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Transformational Leadership and Teacher Performance in the Digital Era: A Case Study of an Indonesian Madrasah

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ABSTRACT

This study aims to examine how transformational leadership is implemented by the head of madrasah to improve teacher performance in the digital era at Madrasah. Digital transformation has reshaped governance, learning practices, and teacher professionalism, requiring leaders to manage technological and cultural change. In madrasah contexts, this issue is important because digital adaptation must align with institutional values, limited resources, and teacher readiness. This research employed a qualitative single-case study design. Data were collected through in-depth interviews, participant observation, and document analysis, then analyzed using the interactive model of Miles, Huberman, and Saldaña. The findings show, first, that teacher performance was strengthened through mentoring, supervision, motivation, and evaluation. Second, transformational leadership appeared through idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Third, implementation was supported by leadership commitment, collaborative culture, stakeholder support, parental participation, and technology use. However, it was constrained by competence gaps, infrastructure, communication problems, resistance, and unequal readiness. These findings imply that transformational leadership functions as an adaptive mechanism for teacher development. Practically, madrasah leaders should design collaborative and differentiated professional development strategies.

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INTRODUCTION

The digital transformation of education has become an important social issue because it determines the ability of society to prepare an adaptive, productive, and competitive generation. The main point is that schools and madrassas are no longer adequately managed with conventional administrative patterns; Both must be able to integrate technology into learning, governance,

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communication, and human resource development. The reason is that digital changes affect the way teachers design learning, interact with students, evaluate learning outcomes, and develop their professionalism. Empirical evidence suggests that transformational leadership can empower teachers to use technology more meaningfully, while leadership styles and digital transformation are related to the performance of educational institutions (Carvalho et al., 2022; Schmitz et al., 2023). In addition, digital competence and transformational leadership have proven to be important predictors of teacher performance (Madrid et al., 2024). Thus, this research is important because it discusses how madrasah leadership can be a driver of education quality in the midst of digital-based social changes.

The general problem behind this research is the uneven readiness of educational institutions to transform digitalization into improving teacher performance. Many schools have used applications, learning tools, and digital administration systems, but their use often stops at technical aspects, not touching changes in work culture, professional collaboration, or the quality of learning services. This condition shows that digital transformation is not only a matter of device availability, but also a matter of leadership, digital literacy, and change management. Recent research shows that the digital leadership of school principals is related to teacher professional performance and educational sustainability (Xin et al., 2025). Digital transformation also affects teacher performance evaluation, so teachers are required to adjust the way they work with data-based and technology-based systems (Masaeed et al., 2025). However, teachers' digital competencies still require systematic leadership support so that technological changes truly result in improved performance, not just a new administrative burden (Antonopoulou et al., 2025).

Phenomena in the field show that madrasas face unique challenges in carrying out digital transformation. On the one hand, madrasas are required to follow a technology-based education service system, such as digital administration, academic reporting, online communication, and the use of learning media. On the other hand, teachers' ability to utilize technology is not always the same, either because of differences in age, experience, access to training, work habits, and facility support. In the context of Madrasah in the context of Madrasah, this issue becomes relevant because madrasah heads need to direct teachers not only to comply with the digital system, but also to be able to use it to improve discipline, creativity, collaboration, and the quality of learning. A study on the transformational leadership of school principals in the digital era shows its influence on teacher performance through motivation, vision strengthening, professional coaching, and the creation of a work climate that supports change (Alam et al., 2023; Habibah & Juhari, 2025; Unsurni et al., 2025).

Previous literature has confirmed that transformational leadership, digital leadership, and digital competence are closely related to improved teacher performance. Schmitz et al. (2023) emphasize the role of transformational leadership in empowering teachers to integrate technology more complexly in learning. Berkovich and Hassan (2023) show that principals' digital transformational leadership is related to teacher commitment and school effectiveness. Anwar and Warman (2025) place digital competence as a mediator between transformational leadership and teacher performance, while Supriadi (2025) emphasizes the importance of digital literacy in bridging digital leadership and teacher performance. Meanwhile, Sari et al. (2024) review digital leadership strategies to improve teacher performance in the era of technological transformation. However, most of these studies still dominantly discuss the relationship between variables, the influence of mediation, or conceptual studies, so it is not enough to explain transformational leadership practices in depth in the context of case study-based madrasas.

The novelty of this research lies in the effort to examine transformational leadership not only as a leadership style, but as a managerial, pedagogical, and cultural practice that works in the madrasah ecosystem in the digital era. This research places madrasah heads as key actors who connect the vision of change, strengthening teacher competence, utilizing technology, and improving learning performance. Unlike research that only assesses the influence of leadership on performance, this study describes how leadership is implemented, what strategies are used, and what conditions strengthen or hinder its success. The state of the art of this research is the integration between transformational leadership, digitization of education, and teacher performance in the context of Indonesian madrasas. This integration is important to be completed because madrassas have institutional characteristics, religious culture, work relationship patterns, and resource limitations that are not always the same as public schools.

The research problem posed is how madrasah heads implement transformational leadership to improve teacher performance in the digital era. This issue is important because improving teacher performance cannot be separated from the way leaders build vision, set an example, facilitate professional development, encourage innovation, and manage resistance to change. The initial argument of this study is that effective transformational leadership will strengthen teachers' readiness to face digitalization if carried out consistently through vision communication, competency development, technology support, constructive supervision, and the creation of a collaborative work culture. On the other hand, digitalization has the potential to become an administrative routine if the head of the madrasah is unable to connect it with the learning and development needs of teachers. Thus, the success of madrasah digital transformation is highly determined by the quality of leadership that is

able to turn technology into a means of improving performance, not just a technical obligation.

Based on these arguments, this study is directed to explain the implementation of transformational leadership of madrasah heads in improving teacher performance in the digital era, identify the strategies used by madrasah heads, and analyze the supporting and inhibiting factors that affect their success. This research contributes theoretically by expanding the study of transformational leadership in the context of madrassas and digital transformation of education. Practically, this research can provide an overview for madrasah heads about strategies to strengthen teacher performance through digital vision, competency development, supervision, collaboration, and change management. Institutionally, the results of this research are expected to help madrasas formulate leadership patterns that are more adaptive to the needs of the times without ignoring the Islamic character and organizational values of madrasas. Therefore, case studies in Madrassas in East Java are important to understand the real practice of transformational leadership in the context of secondary Islamic education.

RESEARCH METHODS

This study employed a qualitative approach using a single-case study design. This design was selected because the study sought to obtain an in-depth, context-sensitive understanding of how the head of the madrasah implemented transformational leadership to improve teacher performance in the digital era. A case study is appropriate when the researcher examines a contemporary phenomenon within its real-life context, particularly when the boundaries between the phenomenon and its institutional setting cannot be clearly separated (Lim, 2025; Miller et al., 2023). In this study, the case was bounded by the institutional context of MTs Hidayatus Sholihin, located in Turus Village, Gurah District, Kediri Regency, East Java, Indonesia. The qualitative case study design enabled the researcher to explore leadership practices, digital transformation processes, teacher performance improvement strategies, and contextual factors influencing the implementation of transformational leadership in the madrasah setting (Lim, 2025; Villamin et al., 2025).

The research was conducted at MTs Hidayatus Sholihin in Turus-Gurah, Kediri, East Java, Indonesia. This site was purposively selected because it represents an Islamic junior secondary school that has begun integrating digital practices into educational management and teaching activities. The madrasah has used several forms of educational digitalization, including digital-based administration, school information systems, technology-supported communication, and digital learning media. In addition, the head of madrasah was considered to have demonstrated leadership practices relevant to transformational leadership, particularly in motivating teachers, encouraging

professional development, strengthening discipline, and supporting adaptation to digital change. Site selection in qualitative inquiry is not intended to produce statistical representativeness, but to identify an information-rich setting that can provide deep insight into the phenomenon under investigation (Mtisi, 2022). Therefore, MTs Hidayatus Sholihin was considered a relevant and strategic site for examining transformational leadership and teacher performance in the digital era.

Data were collected through in-depth interviews, passive participant observation, and document analysis. The informants were selected using purposive sampling, involving individuals who were directly related to the implementation of transformational leadership and teacher performance improvement, including the head of madrasah, teachers, and other relevant school personnel. When necessary, snowball sampling was used to identify additional informants who could provide further information until the data reached saturation. In-depth interviews were conducted to explore participants' experiences, perceptions, and interpretations regarding the leadership practices of the head of madrasah, strategies for improving teacher performance, and challenges in digital transformation. Passive participant observation was used to examine leadership interactions, teacher activities, administrative practices, and the use of digital technology in the madrasah environment without direct intervention by the researcher. Document analysis was conducted by reviewing relevant institutional documents, such as administrative records, teacher performance documents, digital platform records, school programs, and other supporting materials. The combination of interviews, observation, and documents strengthened data triangulation and enabled a more comprehensive understanding of the case (Almusaed et al., 2025; Riazi et al., 2023).

The data were analyzed using the interactive model of Miles, Huberman, and Saldaña, which consists of data collection, data condensation, data display, and conclusion drawing and verification (Li & Zhang, 2022; Nasir & Sukmawati, 2023). Data collection was conducted simultaneously with the initial interpretation of field findings. Data condensation involved selecting, focusing, simplifying, and organizing interview transcripts, observation notes, and documents according to the main focus of the study, namely the implementation of transformational leadership, strategies for improving teacher performance, and supporting and inhibiting factors in the digital era. The condensed data were then presented in narrative descriptions, thematic matrices, and categorized findings to facilitate interpretation. Conclusions were drawn progressively by identifying recurring patterns, relationships among categories, and meanings emerging from the field data. Verification was conducted continuously through triangulation of sources and techniques, prolonged engagement, persistent observation, and confirmability checks. These procedures were applied to

enhance the credibility, dependability, confirmability, and transferability of the findings, which are central criteria for trustworthiness in qualitative research (Meydan & Akkaş, 2024; Nasir & Sukmawati, 2023).

RESULTS AND DISCUSSION

Results

This study generated three major findings regarding the implementation of transformational leadership in improving teacher performance in the digital era at Madrasah. The findings are organized into three themes: first, the efforts of the head of madrasah to improve teacher performance; second, the implementation of transformational leadership in the digital era; and third, the supporting and inhibiting factors that affect its implementation. Each theme is presented through interview data, observational evidence, interpretive analysis, and thematic description.

The Efforts of the Head of Madrasah to Improve Teacher Performance in the Digital Era

Operationally, the head of madrasah's efforts to improve teacher performance involve a set of structured, continuous, and context-sensitive actions aimed at strengthening teachers' professional capacity, pedagogical quality, work discipline, and digital competence. In the field, these efforts were manifested through four main activities: teacher mentoring, academic supervision, motivational reinforcement, and performance evaluation. Mentoring was carried out through regular meetings, individual guidance, academic discussions, and digital learning training. Academic supervision was conducted to observe classroom practices and provide feedback. Motivation was given through appreciation, encouragement, and professional development opportunities. Evaluation was used to monitor teacher progress and determine follow-up programs. Thus, the improvement of teacher performance was not treated as an incidental activity but as a systematic leadership process embedded in the madrasah's daily management.

The first interview data indicate that the head of madrasah positioned teacher development as a strategic priority in responding to digital transformation. The head of madrasah stated: "Teachers cannot be asked to adapt to digital learning without guidance. We hold coordination meetings, provide direction, and encourage them to use digital media step by step so that they are not left behind". This statement suggests that leadership practice was not limited to issuing instructions, but involved a facilitative role in assisting teachers to understand and adopt digital tools. The researcher interpreted this data as evidence that the head of madrasah exercised developmental leadership by combining administrative control with professional support. Teacher

performance was improved through accompaniment, not merely through formal demands.

The second interview data came from a teacher who explained the practical impact of mentoring and supervision. The teacher stated: "The head of madrasah often gives input after observing our teaching. We are encouraged to improve lesson preparation, use learning media, and attend training when possible". This excerpt demonstrates that teachers perceived supervision not as a punitive mechanism, but as a professional feedback process. The researcher interpreted this finding as an indication that academic supervision functioned as an instrument for improving instructional quality. In the digital era, supervision also encouraged teachers to move beyond conventional teaching routines by integrating media, platforms, and technology-supported learning resources into classroom activities.

Table 1. Interview Evidence on the Efforts of the Head of Madrasah to Improve Teacher Performance

Position of Informant	Interview Excerpt	Indicator
Head of Madrasah	"Teachers need continuous guidance, especially in using digital media and improving classroom practice."	Teacher mentoring
Teacher	"After supervision, we usually receive suggestions on lesson planning, classroom management, and media use."	Academic supervision
Teacher	"The head of madrasah motivates us to join workshops and appreciates teachers who try to innovate."	Motivation and professional development
Curriculum Coordinator	"Teacher performance is monitored through meetings, supervision results, and follow-up discussions."	Performance evaluation

Table 1 indicates that the head of madrasah's efforts to improve teacher performance were multidimensional and organized as a developmental cycle rather than as separate managerial activities. Teacher performance was strengthened through four connected strategies: mentoring, academic supervision, motivational reinforcement, and evaluation. Mentoring functioned as the initial support mechanism, supervision provided diagnostic feedback on instructional practice, motivation strengthened teacher commitment to professional development, and evaluation ensured that improvement efforts were monitored and followed up. This pattern shows that the head of madrasah did not merely demand higher teacher performance in the digital era, but created a structured mechanism that helped teachers improve their professional practice gradually and continuously.

Observation results supported this interpretation. The head of madrasah used regular coordination meetings to discuss teacher performance, lesson preparation, digital administration, and instructional problems. Teachers were observed preparing learning materials, using digital devices for administrative and pedagogical purposes, and engaging in informal discussions after supervision. These findings suggest that teacher performance improvement was embedded in both formal and informal institutional practices. The emerging pattern demonstrates that digital-era performance improvement requires continuity rather than one-time training. It becomes more effective when leadership practices combine pedagogical guidance, motivational support, managerial monitoring, and gradual assistance in adopting digital tools.

The Implementation of Transformational Leadership by the Head of Madrasah in the Digital Era

The implementation of transformational leadership in this study refers to the observable leadership practices through which the head of madrasah influenced, motivated, stimulated, and supported teachers in improving their performance in response to digital transformation. In the field, this implementation was reflected in four dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Idealized influence appeared in the head of madrasah's discipline, integrity, responsibility, and commitment to digital-oriented institutional development. Inspirational motivation was reflected in the articulation of a shared vision and encouragement for innovation. Intellectual stimulation appeared in the encouragement of creativity and the use of digital platforms. Individualized consideration was seen in the provision of personal guidance, professional assistance, and opportunities for teacher development.

The first interview data show that the head of madrasah attempted to lead by example. The head of madrasah stated: "Before asking teachers to improve discipline and use digital systems, I must first show commitment, be present, and follow the system myself". This statement reflects the dimension of idealized influence, in which the leader becomes a model of expected behavior. The researcher interpreted this data as evidence that the head of madrasah built legitimacy through personal example. In the context of digital transformation, such example is significant because teachers are more likely to accept institutional change when the leader demonstrates consistency between instruction and personal practice.

The second interview data indicate that teachers experienced leadership as a source of motivation and professional encouragement. A teacher stated: "The head of madrasah often reminds us that digital learning is not only about using

technology, but about making learning more effective for students". This excerpt suggests that the head of madrasah connected digital transformation with pedagogical meaning. The researcher interpreted this data as evidence of inspirational motivation and intellectual stimulation. Digital technology was not introduced merely as an administrative requirement, but as a means to improve learning quality. This helped teachers understand the broader purpose of digital adaptation and encouraged them to experiment with new approaches.

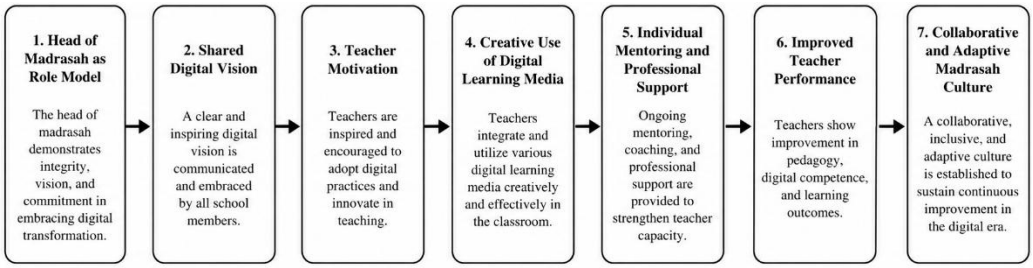

Figure 1. Flow of Transformational Leadership Implementation in the Digital Era

Figure 1 illustrates that transformational leadership began with personal example and moved toward institutional cultural change. The head of madrasah first established credibility through discipline and commitment. This credibility strengthened the acceptance of a shared digital vision. The vision then motivated teachers to improve their teaching practices, use digital media, and participate in professional development. Through individualized mentoring, teachers received support according to their needs. The final outcome was not only improved teacher performance, but also the emergence of a more collaborative and adaptive madrasah culture.

Table 2. Interview Evidence on the Implementation of Transformational Leadership

Position of Informant	Interview Excerpt	Indicator
Head of Madrasah	"I must give an example before asking teachers to be disciplined and adaptive to digital systems."	Idealized influence
Teacher	"The head of madrasah often explains the direction of the madrasah and encourages us to keep improving."	Inspirational motivation
Teacher	"We are encouraged to try digital media and find ways to make learning more interesting."	Intellectual stimulation
Senior Teacher	"Some teachers need personal guidance, and the head of madrasah usually gives attention according to each teacher's ability."	Individualized consideration

Table 1 shows that transformational leadership was implemented through the integration of symbolic and practical actions. Symbolically, the head of madrasah demonstrated role modeling, communicated a shared vision, and showed moral commitment to institutional improvement. Practically, this

leadership appeared through mentoring, encouragement to join training, support for digital learning, and individualized assistance. The four dimensions of transformational leadership were not practiced separately; idealized influence built teacher trust, inspirational motivation gave direction, intellectual stimulation encouraged innovation, and individualized consideration reduced teacher anxiety in adapting to digital change. Thus, transformational leadership functioned as an integrated process that connected vision, behavior, and teacher development.

Observation results confirmed that these dimensions were visible in daily madrasah practices. The head of madrasah consistently attended institutional activities, led coordination meetings, encouraged teachers to improve instructional practices, and provided space for discussing digital learning and administrative challenges. Teachers were also observed collaborating informally, sharing learning media, and solving technical difficulties together. Restating the data, the second finding indicates that transformational leadership was enacted through role modeling, vision building, intellectual encouragement, and individualized support. The emerging pattern shows a movement from leader-centered example to teacher-centered development, in which personal credibility, strategic direction, innovation, and differentiated support shaped a more collaborative and adaptive organizational culture.

Supporting and Inhibiting Factors in the Implementation of Transformational Leadership

Supporting and inhibiting factors are internal and external conditions that either strengthen or constrain the implementation of transformational leadership to improve teacher performance in the digital era. Supporting factors identified in the field included the commitment of the madrasah head, a collaborative work culture, support from the madrasah committee, parent participation, and the use of digital technology in learning and administration. Inhibiting factors included gaps in teachers' digital competence, limited technological infrastructure, suboptimal communication in some programs, resistance to change, and differences in teacher readiness. These factors indicate that transformational leadership does not operate in a vacuum. Its effectiveness depends on the interaction between leadership commitment, teacher capacity, stakeholder support, institutional culture, and technological resources.

The first interview data show that institutional commitment was a major supporting factor. The head of madrasah stated: "The development of the madrasah cannot depend only on the principal. Teachers, the committee, and parents must be involved, especially when we move toward digital systems" . This statement indicates that the head of madrasah understood digital

transformation as a collective institutional agenda. The researcher interpreted this data as evidence that stakeholder participation strengthened leadership implementation. Support from teachers, committees, and parents created a social foundation for change, making it easier for the head of madrasah to introduce programs related to teacher performance and digital adaptation.

The second interview data reveal that teacher readiness remained uneven. A teacher stated: "Some teachers are already comfortable using digital media, but others still need help, especially senior teachers who are not used to digital platforms". This statement highlights the existence of a digital competence gap among teachers. The researcher interpreted this data as an important constraint in implementing transformational leadership. Although the head of madrasah encouraged innovation and digital adaptation, not all teachers had the same starting point. This means that leadership strategies had to be differentiated, gradual, and sensitive to teachers' capacity levels.

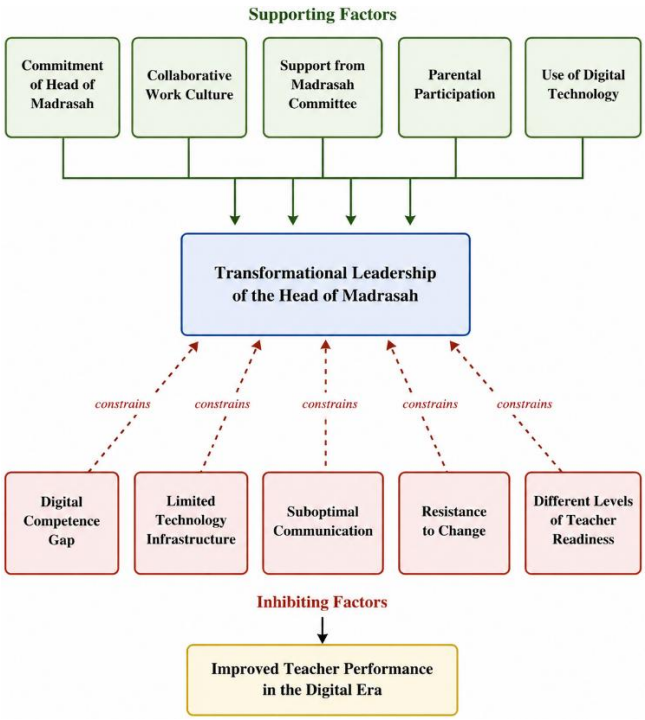

Figure 2. Supporting and Inhibiting Factors Affecting Transformational Leadership Implementation

Figure 2 shows that the implementation of transformational leadership was influenced by two opposing sets of conditions. Supporting factors strengthened the head of madrasah's ability to guide teachers, build collaboration, and promote digital adaptation. Inhibiting factors, however, constrained the speed, consistency, and depth of implementation. This indicates that leadership effectiveness was not determined solely by the leader's intention

or style, but also by teacher readiness, infrastructure availability, communication quality, and stakeholder involvement.

Table 3. Interview Evidence on Supporting and Inhibiting Factors

Position of Informant	Interview Excerpt	Indicator
Head of Madrasah	"Commitment is important, but change must involve teachers, the committee, and parents."	Leadership commitment and stakeholder support
Teacher	"The work atmosphere is supportive because teachers often help each other when using digital tools."	Collaborative work culture
Committee Representative	"The committee supports programs that improve teacher quality and madrasah development."	Committee support
Teacher	"The main obstacle is that not all teachers have the same ability to use digital platforms."	Digital competence gap
Senior Teacher	"Some programs are good, but communication sometimes needs to be clearer so that teachers understand the technical steps."	Communication and readiness constraints

Table 1 indicates that supporting factors were mainly relational and institutional. The commitment of the head of madrasah provided direction, collaborative work culture enabled peer support among teachers, committee support strengthened institutional legitimacy, and parental participation reinforced the social acceptance of madrasah programs. These factors created an enabling environment for transformational leadership, showing that leadership implementation became stronger when the head of madrasah was supported by internal and external stakeholders.

At the same time, the inhibiting factors were related to capacity, infrastructure, communication, and readiness. Digital competence gaps limited teachers' ability to respond equally to digital transformation, while limited infrastructure reduced the consistency of technology use in learning and administration. Suboptimal communication, resistance to change, and unequal teacher readiness made leadership implementation more complex. These barriers do not necessarily indicate leadership failure, but rather show contextual constraints that require adaptive and differentiated leadership responses.

Observation results confirmed this interaction between enabling and constraining forces. Teachers generally demonstrated willingness to cooperate in meetings, administrative activities, and informal discussions, and some were able to use digital tools for preparing materials and managing tasks. However,

differences in digital fluency remained visible, as some teachers still required assistance in using digital platforms. Restating the data, transformational leadership was supported by commitment, collaboration, stakeholder involvement, parental participation, and technology use, but constrained by human resource readiness and infrastructure limitations. The dominant pattern shows that collaboration created momentum for change, while unequal digital readiness slowed the translation of leadership direction into classroom practice.

Discussion

The first finding shows that the head of madrasah improved teacher performance through a continuous cycle of mentoring, academic supervision, motivational reinforcement, and performance evaluation. This finding is consistent with studies arguing that school leadership in the digital era must move beyond administrative control and become a developmental mechanism for strengthening teacher professionalism. Tobondo (2025) emphasizes that transformational leadership in digital school management is effective when principals optimize teacher guidance, professional discipline, and institutional adaptation to technological change. Similarly, Nuraini et al. (2025) found that digital leadership contributes to teacher performance when leaders provide direction, build professional commitment, and support teachers in integrating digital practices into school routines. The present study confirms these arguments, but it also extends them by showing how teacher performance improvement operates as a cyclical process in a madrasah context. Rather than relying on one-time training, the head of madrasah combined supervision, feedback, motivation, and follow-up evaluation. This indicates that teacher performance in the digital era is not improved merely through technology provision, but through sustained leadership practices that translate digital expectations into daily professional routines.

The second finding demonstrates that transformational leadership was implemented through idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. This finding aligns with Ramos (2025), who argues that transformational leadership enhances school performance through role modelling, shared vision, teacher empowerment, and professional commitment. It is also consistent with Kustomo (2025), who explains that digital management in educational institutions requires leaders who are capable of integrating technological change with organizational culture and human resource development. However, the present study provides a more specific contribution by revealing how the four dimensions of transformational leadership were enacted in an Islamic madrasah setting. The head of madrasah did not only communicate digital transformation as a technical agenda, but

framed it as part of institutional responsibility, pedagogical improvement, and collective professional growth. This differs from studies that tend to discuss transformational leadership as a general leadership style without sufficiently explaining its field-level enactment. In this study, transformational leadership appeared as a practical sequence: the leader built credibility through example, articulated a digital vision, encouraged teachers to innovate, and provided differentiated assistance according to teachers' needs.

The third finding reveals that the implementation of transformational leadership was shaped by both enabling and constraining factors. Supporting factors included the commitment of the head of madrasah, collaborative work culture, committee support, parental participation, and the use of digital technology. In contrast, inhibiting factors included digital competence gaps, limited infrastructure, suboptimal communication, resistance to change, and differences in teacher readiness. This finding is in line with Shboul et al. (2024), who highlight the moderating role of digital leadership in connecting digital transformation with teacher performance, suggesting that leadership effectiveness depends on contextual conditions. It also resonates with Pane et al. (2024), who found that teacher performance in digital transformation is associated not only with leadership, but also with situational factors and teachers' capacity to deal with challenges. Nevertheless, the present study adds nuance by showing that barriers to digital transformation in madrasah are not only technical, but also relational and cultural. Unequal digital competence, different levels of readiness, and imperfect communication indicate that transformational leadership must operate adaptively. Therefore, the success of digital transformation depends on the leader's ability to negotiate between institutional aspirations and the real capacity of teachers and school resources.

The theoretical implication of this study lies in its contribution to the development of transformational leadership theory in the context of digital education and Islamic schooling. Existing literature has generally established that transformational leadership and digital leadership are associated with teacher performance, school effectiveness, and institutional improvement. However, this study shows that transformational leadership in the digital era should not be understood only as a set of abstract leadership dimensions. It functions as an integrated mechanism that connects moral example, vision communication, professional supervision, intellectual stimulation, individualized support, and stakeholder collaboration. This finding strengthens Al-Barki's (2026) argument that transformational leadership can improve school performance in digital transformation contexts, but it further specifies the mechanism through which this improvement occurs in a madrasah. The novelty of this study is therefore located in its case-based explanation of how

transformational leadership is translated into concrete practices within a religious educational institution. It contributes to the literature by positioning the madrasah not as a passive recipient of digital policy, but as an active institutional space where leadership, teacher performance, and digital adaptation interact dynamically.

The practical implication of this study is that heads of madrasah should design teacher performance improvement as a continuous and differentiated leadership process. Digital transformation should not be reduced to the introduction of platforms, applications, or administrative systems; it must be accompanied by mentoring, supervision, professional development, communication, and evaluation. Practically, madrasah leaders need to identify teachers' digital competence levels, provide peer-support mechanisms, strengthen collaborative work culture, and ensure that digital programs are communicated clearly and implemented gradually. The study also has institutional impact because it offers a model of leadership practice that can help madrasah manage technological change without losing their organizational and religious identity. Its contribution is not merely descriptive, but strategic: it shows that transformational leadership can become a bridge between digital modernization and teacher professional improvement. The broader impact is that madrasah-based education can become more adaptive, collaborative, and performance-oriented when digital transformation is guided by leadership that is visionary, supportive, and responsive to field-level constraints.

CONCLUSION

This study concludes that the most important lesson from the implementation of transformational leadership at madrasah is that teacher performance in the digital era cannot be improved merely through the provision of technology, but requires sustained leadership practices that combine role modelling, mentoring, academic supervision, motivation, evaluation, and individualized professional support. The findings show that the head of madrasah played a strategic role in translating digital transformation into concrete teacher development practices by building a shared vision, encouraging innovation, strengthening collaborative work culture, and assisting teachers with different levels of digital readiness. The main scholarly contribution of this study lies in its contextual explanation of how transformational leadership operates within an Indonesian Islamic madrasah, thereby extending the literature on educational leadership, teacher performance, and digital transformation beyond general school settings. The study also demonstrates that transformational leadership functions not only as a leadership style, but as an adaptive mechanism for managing institutional change, professional growth, and digital transition.

However, this study is limited by its single-case design, which restricts the generalizability of the findings to broader madrasah contexts. Future research should examine multiple madrasahs across different regions, apply comparative or mixed-method designs, and investigate how digital competence, organizational culture, and leadership sustainability influence teacher performance over time.

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