



Reimagining Leadership in Islamic Education: Transforming Madrasah Aliyah through Innovation

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Abstract :

The research originates from the issue of students' low academic performance, a shortage of educators, limited infrastructure, financial constraints, low motivation, and performance gaps, which lead to unequal learning outcomes and challenges in lesson planning. This study investigates the role of innovative leadership in enhancing educational quality, focusing on the strategies implemented by madrasah principals to improve teaching outcomes, school management, and student performance. The research employs a mixed-method approach using a sequential explanatory design. The population and sample consist of teachers and principals of Madrasah Aliyah in Indonesia. Data collection was conducted using questionnaires and interviews. Quantitative data were analyzed with the assistance of Lisrel software, while qualitative data were examined using the Miles and Huberman method. The findings indicate a positive and significant influence of innovative leadership on the quality of education. Integrating quantitative results from SEM analysis with qualitative insights from interviews provides a comprehensive understanding of how leadership influences education quality, highlighting that the creativity of madrasah principals in leadership contributes significantly to improving graduate quality, educator quality, the learning process, school management, and overall educational outcomes. This study's implications show that applying innovative leadership that integrates quantitative and qualitative data can improve the quality of education overall.

INTRODUCTION

Educational research often focuses on measurable indicators such as student performance and graduation rates to assess the quality of education (Newton et al., 2022; Rodríguez et al., 2022; Sarrico, 2022). However, data like this alone does not illustrate the whole aspect of how leadership affects those outcomes. In the context of Islamic madrasahs, especially Madrasah Aliyah, leadership plays an important role in shaping educational practices, but its impact cannot always be measured by conventional metrics (Ahsan, 2024; Lines et al., 2022; Mincu, 2022). Statistically, performance metrics show trends in academic achievement and institutional progress (Alam & Mohanty, 2023; Alsariera et al., 2022; Hooda et al., 2022). However, qualitative elements such as the leadership style of madrasah heads, teacher motivation, and institutional value alignment can provide deeper insight into the mechanisms behind these outcomes (Harinurudin et al., 2025; Rohmatulloh et al., 2023; Zaqiah et al., 2024). Combining these two data types allows for a more in-depth examination of leadership effectiveness. Therefore, the intersection between quantitative trends and qualitative experience is essential to understanding how leadership can drive improvement in various aspects of education.

Previous research on educational leadership has often used quantitative or qualitative methods separately, each providing valuable insights (Chen & Cheng, 2022; Hendren et al., 2023; Leko et al., 2021). Quantitative studies typically use surveys to measure leadership styles and their impact on academic performance, with statistical methods such as Structural Equation Modeling (SEM) to test the relationship between leadership and educational outcomes. For example, research shows a positive correlation between transformational leadership and student achievement (L. Li & Liu, 2022; Y. Li & Karanxha, 2024; Nurabadi et al., 2021). In contrast, qualitative research such as case studies and interviews delve into the first-hand experiences of teachers and administrators, providing a richer understanding of how leadership is applied in the daily lives of schools (Kesim et al., 2025; Lopres et al., 2023; Wu & Gao, 2025). However, these two approaches often run separately, resulting in incomplete insights. By integrating the two approaches, this research fills in the gaps and provides a more holistic understanding of how leadership affects the quality of education. The mixed method approach makes it possible to analyze both aspects simultaneously.

Although quantitative data have shown a link between leadership and educational outcomes, these data often cannot explain the underlying factors why certain leadership styles are successful or not. In contrast, qualitative research delves into contextual factors, such as teacher perceptions and school culture, but cannot measure how much leadership affects educational outcomes. The challenge lies in the complexity of the educational environment, where leadership affects measurable outcomes, such as academic achievement, and non-measurable aspects, such as school climate and teacher satisfaction. This research aims to fill a gap that cannot be fully answered with quantitative or qualitative methods alone. This research focuses on understanding the impact of innovative leadership in Islamic madrassas and how such leadership affects not only measurable academic performance but also educators' personal and professional experiences. The mixed-methods approach allows for exploring both aspects simultaneously, providing deeper insights.

This research introduces an innovative mixed-methods design to explore the influence of innovative leadership on the quality of education in Madrasah Aliyah. By integrating quantitative and qualitative data, this study transcends the limitations of traditional studies that use a single method. Explanatory sequential design, in which quantitative data is collected first to establish patterns and followed by qualitative data collection to unearth the underlying mechanisms, allows for a more comprehensive understanding of leadership influence. The uniqueness of this research lies in the integration of Structural Equation Modeling (SEM) to analyze statistical relationships, which is combined with in-depth interviews and observations to further understand the strategies and challenges faced by school leaders. This mixed-methods approach provides a unique opportunity to examine how leadership influences measurable educational outcomes and shapes social and cultural dynamics in schools. By combining these two types of data, this study provides a new perspective on how leadership can be optimized in an educational context.

This study adopts a mixed-methods design to explore innovative leadership's influence on the education quality in Madrasah Aliyah. The purpose of this study is to explain how leadership affects the measurable academic outcomes and experiences experienced by educators. This study will use an explanatory sequential design, starting with quantitative data collection using structured surveys to measure leadership and

education quality, followed by qualitative data collection through interviews and observations to understand the strategies and contextual factors that play a role. Quantitative data will be analyzed using Structural Equation Modeling (SEM) to test the relationship between leadership and the quality of education. This mixed-methods approach allows for a more comprehensive understanding of how leadership affects education and offers valuable insights into the theory and practice of educational leadership.

RESEARCH METHOD

This research is located at Madrasah Aliyah Samarinda City, a contextually relevant Islamic educational entity, to investigate education quality issues, including academic aspects, educator resources, infrastructure, and management. The choice of this location was crucial because of the unique dynamics of madrasahs that integrate the national curriculum with religious education, providing a rich study landscape for analyzing the role of innovative leadership in this specific context. The study adopts a mixed-methods approach with a sequential explanatory model, where the quantitative component has a higher priority than the qualitative component (Ahmadi et al., 2022; Haynes-Brown, 2023; Younas et al., 2023). Quantitative data, which is analyzed using *Structural Equation Modeling* (SEM), provides an initial insight into the influence of innovative leadership. Meanwhile, qualitative data, which involves interviews and observations, allows for a more in-depth exploration of the strategies implemented by madrasah heads (Bazen et al., 2021; Chai et al., 2021; Lim, 2024). The flow of the research is comprehensively illustrated in the image below.

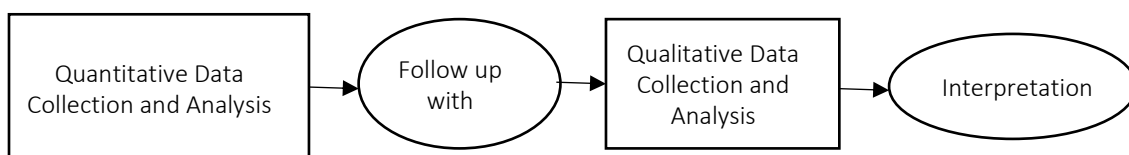


Figure 1. Sequential Explanatory Research Model

Data collection in this study was carried out through a survey method using a structured questionnaire instrument. This method is justified by its efficiency in collecting information from many respondents (sample of 174 people) from a population of 320 teachers of Madrasah Aliyah Samarinda City, which is essential to building a robust statistical database. The questionnaire was carefully designed to measure two key variables: innovative leadership (X), which was operationalized through 8 indicators, and quality of education (Y), which consisted of 17 indicators. The data collected are numerical, recorded in a Likert scale response format, allowing for quantification of respondents' perceptions of innovative leadership levels and evaluation of Education quality (Owan et al., 2022; Ponsiglione et al., 2022; Zainal & Mohd Matore, 2021). The relevance of this data lies in its ability to identify relationship patterns between variables and systematically analyze innovative leadership's influence. Thus, the data obtained through questionnaires is fundamental to conducting inferential statistical analysis and testing research hypotheses empirically.

The data analysis in this study involves both quantitative and qualitative approaches. Structural Equation Modeling (SEM) was carried out for quantitative data using Lisrel 8.8 software. The selection of SEM is justified by its superior ability to analyze complex causal relationships between latent and observed variables simultaneously, allowing for comprehensive theoretical model testing (Fu et al., 2024; Masud et al., 2024; Mou et al., 2025). The initial stage of quantitative analysis involves confirming the validity and reliability of the instrument through loading factors, Composite Reliability (CR), and Average Variance Extracted (AVE). Once the measurement model has proven valid and reliable, the analysis proceeds with structural hypothesis testing, measuring the magnitude of the influence between variables through path coefficients and t-statistical values. Meanwhile, qualitative data were analyzed using the Miles Huberman framework in Karmina et al. (2021), including data collection, display, condensation, and validation. The integration of these two types of data, by comparing quantitative findings with qualitative insights, aims to provide a holistic and in-depth understanding of the dynamics of innovative leadership in influencing the quality of education.

RESULT AND DISCUSSION

Result

The Influence of Innovative Leadership on the Quality of Education

This section presents the findings of research outlining the significant impact of innovative leadership on the quality of education in Madrasah Aliyah. This impact is not only limited to improving managerial aspects but also includes substantive improvements in students' teaching and learning processes and academic achievement. Rigorous quantitative data analysis reveals strong empirical evidence regarding the positive and substantial relationship between the two variables. This is methodologically supported by the consistency of the carefully tested indicators' validity and the measurement instruments' high reliability, ensuring the findings' accuracy and reliability. Furthermore, as a crucial methodological step, hypothesis testing was carried out to confirm the influence of innovative leadership on the quality of educational services, providing a solid foundation for practical and theoretical implications.

Testing of the validity of innovative leadership (X) and quality of education (Y) was carried out using *Structural Equation Modeling* (SEM) analysis. The SEM approach was carefully chosen given its ability to test complex relationships between latent and observed variables simultaneously, thus allowing for the evaluation of robust theoretical models considering various quality dimensions. The analysis results significantly confirm that innovative leadership has a substantial predictive capacity for the quality of education, indicating that improvements in innovative leadership tend to be followed by improvements in the overall quality of education that are measurable and not just accidental. These findings strongly support the initial hypothesis that strategic leadership behaviors, such as initiatives for curriculum reform, adaptation to changes in educational technology, and the empowerment of teaching staff in developing innovative methods, contribute significantly to improving teaching quality and student learning outcomes. More details regarding the structural model and path coefficients are presented in Figure 2 below.

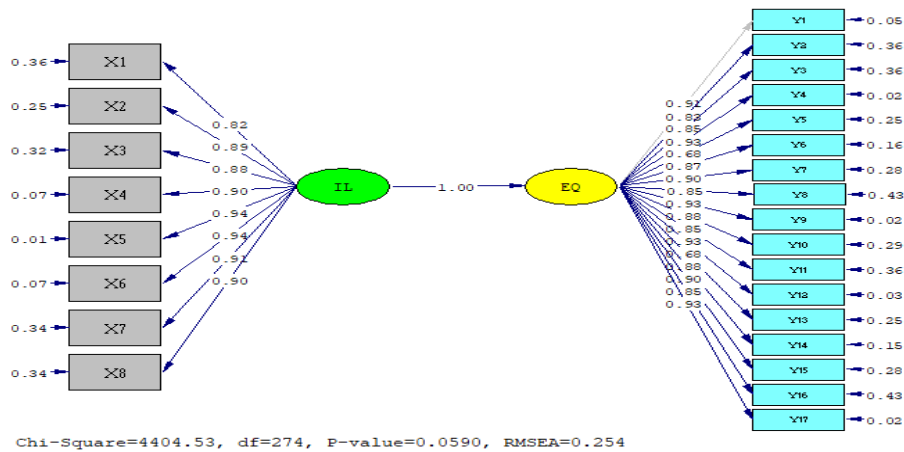


Figure 2. Validity Test Results for Innovative Leadership and Quality Education

Based on Figure 2, it is clear that all indicators used to measure the variables of innovative leadership (X) and educational quality (Y) show a *loading factor* value that exceeds 0.5. This *high loading factor* value, as in the X1 indicator, which reaches 0.82, and the Y17 indicator of 0.93, indicates that each question item strongly represents its latent construct. This shows that the research instrument has excellent validity, ensuring that the studied variables are measured appropriately and accurately. Furthermore, the reliability of the instrument, which reflects the consistency and stability of the measurements, was validated through the recapitulation of *the Construct Reliability* (CR) and *Average Variance Extracted* (AVE) values, as well as *the Error Variance* (E), *Standardized Loading Factor* (SLF), and *Loading Factor* (L) values, as detailed in Table 1.

Table 1. Reliability Test Results for Variables X and Y

Variable X	Total	SLF2	CR	AVE	Variable Y	Total	SLF2	CR	AVE
L	7,18	51,55	0,97	0,79	L	15,26	232,87	0,99	0,83
E	1,76				E	2,82			
L2	6,45				L2	13,76			

Table 1 shows the variable X (Innovative Leadership) having a *Construct Reliability* (CR) value of 0.97, significantly exceeding the recommended threshold of 0.7. In addition, the *Average Variance Extracted* (AVE) value of variable X is 0.79, also higher than the threshold of 0.5. The achievement of these values consistently shows that the indicators that measure innovative leadership have excellent internal reliability and effectively capture the latent construct variants to be measured. Similarly, the Y variable (Quality of Education) showed a very high level of reliability with a CR value of 0.99 and AVE of 0.83. These figures substantially exceed the established criteria, confirming that the measurement of education quality is very stable and consistent.

This proven reliability and validity form a solid basis for the subsequent interpretation of the hypothesis test results, which will be visually illustrated in Figure 3.

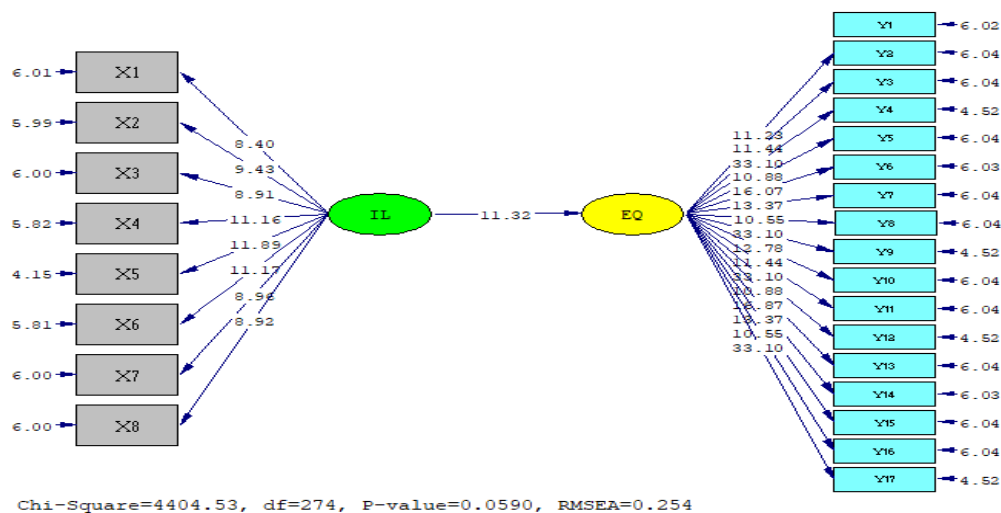


Figure 3. T-Test Results for the Influence of Innovative Leadership on Education Quality

Hypothesis testing, a crucial stage in this analysis, is carried out by analyzing factor *loadings* and t-values. The factor load indicates the strength of the relationship between the indicator and its latent construct, while the t-test value determines the statistical significance of the relationship. As shown in Figure 3, all indicators for the innovative leadership variable (X) and the educational quality variable (Y) show a t-test value of > 1.95, which is the standard threshold for significance at a 95% confidence level. This indicates that each indicator contributes significantly to measuring its respective variables. Furthermore, structural relationship analysis showed that the influence of variable X (Innovative Leadership) on variable Y (Quality of Education) resulted in a t-test value of 11.32. This figure substantially and convincingly exceeds the threshold value of 1.95, thus confirming the existence of a meaningful and statistically significant impact. These findings explicitly show that innovative leadership has a substantial and positive contribution to improving the quality of education in Madrasah Aliyah Samarinda City.

Innovative Strategies of Madrasah Heads

Madrasah heads implement innovative strategies that effectively improve the quality of education. This innovation focuses on strengthening the vision and mission of madrasas, improving the quality of graduates, educators, learning processes, and overall madrasah management. Concrete initiatives include strategic partnerships, systematic academic strengthening, comprehensive Qur'an literacy programs, and the organization of ongoing workshops for teachers. In addition, providing excellent service and the cycle of supervision and self-evaluation ensure continuous adaptation and quality improvement. These strategies holistically reflect the commitment of madrasah heads in responding to internal and external dynamics to improve the quality of education. Based on the results of hypothesis testing, in-depth findings on innovative leadership in improving the quality of education are summarized in Table 2.

Table 2. Summary of Qualitative Data Analysis

No.	Interview Guidelines	Verification Results
1	What is the role of the madrasah principal in implementing innovations to improve educational quality?	Alignment of vision and mission, partnerships with professionals, and strengthening entrepreneurship.
2	What efforts are made by the madrasah principal to enhance the quality of graduates?	Strengthening academic performance and providing Quranic literacy services.
3	How does the madrasah principal work to improve the quality of educators?	Facilitating training, professional development, rewards, and excellent service delivery.
4	What initiatives does the madrasah principal take to enhance the quality of learning processes?	Conducting educational supervision and regular evaluations.
5	What steps does the madrasah principal take to improve madrasah management quality?	Performing self-assessments and continuous improvements in the madrasah.

Based on Table 2, key innovations implemented by madrasah heads have consistently proven to be effective in facilitating the strengthening of the vision and mission of madrasahs, encouraging improvement in the quality of graduates, educators, and learning processes, and optimizing madrasah management for the achievement of significant educational innovation milestones. The development of this madrasah includes the implementation of strategic professional partnerships, such as actively collaborating with leading universities or relevant industry practitioners. The collaboration is designed to enrich the curriculum with a contemporary perspective, provide students with practical experience through internship programs or joint projects, and open up opportunities for teachers to upskill in new areas of expertise.

Discussion

This research produced findings on innovative leadership's influence on the education quality at Madrasah Aliyah Samarinda. The empirical evidence from this study conclusively shows that innovative leadership has a positive and significant impact on the quality of education. The validity of these findings directly confirms that innovative leadership is a crucial factor in advancing overall educational attainment. Furthermore, from the field data, various innovative strategies were proactively implemented by the heads of madrasahs. These strategies include strengthening fundamentals such as the vision and mission of the institution, continuous improvement of the quality of graduates, developing the professionalism of educators, comprehensive optimization of the learning process, and continuous improvement of the madrasah management system. These findings collectively outline the practical and adaptive approaches that have been applied, thus providing a holistic picture of the fundamental mechanisms of innovative leadership in encouraging the improvement of the quality of education in the institution.

Departing from the exposure of the findings that have been revealed, this study significantly enriches the existing treasure of literature on innovative leadership, especially in the madrasah education landscape. The proactive strategy of madrasah heads in establishing external professional partnerships and instilling an entrepreneurial spirit in the institutional environment is in line with the view that adaptive and externally oriented leadership is essential for organizational innovation (Ahsan, 2024; Lines et al., 2022; Rodríguez et al., 2022).

Furthermore, academic strengthening balanced with Qur'anic literacy programs specifically shows innovative adaptations harmonious with religious institutions' fundamental values. It expands the understanding of integrating quality improvement models with the cultural and spiritual identity of the institution (Alam & Mohanty, 2023; Harinurdin et al., 2025; Hooda et al., 2022). In addition, initiatives to improve the quality of educators through continuous training, professional development, and learning supervision align with the literature's emphasis on the central role of leaders in encouraging the Continuous professional development of teachers for pedagogical innovation (Ahsan, 2024; Hooda et al., 2022; Lines et al., 2022). Thus, this research fills a significant gap by presenting specific and in-depth empirical evidence from the context of madrassas in Indonesia. This domain was previously underrepresented in the global research narrative.

Listening to the research findings that have been revealed, this empirical evidence can be analyzed in depth through the lens of transformational leadership theory and innovative organizational culture. The role of madrasah heads in inspiring the strengthening of the institution's vision and mission, as well as facilitating the professional development of educators, clearly reflects the pillars of transformational leadership (Alsariera et al., 2022; Harinurdin et al., 2025; Hooda et al., 2022). These strategic actions improve operational efficiency and fundamentally encourage individuals' intrinsic motivation and creativity beyond the confines of their routine tasks. Furthermore, the initiative of madrasah heads to instill an entrepreneurial spirit and consistently conduct continuous self-evaluation can be interpreted as a systematic effort to form an adaptive and pro-innovation organizational culture (Mincu, 2022; Newton et al., 2022; Sarrico, 2022). This kind of culture effectively stimulates all personnel to dare to take initiative, explore new ideas, and quickly adapt to the dynamics of change. The crucial theoretical contribution of this research lies in demonstrating how the fundamental principles of transformational leadership and innovative culture interact and manifest specifically in the context of madrassas rich in religious values. This reality confirms the relevance of the theoretical framework, which can be applied effectively outside the scope of secular education, thus enriching the understanding of leadership innovation in religious institutions.

From the discussion that has been unraveled, this study convincingly confirms innovative leadership's central role in improving the education quality in Madrasah Aliyah. In particular, the qualitative findings presented in detail present a rich narrative of how madrasah heads proactively implement multidimensional strategies, from strengthening institutional vision to optimizing management to drive innovation. This research has significant additive value to the existing corpus of literature, especially by presenting contextual and specific empirical evidence from the madrasah environment. This area was previously relatively underexplored in academic discourse. Its fundamental contribution lies in a deeper understanding of the practical mechanisms by which innovative leadership operates within the religious education ecosystem. This provides substantial support for transformational leadership theories and innovative cultures and reveals a unique adaptation in cultivating religious character through innovation. By practical implication, the results of this study offer a valid operational model for other madrassas that seek to adopt a leadership approach oriented to innovation and quality improvement in a sustainable manner. Therefore, this research is an essential foundation for the initiation of future studies and the formulation of more relevant policies in the context of the development of Islamic education.

CONCLUSION

This study fundamentally highlights the urgency of improving the quality of education in Madrasah Aliyah, especially related to student's academic achievements and management challenges that are still being faced. The research findings conclusively indicate that innovative leadership has a positive and substantial impact on the quality of education. Further field data revealed various proactive strategies implemented by the head of the madrasah, including strengthening the institution's vision, improving the quality of graduates and educators, optimizing the learning process, and improving overall management. The significant contribution of this research lies in enriching the literature with contextual empirical evidence from madrasahs. This area has been underexplored, providing an in-depth understanding of innovative leadership mechanisms in the religious education ecosystem. This reinforces transformational leadership theories and innovative cultures and reveals unique adaptations in forming religious character. Therefore, the results of this study present a valid operational model for other madrasahs that seek to adopt a leadership approach oriented to innovation and quality improvement sustainably, as well as being an important foothold for further study and strategic policy formulation in the development of Islamic education.

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