for leveraging technology to improve organizational performance. Evidence from this study indicates that digital vision within Islamic educational institutions cannot be separated from religious values because technological transformation is consistently directed toward spiritual and moral development rather than technological advancement alone (Sheninger, 2019; Hallinger, 2020).

Organizational change theory also provides a useful lens for interpreting these findings. Fullan (2020) argues that sustainable educational transformation depends on leadership capable of balancing innovation with organizational stability. The comparison between the two madrasahs illustrates two developmental trajectories of digital vision. MTsN 1 Pacitan represents an integrative digital vision, where technology aligns and strengthens established educational systems. MTs Pembangunan Pacitan illustrates a transformative value-based digital vision, in which technology becomes a strategic instrument for institutional differentiation while preserving Islamic identity. These findings suggest that digital transformation in Islamic schools follows different organizational pathways determined by institutional culture and educational missions.

Innovation emerges through continuous efforts to improve instructional quality using digital learning media, technology-enhanced pedagogy, multimedia production, and specialized academic programs. Innovation is embedded within curriculum implementation, teacher supervision, and academic planning rather than being treated as isolated initiatives. Such practices are consistent with innovation-oriented leadership, where school leaders function as catalysts for continuous organizational improvement (Couros, 2015). They also reflect the principle of continuous improvement, whereby technological initiatives gradually strengthen educational quality without disrupting institutional stability (Bryk et al., 2015). Within the Islamic educational context, innovation represents the concept of *tajdīd*, emphasizing constructive renewal while maintaining educational values and moral objectives. The evidence therefore supports the notion of adaptive



system-based innovation, in which digital innovation reinforces existing educational systems without compromising institutional identity.

Collaboration appears through the development of an internal digital ecosystem that supports professional learning among teachers, technology-assisted supervision, digital communication, and collective curriculum development. Meetings, mentoring, collaborative supervision, and digital platforms such as WhatsApp create communities of practice that facilitate knowledge sharing and organizational responsiveness. These practices reinforce the Professional Learning Community framework, which highlights collaborative culture as a central factor in improving instructional quality and organizational learning (DuFour et al., 2021). They also correspond with Fullan's collaborative leadership model, emphasizing that sustainable educational improvement relies upon collective organizational capacity rather than individual performance (Fullan, 2020).

Digital collaboration extends beyond interpersonal interaction into organizational governance. Technology functions simultaneously as a medium for communication, documentation, coordination, and institutional management. This organizational pattern reflects Castells' (2010) concept of the network society, where institutional effectiveness increasingly depends on digitally connected communication systems. Collaboration observed in both madrasahs nevertheless remains predominantly internal rather than extending toward broader inter-institutional digital networks. The findings therefore introduce two complementary forms of collaborative leadership: internal collaborative leadership for system reinforcement, represented by MTsN 1 Pacitan, and internal collaborative leadership for organizational transformation, represented by MTs Pembangunan Pacitan.

Adaptability functions as the integrating capability connecting vision, innovation, and collaboration into a coherent leadership model. The principals demonstrate adaptability by introducing technology according to teachers' readiness, facilitating digital competency development among teachers and students, and expanding organizational learning through professional development and institutional partnerships. These findings support Couros' (2015) concept of the *Innovator's Mindset*, which emphasizes openness toward experimentation and continuous learning, together with Fullan's (2020) view that adaptive leadership is essential for managing educational change in dynamic environments. Adaptation within these madrasahs



differs from technology-driven approaches commonly reported in previous studies because technological adoption consistently remains guided by Islamic educational values. The findings therefore conceptualize this capability as value-based progressive adaptive leadership, defined as the capacity to respond proactively and selectively to technological change while maintaining Islamic educational values as the primary organizational foundation. The adaptive characteristic of digital leadership demonstrated by madrasah principals can be conceptualized as value-based progressive adaptive leadership, referring to the capacity to respond proactively and selectively to technological change while consistently maintaining Islamic educational values.

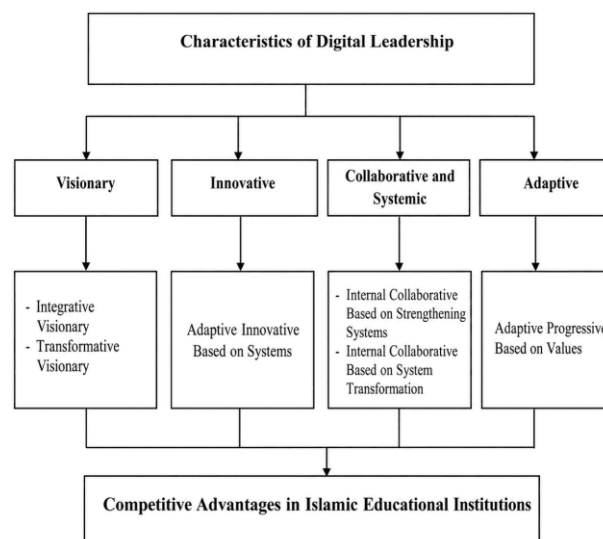


Figure 4. *Characteristics of Digital Leadership*

Taken together, these four leadership characteristics operate as complementary strategic resources that strengthen institutional competitiveness. Vision provides strategic direction, innovation generates educational differentiation, collaboration develops organizational capacity, and adaptability sustains institutional resilience amid technological change. Their interaction extends previous digital leadership literature by demonstrating that competitive advantage within Islamic educational institutions emerges through the alignment of technological transformation, organizational culture, and religious values. This integrated pattern is consistent with the Resource-Based View, which explains that sustainable competitive advantage originates from valuable, rare, inimitable, and organizationally embedded capabilities (Barney, 1991).

Cross-case analysis further demonstrates that competitive advantage is shaped by the interaction between institutional inputs, organizational processes, and educational outcomes. Both



madrasahs have strengthened institutional reputation through accredited educational quality, consistent academic and non-academic achievements, and increasing public trust generated by differentiated educational programs integrating digital competence with Islamic character formation. These findings reinforce Qomar's (2013) proposition that excellence in Islamic education depends upon balancing scientific competence with religious values within a coherent educational system. Digitalization and spirituality therefore function as complementary rather than competing dimensions of educational development.

Institutional innovation and program differentiation also contribute significantly to stakeholder satisfaction. Specialized classes, technology-supported learning, and pesantren-based digital culture create distinctive educational products that are difficult for competing institutions to replicate. Such evidence supports strategic management perspectives arguing that sustainable competitive advantage is achieved when organizations continuously provide value exceeding stakeholder expectations through differentiated services (Porter, 1985; Barney, 1991). Educational management research similarly indicates that institutional reputation, organizational culture, and leadership quality substantially influence public trust and school competitiveness (Hallinger, 2020; Newby, 2018).

The conceptual model developed from both research sites demonstrates that competitive advantage evolves through the interaction of digital vision, digital transformation, and digital leadership characteristics, all operating within a value-based Islamic educational framework. The integration of technology, organizational innovation, and religious culture contributes not only to improvements in academic quality and institutional management but also to stronger organizational legitimacy and community trust. This study therefore proposes Value-Based Digital Leadership for Competitive Advantage as an emerging theoretical model explaining how Islamic educational institutions simultaneously achieve digital innovation, organizational excellence, and preservation of religious identity in the era of digital transformation.

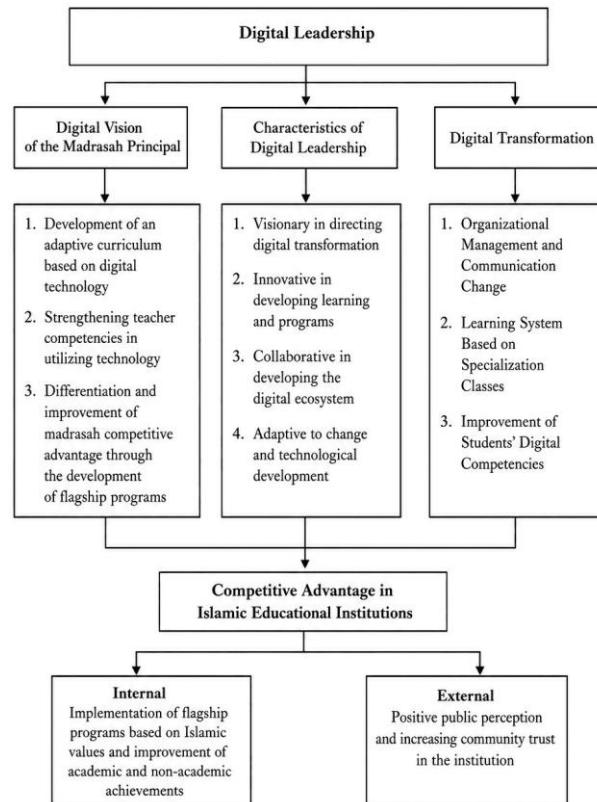


Figure 5. Digital Leadership in Enhancing Competitive Advantage

Theoretical Contribution and Value-Based Digital Leadership Spectrum Model

The findings contribute to the advancement of digital leadership theory by demonstrating that digital leadership in Islamic educational institutions is not a static organizational capability but a developmental process that evolves through multiple stages of institutional maturity. Existing digital leadership frameworks proposed by Sheninger (2019) and Fullan (2020) primarily emphasize the strategic use of technology to improve learning, organizational effectiveness, and educational change. Although these perspectives have significantly enriched the digital leadership literature, they provide limited explanation regarding how digital leadership develops progressively within Islamic schools where technological innovation is continuously negotiated with religious values and pesantren culture. The present study addresses this theoretical gap by showing that digital leadership should be understood not only as technological competence but also as a value-driven organizational capability that develops incrementally through institutional experience.



Empirical evidence from MTsN 1 Pacitan and MTs Pembangunan Pacitan illustrates that the trajectory of digital leadership differs according to organizational readiness, leadership vision, human resource capacity, and institutional culture. Rather than representing different forms of leadership, the two madrasahs illustrate different levels of digital leadership maturity. MTsN 1 Pacitan predominantly demonstrates digital leadership oriented toward strengthening instructional systems through curriculum integration, digital supervision, and technology-supported learning. MTs Pembangunan Pacitan represents a more advanced stage in which digitalization reshapes organizational structures, educational programs, and institutional culture while maintaining pesantren identity. These findings indicate that digital leadership evolves as a continuum instead of emerging as a single organizational condition.

The analysis also reveals several contextual challenges influencing digital leadership implementation in Islamic educational institutions. Institutional leaders are expected to accelerate digital transformation following national educational policies despite unequal readiness among teachers and limited technical support. Differences in digital competence between younger and senior teachers frequently create organizational tension during technological transition. Financial limitations continue to affect the availability of digital infrastructure, including internet bandwidth, computer laboratories, and classroom technology. Institutional sustainability also becomes vulnerable because schools often experience high turnover among digitally competent personnel, particularly within private madrasahs, requiring continuous investment in professional development. These contextual conditions demonstrate that successful digital leadership depends not only on technological resources but also on organizational learning capacity and strategic leadership capable of managing continuous adaptation.

Building upon these empirical patterns, the study proposes a new conceptual framework termed the Value-Based Digital Leadership Spectrum Model. The model conceptualizes digital leadership as a hierarchical developmental spectrum consisting of five interconnected stages through which Islamic educational institutions progressively integrate technology into organizational practice while preserving religious values.

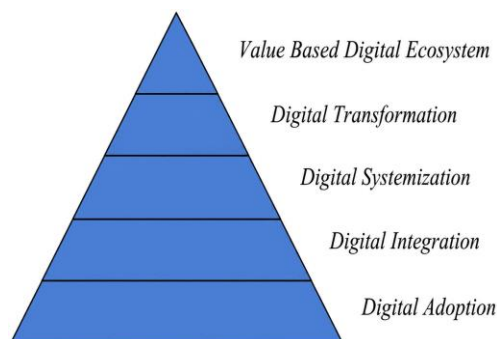


Figure 6. Value-Based Digital Leadership Spectrum Pyramid Model

The foundational stage, Digital Adoption, represents the initial use of digital technology as an operational tool. Technology primarily replaces conventional instruments without fundamentally changing instructional or organizational practices. Digital devices, presentation software, and communication applications serve to improve efficiency while maintaining existing educational routines.

Progression toward Digital Integration occurs when technology becomes embedded within curriculum implementation, instructional strategies, assessment practices, and classroom interaction. Learning management systems, interactive learning platforms, digital assessments, and multimedia resources become integral components of teaching and learning rather than supplementary tools.

Institutional maturity increases further during Digital Systemization, where digital technology extends beyond classroom instruction into organizational governance. Administrative management, academic information systems, financial management, student services, and institutional documentation become integrated within interconnected digital systems that improve efficiency, transparency, and decision-making.

A higher level of organizational maturity is represented by Digital Transformation, where technology reshapes institutional culture, leadership practices, organizational structures, and educational innovation. Digitalization no longer functions as technological support but becomes a strategic mechanism for redesigning educational processes, strengthening institutional competitiveness, and encouraging continuous organizational learning.

The highest stage of the model is Value-Based Digital Ecosystem, in which technological capability, organizational systems, human resources, and Islamic values operate as an integrated



ecosystem. Digitalization supports not only academic excellence but also ethical leadership, digital citizenship, inclusiveness, integrity, and sustainability. Technology therefore becomes an instrument for strengthening institutional identity rather than replacing religious traditions. This final stage distinguishes Islamic educational institutions from many contemporary digital leadership models that predominantly emphasize technological performance while paying comparatively less attention to moral and spiritual dimensions.

Movement across these five stages is influenced by several interrelated factors, including leadership vision, digital competence, organizational culture, institutional readiness, and the integration of pesantren values into educational management. Progression should therefore be understood as evolutionary rather than linear, allowing institutions to advance according to their contextual capacities and developmental priorities.

The proposed model offers several theoretical contributions to digital leadership literature. Existing models generally conceptualize digital leadership as leadership capability or organizational competence. The present study instead positions digital leadership as a developmental spectrum that evolves from technological adoption toward the creation of a value-based digital ecosystem. This perspective extends previous scholarship by introducing organizational maturity as an essential dimension of digital leadership within Islamic education. Simultaneously, the model integrates technological transformation with Islamic educational philosophy, demonstrating that religious values function as strategic organizational resources guiding digital innovation rather than constraining it.

The model also contributes to competitive advantage theory by explaining that sustainable competitiveness in Islamic educational institutions emerges from the interaction between digital capability, organizational learning, and value-based leadership. Digital transformation alone is insufficient to generate long-term institutional excellence. Competitive advantage becomes sustainable when technological innovation is embedded within organizational culture, continuously supported by leadership, and aligned with Islamic ethical values. Accordingly, this study proposes the Value-Based Digital Leadership Spectrum Model as an emerging conceptual framework for explaining how madrasahs progressively develop digital maturity while preserving



institutional identity and strengthening organizational competitiveness in the era of digital transformation.

CONCLUSION

This study demonstrates that digital leadership functions as a strategic capability that enables Islamic educational institutions to strengthen competitive advantage through the integration of technological innovation, organizational development, and Islamic educational values. Evidence from MTsN 1 Pacitan and MTs Pembangunan Pacitan shows that digital leadership extends beyond technology adoption and becomes a comprehensive leadership approach encompassing digital vision, organizational transformation, innovation, collaboration, and adaptive capacity. Institutional differences indicate that digital leadership evolves according to organizational context, leadership orientation, and institutional readiness. MTsN 1 Pacitan emphasizes instructional integration and systematic improvement, whereas MTs Pembangunan Pacitan applies a broader transformation that redesigns educational programs, organizational culture, and student competency development. These findings confirm that sustainable competitive advantage is determined primarily by leadership capability rather than technological infrastructure alone.

The research also extends current digital leadership literature by proposing an integrated conceptual explanation of how competitive advantage develops within Islamic educational institutions. Digital vision provides strategic direction, digital transformation restructures organizational processes, and visionary, innovative, collaborative, and adaptive leadership characteristics reinforce institutional capacity for continuous improvement. These interconnected dimensions generate differentiated educational services, strengthen organizational reputation, increase stakeholder trust, and preserve institutional identity simultaneously. Religious values do not limit technological innovation; they function as strategic organizational resources that guide decision-making, ethical digital practices, organizational learning, and sustainable institutional development. The interaction between technology, leadership, organizational culture, and pesantren values therefore creates a distinctive model of digital leadership that differs from technology-centered frameworks commonly discussed in mainstream educational leadership studies.



A major contribution of this research is the development of the Value-Based Digital Leadership Spectrum Model, which conceptualizes digital leadership as a progressive process consisting of five developmental stages: Digital Adoption, Digital Integration, Digital Systemization, Digital Transformation, and Value-Based Digital Ecosystem. The model explains that digital maturity develops incrementally through leadership vision, human resource competence, organizational learning, institutional readiness, and the integration of Islamic values into educational governance. This framework provides theoretical enrichment for digital leadership research while offering practical guidance for policymakers, educational leaders, and madrasah administrators seeking to implement sustainable digital transformation without compromising religious identity. Future studies may validate this model quantitatively across broader educational contexts, compare its applicability in different Islamic educational systems, and examine the influence of organizational culture, digital capability, and leadership maturity on institutional performance and long-term competitiveness.

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