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Transformational Leadership of Kyai in Digital Learning at Indonesian Pesantren

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Abstract

This study examines the dynamic leadership of the Kyai in Kampung Mlangi, Special Region of Yogyakarta. It highlights the transition from traditional to transformational leadership. Founded in 1936 by the late KH. M, the foundation aims to reduce educational disparities and promote the teachings of Ahl al-Sunnah wa al-Jama'ah. A year after Indonesia's independence, Kyai M passed away after performing wudu to perform the Dhuhur prayer. Following Kyai M's passing, this educational institution was continued by his son, KH. S M. Under the guidance of KH. S M, the Assalafiyyah Islamic boarding school continued to flourish and consistently taught classical Islamic texts to enrich the students' understanding of Islamic cultural heritage. In its efforts to spread the teachings of Islam, the Assalafiyyah Islamic boarding school faces a series of challenges, including exclusivity in its missionary work, rigidity in the delivery of teachings, and the traditional customs and educational system of the boarding school. The Salafiyah boarding school is renowned for its educational system, which remains traditional in nature. The arrival of these four sons of the Kyai subsequently brought about a transformation in the traditional pesantren education system towards a modern, globalised digital pesantren education whilst maintaining *Salafiyah* values. The leadership of these four sons of the Kyai challenged the traditional education system, which was lacking in modernity, demonstrating how Kyai leaders were able to overcome the rigid and outdated obstacles of traditional education to innovate and reform educational policies. This study contributes to the discourse on quality education (SDG 4), leadership and innovation to strengthen institutions (SDG 16), and the reduction of inequalities (SDG 10).

Introduction

Kyais are figures who play a key role in the pesantren education system, determining the direction of educational policy. The transformation of pesantrens is determined by the Kyai as the highest decision-maker within the pesantren. The role of the kyai extends beyond the field of education; they also make a significant contribution to the socio-economic development of the community by acting as community leaders. Every statement made by a kyai carries broad political influence within the community. A case study on this can be found at the Assalafiyyah Mlangi Sleman pesantren, where the kyai play a role not only in developing educational human resources but also in developing the human resources of the surrounding community by acting as community leaders (Elista, 2025). During the transformation process, there are often those who accept change and those who do not; this is the main challenge that kyais must face in transforming pesantren education (Müller et al., 2024).

The Assalafiyyah Mlangi Islamic boarding school, founded by the late KH. M, is situated in the centre of Mlangi Village, a historic village home to many Islamic students in Yogyakarta. It not only teaches religious knowledge but also instils a spirit of national struggle (Assalafiyyah Mlangi, 2026). This institution aims to provide a modern perspective amidst the strong and prevalent traditional views found in Salafi boarding schools (Sugari et al., 2025).The transition from traditional Islamic education to modern Islamic education presents a major challenge in changing the perspectives and mindsets of pesantren educators (Saputra et al., 2025). It is here that the kyai plays a key role in transforming traditional education into modern Islamic education.

Although prior research has significantly advanced our understanding of Islamic school leadership by framing principals as socio-religious curators (Brooks et al., 2020) and outlining core values like *shura* (consultation) and *maslaha* (common good) (Brooks et al., 2019) these studies predominantly focus on modern Islamic schools (*sekolah/madrasah*) or *pesantren* in general, without adequately addressing the unique institutional and ideological dynamics of traditional Salafi *pesantren*. Similarly, while the transformative role of kyais in adopting digital technologies such as e-learning platforms has been noted in progressive *pesantren* (Abidin et al., 2025; Bahri & Najiburrahman, 2024), this body of work largely overlooks contexts where resistance to digital change is most acute due to concerns over preserving religious authority and traditional knowledge transmission.

Consequently, there is only limited empirical understanding of how *kyai* leadership navigates the tensions between preserving Salafi tradition and embracing digital learning transformation, particularly in contexts where such change may be perceived as threatening core institutional values. To address this gap, this study focuses on Pesantren Assalafiyyah Mlangi, a traditional Salafi *pesantren* in Yogyakarta that seeks to blend its strong traditional foundation with modern education (Sugari et al., 2025). Here, the kyais face a unique challenge: transforming educational policies and practices towards a digitally oriented, globally aware Islamic education without eroding the *pesantren's* traditional authority and spiritual ethos (Saputra et al., 2025). This study is therefore crucial as it explores the underexplored process and strategies of this transformation. Accordingly, this research is

guided by the question: 'How has the transformation of *kyai* leadership navigated digital learning in Pesantren Assalafiyyah Mlangi, Indonesia?'

This study contributes to the discourse on quality education (SDG 4), leadership and innovation to strengthen institutions (SDG 16), and the reduction of inequalities (SDG 10).

Literature Review

Traditional Leadership versus Transformational Leadership

Traditional leadership is an old style of leadership influenced by the power of tradition and culture in the surrounding environment (Sliwka et al., 2024)Traditional leaders are often seen as guardians of culture and heritage. They are also significant political figures within their communities (Nyathi et al., 2025). This leadership is upheld within society to ensure that traditions and culture do not disappear from community life. This contrasts with transformational leadership, which emphasises change and progress in the process of achieving organisational goals (Ibrahim et al., 2023). The fundamental difference between traditional and transformational leadership lies in the orientation of power and the approach to change. Traditional leadership emphasises control, structure and adherence to rules. Decision-making is centralised in the leader, whilst subordinates act as implementers. This model tends to maintain the status quo and is less adaptable to rapidly changing environmental dynamics. In contrast, transformational leadership is oriented towards change and innovation. Leaders act as agents of change who encourage creativity and the active participation of organisational members. Transformational leadership is positively correlated with higher job satisfaction, organisational commitment, and performance. It is these values that Islamic boarding schools require in undertaking institutional reform.

Some of the key components underpinning transformational leadership include Idealised influence, Inspirational motivation, Intellectual stimulation and Individualised consideration (Bass & Riggio, 2006; Hussain et al., 2025; Oktaysoy et al., 2025) These four indicators then serve as the basis for assessing whether the leadership process in question is characterised by transformational leadership. The transformational leadership approach emphasises change within the organisation, whereby leaders influence their followers through motivation and encouragement. This theoretical approach aligns with the phenomenon of this study, in which the kyai is endeavouring to bring about change in the traditional pesantren education system towards modern, digital-based education. The integration of transformational leadership theory with digital learning will strengthen the author's analytical framework in examining this transition.

Traditional Learning versus Digital Learning

Pesantren are the oldest Islamic educational institutions in Indonesia, having evolved from local religious traditions and culture. Historically, pesantren have served not only as centres of education, but also as centres for the propagation of Islam and the moral guidance of the community (Dhofier, 2011).Its institutional structure is distinctive, with the Kyai as the central figure who holds both scholarly and spiritual authority. This pattern of leadership legitimacy can be understood through the typology of charismatic and traditional authority proposed by Max Weber (Weber, 2014). In the context of Islamic boarding schools, a Kyai's authority does not stem solely from an administrative position, but rather from moral and scholarly recognition by the community of students and the wider public.

In terms of the curriculum, traditional Islamic boarding schools emphasise the mastery of Islamic studies through the study of classical Islamic texts, using methods such as sorogan and bandongan. The aim of their education is not merely the transfer of knowledge, but also the internalisation of moral values and the development of religious character (Hanafi et al., 2021). The relationship between the Kyai and the santri is personal and paternalistic, meaning that character education is deeply embedded within the institutional system. On the other hand, e-learning is an interactive online learning method that can boost pupils' interest in learning within an enjoyable environment (Xi, 2024)In this digital age, schools are required to transform their teaching methods as traditional approaches evolve into dynamic, technology-driven ones. E-learning, which encompasses a wide range of online tools and platforms, enriches and tailors the learning process to the specific context. However, the lack of a standardised yet flexible framework for e-learning in schools leads to inconsistent implementation and evaluation, thereby hindering the

development of integrated policies and the achievement of programme outcomes in schools (Abusamra et al., 2025). In response to criticism that digital learning is beginning to supplant traditional learning, there are five aspects that need to be considered in digital learning, namely: 1) technology-based digital learning; 2) delivery-system-oriented; 3) communication-oriented; 4) education-paradigm-oriented; and 5) change-oriented. This classification highlights the diverse nature of e-learning and its ability to address various educational challenges (Abusamra et al., 2025; Pellas & Kazanidis, 2015; Rodrigues et al., 2019)

Digital learning systems are heavily reliant on technological sophistication. Without technology, these systems cannot function optimally. Criticism of this technological reliance has also emerged, alongside concerns about what would happen if the internet were to fail and no longer support the learning process in the classroom. This discussion has subsequently led to the identification of three learning methods: traditional learning, digital learning and hybrid learning. Digital learning cannot entirely replace traditional learning methods in the school learning process. A similar case study was also found at the Asssalafiyyah Mlangi Islamic boarding school, which cannot completely abandon traditional learning methods in the life of the boarding school. This has subsequently sparked a debate regarding the effectiveness of digital learning at the Asssalafiyyah Mlangi Islamic boarding school. How can the leadership of the kyai (religious leader) carry out a digital education transformation whilst maintaining traditional learning values within it.

Research Methodology

This study employs a qualitative research method using a case study approach at the Assalafiyyah Mlangi Islamic boarding school. A case study is a method used to explore and analyse a problem or issue by selecting one or more specific cases (Cresswell, 2013). This is achieved through in-depth interviews, a literature review, field observations, and document analysis. This study aims to contribute to a broader discussion on the transformational leadership of Kyai and digital school services within an Islamic context, providing valuable insights for future research and practice in similar contexts. Access to data was obtained through regular channels following the submission of a research proposal, which was subsequently approved by the Assalafiyyah Mlangi Islamic Boarding School. This approach was adopted to avoid any conflict of interest.

This study then based its analysis on data collected through in-depth interviews as the primary data source, alongside observation and document review. The study was conducted from the third month of 2024 until March 2026. We interviewed 16 informants over a period of 24 months, comprising 1,060 sessions. The details of the data collection from the informants are shown in Table 1. The sampling technique used in this study was purposive sampling, which is a method of selecting a sample based on specific criteria (Magnone & Yezierski, 2024). The criteria used to select informants included: 1) active involvement in the digital learning process at Pesantren Assalafiyyah Mlangi; 2) willingness to participate in an interview; 3) direct impact on the kyai's leadership process at Pesantren Assalafiyyah Mlangi and the digital learning process; and 4) selection of informants aged over 18 years. Following approval, the research was conducted using semi-structured and open-ended interview questions to guide the interview process.

The interviews were conducted in Indonesian; all interviews were subsequently audio-recorded, translated into English, and transcribed. The analysis was based on these components to formulate the findings. In some cases, interview notes were also used to help the researcher organise the ideas that emerged during the interview process. Interviews were conducted with four religious leaders, students, the head of the boarding school organisation, and the head of the boarding school's quality assurance department.

Data collection took place over a period of 24 months, from March 2024 to March 2026. Total fieldwork hours amounted to 2,120. This figure represents the total time spent by field researchers, including formal semi-structured interviews, participant observation, informal discussions, attendance at learning activities, religious studies and document analysis. Consequently, the reported duration does not refer solely to the time spent on interviews. Formal interview sessions refer to scheduled semi-structured interviews with each participant, lasting approximately 90–120 minutes. In addition to formal interviews, longer-term participation through participant observation and informal interactions enabled the researchers to understand the participants' everyday practices, verify emerging findings and enhance the credibility of the research through data triangulation and member checking. Detail information about data collection activities in Table 1.

Table 1
Data collection activities

Number	Type Informant	Number of informants	Formal interview sessions	Avarage Duration per Interview	Participant Observation	Informal Discussions	Document Review	Total Field Engagement
1.	Religious leaders	4	24	2 hours	520 hours	40 hours	16 hours	600 hours
2.	Students	10	60	2 hours	640 hours	120 hours	40 hours	800 hours
3.	Head of the dormitory organization	1	12	2 hours	320 hours	24 hours	16 hours	360 hours
4.	Head of the dormitory quality assurance department	1	12	2 hours	320 hours	24 hours	16 hours	360 hours
Total		**16**	**108**		**1.800 hours**	**208 hours**	**88 hours**	**2.120 hours**

Source: analysed by the authors, 2026

Data Analysis Process

The data obtained was then categorised into sub-themes using a thematic analysis approach (Braun & Clarke, 2006). This analysis process was then carried out in stages through the following steps: 1) familiarisation with the research data, 2) initial coding, 3) identification of themes, 4) review of themes, 5) defining and naming themes, and 6) producing a report. The first stage involved transcribing the data, reading the data repeatedly and noting down initial ideas regarding kyai leadership and digital learning in pesantren. The second stage involved open coding, systematically coding points of interest from the data across the entire dataset, and gathering items related to each code. The third stage involved grouping codes into potential themes and collecting all data related to these potential themes, as in Fig. 1.

Source: analysed by the authors, 2026

Codes with similarities were grouped through axial coding into several main categories, as shown in Table 2. Entering the fourth stage, we reviewed whether any themes related to the extracts already coded at level 1 and the entire level 2 dataset, resulting in a thematic map of the analysis. The fifth stage involves conducting repeated and continuous analysis to refine the details of each theme and the overall narrative presented by the analysis, resulting in clear definitions and naming for each theme. The sixth stage is the final analysis, which involves selecting clear and compelling examples of quotations. The final analysis of the selected quotations reconnects the analysis with the research questions and the literature, resulting in a scientific report of the analysis.

Table 2
Coding Categories

Number	Initial code	Category
1.	*We also have the Assalafiyah Academic Information System (SIAKAD), which facilitates educational services for students and parents. Furthermore, the children here no longer use cash; it's cashless and paperless. They use laptops and tablets. So, if there's an exam, it's taken on the spot; if all the questions are multiple-choice, then the results can be issued immediately. Furthermore, the finance system is cashless, so the children use this card for their snacks. It's a barcode-based card, so there's no circulation of cash; everything follows the same standard.*	Idealized Influence
2.	*Pesantren have always had both informal and formal mechanisms capable of resolving various issues that arise, for example through council meetings, consultations amongst the ustads, and then consultations amongst the teachers; whereas informal mechanisms offer far more opportunities for casual chats over coffee, which occur more frequently in pesantren, and it is there that serious and significant matters are usually discussed, including the issue of the boarding school's digitalisation (Interview with informant, 2024).*	Inspirational Motivation
3.	*What's more, the children here no longer use cash – it's cashless and paperless; they use laptops and tablets. So when it's exam time, the exams take place straight away; if all the questions are multiple-choice, then the results can be issued immediately. Furthermore, the finance system is cashless, so the children use this – our card to buy snacks. It's a barcode-based card, so there's no circulation of cash; everything follows the same standard. Furthermore, the standard for funding is the same; so meal allowances are the same regardless of which complex you're in, because the unit organising it is the same it's all managed under the BUMP (Pesantren-Owned Business Entity) we simply distribute the food. For example, in each dormitory complex, there are four canteens.*	Intellectual Stimulation
4.	*It has happened before, and it will be resolved through consultation, whereby the opinion with the strongest basis will be chosen and accepted by everyone. It's a matter of the best argument prevailing. Every week we have to resolve these matters because they concern the names of the students' guardians; otherwise, the students will be the ones to suffer. However, the solution to the problem doesn't have to be found today; sometimes it takes time to investigate and identify the issue, and to gather input from various parties, but it will still be dealt with. As for decision-making, it depends on the nature of the problem: if it concerns the Board of Caretakers, or if it relates to the boarding houses, then it is usually resolved by each respective boarding house (Interview with informant, 2024).*	Individualized Consideration

Source: analysed by the authors, 2026

The next stage involved selective coding, whereby all these categories were developed into three main themes that describe the leadership process in implementing digital learning transformation, namely: 1) Transformation of digital learning competence development 2) Challenges in implementing digital learning and 3)Innovation in traditional learning towards digital learning. For example, informants' statements regarding the tahfid education programme at various school levels were subsequently included in the category 'development of digital learning competencies'. This category was then developed into the main theme, namely 'transformation of digital learning competency development'.

Data validation process

Source triangulation was employed to ensure the credibility of the data in this study. Data obtained from various informants namely religious leaders, students, the head of the boarding school organisation, and the head of the boarding school quality assurance department—was then processed and repeatedly verified to ensure data credibility. Comparing the perspectives of various informants enabled the researcher to gain a comprehensive understanding of the digital learning transformation in Islamic boarding schools. Following source triangulation, member checking was carried out. The initial interpretation results were then reconfirmed with several informants to ensure consistency between the analysis results and the real-life experiences they encountered during the digital learning transformation process at the school. Following the member checking process, peer debriefing was conducted. The results of the coding and theme development were discussed by two researchers with expertise in digital education and qualitative methods to minimise data interpretation bias.

Researcher's Reflection

The researcher is fully aware that, during the research, the researcher's position may influence the process of data collection and interpretation. In order to minimise such bias, the researcher implemented the following reflective methods: 1) writing reflective memos throughout the research process; 2) comparing interview results with field observations; 3) using source triangulation; 4) repeatedly checking with informants to ensure consistency between interpretations and the informants' actual experiences. The researcher also actively discussed findings with fellow researchers to maintain data credibility during the coding and interpretation of research findings. The researcher consulted with experts in digital learning and qualitative research methods to avoid research bias.

Result and Discussion

The history of the Assalafiyyah Mlangi Islamic boarding school began with a small mosque (mushola) where teachers and students studied together, which later came to be known as a pondok. Founded in 1936 by the late KH. M, the school's foundation aimed to bridge the educational divide and promote the teachings of Ahl al-Sunnah wa al-Jama'ah. A year after Indonesia's independence, Kyai M passed away after performing wudu to perform the Dhuhr prayer. Following Kyai M's passing, this educational institution was continued by his son, KH. S.M. Under the guidance of KH. S M, the Assalafiyyah Islamic Boarding School continued to develop and consistently taught classical Islamic texts to enrich the students' understanding of Islamic cultural heritage. The initial focus of this institution was the teaching of traditional or Salafi Islam.

The origins of this Islamic boarding school date back to 2012, when the Assalafiyyah Mlangi Foundation was officially established on 7 December 2012 by deed of incorporation (No. AHU-7867.AH.01.04.TAHUN 2012). This inauguration subsequently marked the beginning of a major transformation within the Assalafiyyah Mlangi Islamic boarding school organisation. All forms of traditional learning systems were gradually replaced by a modern, digital-based education system. Our findings indicate that the transformation within the pesantren from a traditional system to a digital one has been driven by the transformational leadership of the Kyai at Pesantren Assalafiayyah Mlangi. This is evident from several of our interviews, as outlined below.

Idealized Influence

Transformational leaders act in certain ways that set them as examples for their followers (Bass & Riggio, 2006a). In this context, the Kyai are admired, respected and trusted by their followers (the pesantren community) because they are regarded as possessing charisma and demonstrating exceptional ability, perseverance and determination in leading the pesantren. These characteristics are evident in the Kyai's leadership at the pesantren, as illustrated in the following excerpt from our interviews:

This pesantren, as an institution with distinctive characteristics compared to other institutions, is also highly dependent on the fact that the ultimate authority within the pesantren lies with the head (kyai). It rests with the kyai; the pesantren is usually more or less like a kingdom; for example, here at Assalafiyyah, we are now in the third generation since its founder, Mbah Kyai M was succeeded by his eldest son, the late KH. S.M.. As he had four sons, the current generation has four leaders (the council of leaders), who are the sons of Mbah Kyai M. It is this 'royal' system that makes the kyai so highly respected by his followers (Interview with informant, 2024).

Based on the results of these interviews, it can be seen that the pesantren system is akin to a monarchy, in which the kyai is held in the highest regard by his followers. All his commands are obeyed as a sign of extraordinary respect for the kyai's leadership within the pesantren. In Javanese, this obedience is often referred to as 'Sendiko Dawuh', which means 'I obey the command'. This was conveyed by the management of the Assalafiyyah Mlangi Pesantren in the interview as follows:

As for the policies all of them it's more of a centralised leadership style, so all policies are based on orders from the kyai; it's more of a top-down approach, you see, rather than bottom-up, in the pesantren. Yes, what's the Javanese term for it? *Sendiko Dawuh* (*I submit to the orders*) in the pesantren. *As for, say, a foundation, it must come from the inner circle of the family, from the kyai, and only then are there field implementers, departments, and directorates, with alumni from outside serving as professionals in their respective fields. So the involvement of external parties is already part of the on-the-ground management* of SIAKAD. *Assalafiyah Academic Information System (SIAKAD), which facilitates educational services for students and parents. Furthermore, the children*

here no longer use cash; it's cashless and paperless. They use laptops and tablets. This idea is input from our kyai to digitize Islamic boarding schools (Interview with informant, 2024).

Based on the results of these interviews, it is clear that the Kyai is indeed highly respected by his followers. His followers will always comply with his instructions, including his advice to use the SIAKAD (Assalafiyah Academic Information System). This finding reflects the implementation of the values of 'idealised influence', whereby a leader is considered to possess charisma, leading his followers to obey all his commands. In pesantren tradition, this is often referred to as 'seeking blessings', meaning that by obeying the Kyai's commands, his followers will receive blessings from their spiritual leader. It is this charisma that drives his followers to be obedient and motivated in developing the pesantren's digital system. From obeying these commands arises a sense of pride amongst his followers (the pesantren community) to continue innovating in the development of the pesantren's digital system.

This finding is consistent with the 'Idealised Influence' assessment indicator developed by Bass and Riggio (2006a), which states that the measurement of idealised influence is reflected in how a leader instils a sense of pride in their followers. This argument reflects the fact that the Kyai builds credibility by aligning his personal actions with institutional values, thereby encouraging his followers to trust all his actions. In contrast to traditional leadership approaches that merely adhere to religious commands, in this context the Kyai also encourages institutional innovation through the idea of pesantren digitalisation. The Kyai then follows this up by setting an example through his own behaviour in implementing pesantren digitalisation, for example through the pesantren's e-library service using the SIAKAD system.

Inspirational Motivation

Transformational leaders behave in ways that motivate and inspire those around them, by providing their followers with a sense of purpose and challenging work (Bass & Riggio, 2006a; Prasmiwardana et al., 2025). This is implemented by boosting team spirit, enthusiasm and optimism through teamwork and the involvement of members in the leader's activities. This form of involvement can be seen in the consultation mechanism between the Kyai and the pesantren community, as illustrated by the following interview excerpt:

Pesantren have always had both informal and formal mechanisms capable of resolving various issues that arise, for example through council meetings, consultations amongst the ustads, and then consultations amongst the teachers; whereas informal mechanisms offer far more opportunities for casual chats over coffee, which occur more frequently in pesantren, and it is there that serious and significant matters are usually discussed, including the issue of the boarding school's digitalisation (Interview with informant, 2024).

Based on the results of these interviews, it is clear that the internalisation of inspirational motivation is realised through formal and informal consultation mechanisms. The Kyai's leadership tradition in the pesantren relies more heavily on informal settings, such as coffee shops, to resolve issues whilst simultaneously internalising the Kyai's ideas to motivate his followers. In this context, the Kyai communicates the pesantren's vision and mission for the future. Rather than presenting the concept of digitalisation as a requirement, the Kyai prefers informal settings such as coffee shops to create a comfortable atmosphere for his followers. This relaxed process of inspirational motivation is more readily accepted by his followers, thereby strengthening Islamic education and expanding the da'wah network. This relaxed approach has proven effective in increasing members' acceptance of and willingness to learn new technologies in the field of education; although there were initial concerns amongst his followers regarding the concept of 'pesantren digitalisation', the Kyai's inspirational influence in the coffee shops has succeeded in boosting his members' confidence.

Intellectual Stimulation

Transformational leaders stimulate their followers' efforts to foster innovation and creativity through open discussion forums. Members' creativity is continually encouraged, and there is no criticism of their mistakes. New ideas and creativity are continually nurtured in the problem-solving process, and members are not criticised for having ideas that differ from those of the leader (Bass & Riggio, 2006a; Prasmiwardana et al., 2025). Evidence of this creativity and innovation in pesantren is evident in various changes to the educational system within the pesantren, as reflected in the following quotation:

What's more, the children here no longer use cash it's cashless and paperless; they use laptops and tablets. So when it's exam time, the exams take place straight away; if all the questions are multiple-choice, then the results can be issued immediately. Furthermore, the finance system is cashless, so the children use this our card to buy snacks. It's a barcode-based card, so there's no circulation of cash; everything follows the same standard. Furthermore, the standard for funding is the same; so meal allowances are the same regardless of which complex you're in, because the unit organising it is the same it's all managed under the BUMP (Pesantren-Owned Business Entity) we simply distribute the food. For example, in each dormitory complex, there are four canteens. Tahasus, Kitab in all four of them, everything is the same; if there's one canteen there, there's another one elsewhere; perhaps if there's a slightly larger canteen, the number of students is adjusted accordingly that's usually how it works, but the standard remains the same (Interview with informant, 2024).

Based on the results of these interviews, it is clear that the stimulation process does indeed involve giving followers the space to express their ideas and thoughts. This is reflected in a series of innovations within the educational service management system at the pesantren, such as the transition from a cash payment system to a cashless payment system. The learning process has shifted from manual methods to online learning using tablets or laptops. The provision of nutrition for pupils via a digital canteen system all these changes have been possible because each follower is given the space to express their ideas and concepts, thereby fostering continuous innovation. His followers are encouraged to experiment with digital learning platforms, develop digital educational content and collaboratively resolve implementation challenges. These practices demonstrate that the Kyai fosters creativity and critical thinking amongst his followers. These findings also indicate a significant shift away from conventional leadership practices which typically maintain institutional routines towards transformation and innovation.

Individualised Consideration

In the dimension of individualised consideration, transformational leaders pay particular attention to the needs of each follower to achieve personal success and development, thereby acting as mentors or coaches to their team members. They are nurtured to gradually realise their full potential. Individualised consideration is implemented when new learning opportunities are created alongside a supportive environment. The leader's actions demonstrate acceptance of individual differences. Two-way communication is encouraged and personal interaction with followers is strengthened (Bass & Riggio, 2006b). Leaders listen effectively to individuals and delegate tasks to their followers. This characteristic is reflected in the following interview excerpt:

It has happened before, and it will be resolved through consultation, whereby the opinion with the strongest basis will be chosen and accepted by everyone. It's a matter of the best argument prevailing. Every week we have to resolve these matters because they concern the names of the students' guardians; otherwise, the students will be the ones to suffer. However, the solution to the problem doesn't have to be found today; sometimes it takes time to investigate and identify the issue, and to gather input from various parties, but it will still be dealt with. As for decision-making, it depends on the nature of the problem: if it concerns the Board of Caretakers, or if it relates to the boarding houses, then it is usually resolved by each respective boarding house (Interview with informant, 2024).

Based on the results of these interviews, it is clear that the Kyai does indeed pay close attention to the views of every individual in the problem-solving process. Each individual is given the opportunity to present their arguments during discussions; all views are gathered, and the best idea one that is acceptable to all parties is then selected. An open discussion forum encourages each member to express their ideas and creativity, thereby fostering innovation within the pesantren's educational system. In this context, the Kyai not only allows freedom within the discussion forum but also grants the freedom to allocate time to resolve issues according to their level of priority. Each issue is categorised as major, medium or minor, thereby allowing his followers the flexibility to formulate solutions at their own pace. Some problems must be resolved quickly, whilst others require more time. This freedom of space and time in discussion ultimately fosters a sense of comfort amongst his followers, enabling them to continue to grow and develop within the pesantren.

The boarding school administrators emphasise that the Kyai provides encouragement tailored to each individual's needs and recognises that the process of adaptation varies from person to person. It is this understanding that leads the Kyai to grant each individual a different amount of time to resolve their issues. Guidance that allows for freedom in terms of space and time will further boost the self-confidence of his followers and minimise resistance to change, which represents one of the key characteristics of transformational leadership.

The Challenges of Implementing Digital Learning

The rise of the four sons of the kyai, marked by a transition from a traditional education system to a modern, digital-based education system, has nevertheless retained traditional values throughout this transformation. This is evidenced by the fact that policy-making within the pesantren remains centralised, operating through a top-down mechanism. Pesantren educational policies are determined based on the instructions of the kyai, as the highest authority within the pesantren. This was conveyed in the interview as follows:

As for the policies all of them it's more of a centralised leadership style, so all policies are based on orders from the kyai; it's more of a top-down approach, you see, rather than bottom-up, in the pesantren. Yes, what's the Javanese term for it? *Sendiko Dawuh* (*I submit to the orders*) in the pesantren. *As for, say, a foundation, it must come from the inner circle of the family, from the kyai, and only then are there field implementers, departments, and directorates, with alumni from outside serving as professionals in their respective fields. So the involvement of external parties is already part of the on-the-ground management* (Interview with informant, 2024).

Based on the results of these interviews, it can be seen that although a transformation towards modern education has taken place, traditional methods are still employed at a strategic level. The transformational leadership exercised by the kyai in driving the shift from a traditional to a modern education system cannot entirely abandon traditional values. These values will continue to be ingrained alongside the changes taking place in the pesantren. The findings of this study add to the discourse on traditional leadership versus transformational leadership, raising the question of whether transformational leadership can truly abandon traditional values or whether acculturation occurs, whereby transformational leadership still retains traditional values, as is the case at the Pesantren Assalafiyyah Mlangi (Elista, 2025).

Transitioning From Traditional to Digital Learning

At the start of itstransitionfrom traditional learning to digital learning, the Assalafiyyah Mlangi Islamic boarding school faced a major challenge. This was because the Assalafiyyah Islamic boarding school is a Salafiyah institution that focuses on the study of classical Islamic texts. Integrating traditional learning methods with digital learning methods presented a unique challenge that the pesantren had to face.The existing learning methodswere generally of aclassical naturethrough*sorogan, bandongan/wetonan*, *memorisation* and *bahtsul masail* (Amiruddin et al., 2024). The *sorogan* method is a traditional way of learning in which santri (students) take turns reading from a text in front of the kyai (their teacher) to receive immediate feedback. Bandongan / wetonan is a method in which the kyai reads, translates and explains the contents of the text, whilst the santri (students) listen and make notes (interpret the meaning) in their own copies of the text. On the other hand, memorisation is a method whereby students are required to memorise specific textsin the field of nahwu sharaf (Arabic grammar), such as Ibn Malik's Alfiyah. Meanwhile, Bahtsul Msail is a method of discussion used to examine and find solutions to religious issues based on classical texts(Amiruddin et al., 2024; Dhofier, 2011).

The integration of traditional and modern learning methods is a lengthy process. The dynamics of acceptance and resistance characterise the transition from traditional to digital learning. This is also influenced by the leadership style of the kyai in the pesantren. The four kyai did not immediately resort to extreme measures to reform traditional teaching methods. The kyai employed a subtle approach through acculturation and the integration of traditional and modern learning to gain acceptance from the academic community. This finding is consistent with transformational leadership theory, which states that a leader's transformational leadership style in a school can influence job satisfaction, organisational commitment, and teacher performance. (Maheshwari, 2022). Transformational leadership is essential in responding to the ever-changing school environment and the evolving needs of educational organisations (Arokiasamy & Tat, 2020). This is where the school leader plays a vital role in responding to the challenges of change. The actions taken in response to change largely determine whether a leadership style will be accepted or rejected. Changes that are too extreme are often difficult for followers to accept; therefore, a good leader will adopt a subtle approach through intellectual stimulation, individual consideration, the influence of ideals and inspirational motivation to influence their followers (Bass & Riggio, 2006; Maheshwari, 2022).

In transitioning from traditional to digital learning, the kyai have adopted a subtle approach through the application of the four dimensions of transformational leadership. Their sense of purpose and inspirational motivation stem from parents' demand for

high-quality educational services. Parents' needs and demands serve as the inspiration and driving force for pesantren leaders to develop advanced and high-quality educational services. This is evident from the following interview:

It is really more about the services we provide; parents entrust their sons and daughters to us here. The more attention we pay to the boarding school's services, the more confident parents will become in the institution. In the student admission process, we never engage in promotional activities or resort to such tactics. Our promotion stems largely from word of mouth by parents who have witnessed the positive changes in their children's behaviour as a result of their time at the boarding school. For instance, from Kalimantan, Central Java and elsewhere, there is a great deal of word-of-mouth promotion by parents and guardians. Indeed, the quality of Assalfiyah stems initially from character and moral education, which are prioritised so that there is a change in the children's behaviour, which they then pass on to neighbours and relatives. Whereas in the past, things were more traditional in line with the wishes of the kyai, nowadays we operate within the framework of the law. The discussion-based learning model, for example, where the teacher sets a topic. We also have the Assalafiyah Academic Information System (SIAKAD), which facilitates educational services for students and parents. Furthermore, the children here no longer use cash; it's cashless and paperless. They use laptops and tablets. So, if there's an exam, it's taken on the spot; if all the questions are multiple-choice, then the results can be issued immediately. Furthermore, the finance system is cashless, so the children use this card for their snacks. It's a barcode-based card, so there's no circulation of cash; everything follows the same standard. For instance, the standard for funding is the same, so meal costs are the same regardless of which complex they're in, because the unit organising it is the same it's all under the BUMP (Pesantren-Owned Business Entity) holding company, we just distribute the food; for instance, in each dormitory complex there are four canteens, and all four are the same. If there's one canteen there and another elsewhere, or perhaps if there's a slightly larger canteen, the number of students is adjusted accordingly that's usually how it works but the standard remains the same (Interview with informant, 2025).

Based on the results of these interviews, it is evident that the process of change within the learning system is a response to the needs of parents, guardians and students, who desire a high-quality education. The changes were implemented gradually by the religious leaders through the establishment of SIAKAD (Academic Information System). The learning system, which was initially traditional and aligned with the wishes of the religious leaders, has gradually evolved to follow the national education curriculum. This transition was undertaken to support improvements in the quality of educational services. The digitisation of learning began with a paperless approach, with students being asked to use tablets and computers to study the material. Teachers use an online system for examinations and to deliver learning materials. A cashless payment system has been implemented to reduce the use of cash and support the pesantren's financial system, based on the concept of 'by students, for students'. Students are encouraged to shop at the Boarding School's Own Enterprise to ensure economic activity circulates within the Assalafiyyah Mlangi Boarding School and the surrounding community, thereby supporting local economic resilience. The Academic Information System is illustrated in appendix Fig. 1.

The boarding school's academic information system serves to connect students with their guardians. This system makes it easier for guardians to monitor students' academic and financial progress at the boarding school. A key advantage of this application is the ability to monitor students' progress in real time. Parents and guardians will receive information regarding the students' status, including academic progress and results (appendix Fig. 2), financial status (appendix Fig. 3), health status (appendix Fig. 4) and student attendance at school (appendix Fig. 5).

All these findings indicate that the leadership of the Kyai cannot be interpreted in a narrow context as merely traditional religious leadership. Whilst traditional pesantren leadership emphasises religious authority, the preservation of traditions and hierarchical decision-making, the Kyai in this study complement these characteristics through transformational leadership behaviour. The Kyai inspire a shared vision, stimulate innovation, encourage organisational learning and provide individual support to their followers during the process of digital transformation. This demonstrates that the Kyai preserve the cultural and spiritual identity of the pesantren whilst simultaneously leading organisational change in response to contemporary educational challenges.This study argues that the transformational nature of Kyai leadership lies not in a shift away from traditional religious leadership, but in its transformation into a leadership model capable of balancing institutional relationships with innovation. This integration represents a theoretical contribution by demonstrating how transformational leadership is contextualised within pesantren that are undergoing digital transformation.

Discussion

The debate regarding traditional versus digital learning finds common ground in this study. The integration efforts undertaken by four kyai to reform traditional learning methods towards digital learning have given rise to a digital learning model for Islamic boarding schools. The transformational leadership of the kyai has also supported the emergence of digital learning in Islamic schools, which are traditionally known for their conservative nature. This study supports the argument that digital learning can optimise human resources in the world of education. Similar findings have also been observed in Southern Nigeria, underscoring the importance of integrating e-learning resources into teaching practices. This encourages stakeholders, including administrators, curriculum planners, and educators, to actively support the use of online libraries and curriculum software to enhance teaching effectiveness and graduate competencies(Okon et al., 2025). This discussion highlights the importance of digital learning in schools for improving the quality of educational services. The development of the Academic Information System (SIAKAD) plays a key role as a digital learning model that supports the digitalisation of Islamic boarding schools in Indonesia. This model is illustrated in Fig. 2 as follows.

Source: compiled by the author, 2026

The challenge of digital learning at the Assalafiyyah Islamic boarding school lies in the traditional nature of Salafiyyah boarding schools. The Salafiyyah system, which is structured like a kingdom, requires its students to learn using traditional methods. The existing teaching methods are generally of a classical nature, utilising sorogan, bandongan/wetonan, memorisation and bahtsul masail(Amiruddin et al., 2024). The pros and cons put forward by conservatives versus modernists have shaped the transition from traditional to digital learning. The rise of these four sons of religious leaders has brought about a shift in the pesantren's educational system, moving from traditional methods towards a digital model. This revival began with the formulation of the vision and mission of Pesantren Assalafiyyah, which combines the Salafi (traditional) educational tradition with digital learning. Challenges such as the exclusivity of learning and the rigidity of traditions and customs have shaped this integration process. Four sons of the Kyai sought to negotiate with conservative groups to ensure the digitalisation of the pesantren could proceed.

The process of transforming the pesantren was then gradually accepted by the conservative faction for the sake of the institution's progress. Through the establishment of SIAKAD (Academic Information System), the traditional learning model gradually shifted to digital learning. The activity of studying classical Islamic texts, which initially used paper sheets, has now shifted to tablets or laptops, making it paperless. The financial system, which originally used cash, has now been replaced by e-finance. Monitoring of students' health can also be carried out in real time via e-healthy. Student attendance is recorded using e-presence, which facilitates the monitoring process by parents and guardians. It is these various benefits that have increased the trust of parents and guardians in Pesantren Assalafiyyah, ensuring that the process of change is accepted by all parties.

This case study demonstrates that digital learning can be accepted by various stakeholders provided that, firstly, the bargaining value offered by the school leader (kyai) is able to accommodate the wishes of all parties. Secondly, the process of change must be implemented gradually, beginning with the formulation of the institution's vision and mission, which are capable of uniting all groups. Thirdly, the digital products produced must be based on an analysis of the needs of pupils and parents/guardians so that the benefits can truly be felt directly. Fourthly, this study shows that parents' trust in the school is demonstrated through the school's commitment to delivering high-quality educational services.

The digitisation of learning at Pesantren Assalafiyyah demonstrates that the technological transformation taking place within pesantren cannot be understood merely as a process of using digital devices, but as a process of institutional change that affects the structure of authority, the culture of learning, and the traditional identity of the pesantren. In the pesantren tradition, the Kyai holds a central position in safeguarding the continuity of values, scholarly traditions, and Islamic educational authority. Consequently, when digital systems are introduced, resistance arises from conservative groups, which can be understood as a form of concern regarding the potential erosion of the Kyai's authority, learning etiquette, and classical methods such as sorogan, bandongan/wetonan, memorisation, and bahtsul masail (Amiruddin et al., 2024; Dhofier, 1980). This is in line with (Lukens-Bull, 2001) view that pesantren in Indonesia often find themselves caught between modernity and tradition, yet the two need not always be directly pitted against one another.

Critically, these findings also demonstrate how the success of digitalisation at Pesantren Assalafiyyah is not solely determined by the use of existing technology, but is also linked to the extent to which the human resources within the pesantren are able to build legitimacy for the current changes. This situation can also be seen as part of the role of change agents who act as a bridge between conservative and modernist groups. This is evident in the fact that they do not impose radical digitalisation, but negotiate it through the pesantren's vision and mission, which combine Salafi tradition with digital learning. This strategy is in line with organisational change theory, which emphasises the importance of strategic vision, collective support, and the gradual reinforcement of change so that innovation can be accepted and become part of the organisational culture(Kotter, 2012).

The acceptance of SIAKAD, the e-library, e-finance, e-presence and e-healthy systems which are tablet and laptop-based can also be explained through the theory of innovation diffusion. Argument from (Rogers, 2003)explains that an innovation is more readily accepted if it offers a 'relative advantage', is compatible with users' values and needs, is easy to use, can be tested gradually, and offers observable benefits. In the context of Assalafiyyah, digitalisation is accepted because it offers immediately tangible benefits, such as administrative efficiency, financial transparency, real-time monitoring of students' health, and ease for parents in monitoring student attendance. Thus, digitalisation is not merely a symbol of modernity, but also a practical solution to the needs of students, boarding school administrators, and parents or guardians.

However, the digitalisation of Islamic boarding schools also needs to be scrutinised so that it is not merely viewed as a technical success. The use of e-libraries, e-finance, e-attendance and e-health systems does indeed improve efficiency and accountability, but at the same time can give rise to new issues regarding data privacy, digital surveillance, the security of students' information, and digital literacy inequalities. In the study of educational data ethics, the use of students' digital footprints must take into account aspects of privacy, consent, transparency, data ownership, data validity, and accountable governance (Hakimi et al., 2021). Therefore, the digitalisation of Islamic boarding schools should not be measured solely by the number of applications used, but also by the readiness of data governance, the protection of students, and the ability of the boarding school to uphold Islamic educational values in the digital space.

The findings of this discussion indicate that the Kyai's transformational leadership plays a significant role in supporting digital transformation in pesantren. In addition to acting as an administrative leader, the Kyai also serves as a visionary agent of change who influences organisational governance, integrating digital learning whilst upholding the Islamic values of the pesantren. These findings are consistent with the theory of Transformational Leadership by Bass and Riggio (2006) namely idealised influence, inspirational motivation, intellectual stimulation and individual consideration; however, there are several dimensions that distinguish the Transformational Leadership model by (Bass & Riggio, 2006a) from the Kyai's Transformational Leadership theory in this study, as presented in Table 3 below:

Table 3
Critique of Bass's Theory Dimension

Dimension	**Transformational Leadership Bass**	**Transformational Leadership of Kyai**
Sources of Power	Charisma and formal status	Charisma and informal status
Goal Orientation	Organizational effectiveness	Focus on preserving the values and traditions of Islamic boarding schools
Leader-Follower Relationships	Inspiring hierarchy	The relationship is like that of a family
Forms of Motivation	Organizational vision	Seeking blessings from a spiritual teacher
Intellectual Stimulation	Organizational innovation	The spiritual transformation of his followers towards a better life
Individualized Consideration	Individual Mentoring	Group and individual mentoring
Organizational Context	Formal and bureaucratic	Tends to be informal and somewhat formal
Source: analysed by the authors, 2026		

In terms of the sources of power, what distinguishes this study from that of (Bass & Riggio, 2006b) is the leader's charisma, which is formed informally. The leadership of the Kyai in the pesantren is largely built through informal mechanisms, such as coffee shops and casual discussions with his followers. This is consistent with the findings of (Naldi et al., 2026), who state that the relationship forged by the Kyai with his students is a paternal one that tends to be informal in nature. In terms of the goal orientation dimension of the theory by (Bass & Riggio, 2006b), which emphasises organisational effectiveness, this study focuses on preserving the values and traditions of the pesantren whilst adapting to the changing times. The dimension of leader-follower relationships in the study by (Bass & Riggio, 2006b) is characterised by an inspiring yet hierarchical system; in contrast, the study of Kyai leadership focuses on familial relationships. Motivation is shaped in accordance with the organisation's vision, whilst pesantren, although they have a vision, have as their primary objective the pursuit of the Kyai's blessings. Intellectual stimulation prioritises organisational innovation, whilst the Kyai's leadership in the pesantren focuses more on the spiritual transformation of his followers towards a better life. The dimension of individualised consideration is practised solely on an individual basis; by contrast, the Kyai's leadership is exercised both collectively and individually. The organisational context is formal and bureaucratic, whilst the pesantren tends to be informal, though it may become formal depending on the context of the issue at hand.

Overall, this study expands on Transformational Leadership Theory by demonstrating how its dimensions operate within the unique social, cultural and religious context of an Islamic boarding school in Indonesia. Whereas previous studies have generally examined transformational leadership within the context of corporate organisations (Chen & Xue, 2025; Li et al., 2025; Liu & Yang, 2026; Mao et al., 2024; Nam & Chang, 2026) and formal educational institutions (BinJwair & Al-Jasser, 2026; Islam et al., 2025; Lo & Lin, 2026; Rezai & Goodarzi, 2025; Wang & Peng, 2026). This study demonstrates that transformational leadership in Islamic boarding schools is characterised by the integration of charismatic religious authority with the transformation of religious educational institutions. The Kyai's moral legitimacy, spiritual influence and educational leadership reinforce the dimensions of transformational leadership, thereby enabling digital transformation in Islamic boarding schools without undermining their values and traditions. This study makes a theoretical contribution through the contextual application of theory (Bass & Riggio, 2006b), integrating the Theory of Transformational Leadership in Pesantren and demonstrating the existence of religious legitimacy capable of strengthening the effectiveness of transformational leadership in digital transformation.

Although the discussion of the findings suggests that the Kyai's transformational leadership plays a central role in supporting digital transformation in pesantren, it is important to recognise that this success is not solely attributable to the Kyai's transformational leadership; other factors, such as internal and external factors, also influence this success. A more comprehensive interpretation acknowledges that transformational leadership can be successful under certain supporting conditions. Firstly, the provision of adequate institutional resources to support digital learning. These resources primarily include financial support, staff, trained educators, and the organisation's readiness to develop the operational capacity required to implement the Kyai's vision and mission. Leadership not supported by adequate institutional resources will also face institutional barriers (Chorozidis et al., 2024; Huynh et al., 2024; Soomro & Khan, 2026; Xue et al., 2024). Secondly, technological infrastructure is another key supporting factor. The provision of adequate internet connectivity, digital learning platforms, computer facilities and mobile technology creates the technical foundation required for digital learning activities (Abbes et al., 2024; Fahrni et al., 2025; Sari et al., 2026; Wong et al., 2026).

The Kyai's inspirational leadership encourages his followers to embrace digital innovation, whilst the quality and quantity of the technological infrastructure also support the digital learning process at the pesantren. Thirdly, government policies promoting digital transformation through national policy initiatives also support online learning. These regulations are set out in Minister of Education and Culture Regulation No. 119 of 2014 concerning the Implementation of Distance Learning at Primary and Secondary Levels and Minister of Education and Culture Regulation No. 109 of 2013 concerning the Implementation of Distance Learning in Higher Education. The existence of this legal framework will strengthen the legal standing of digital learning. Such a policy environment will foster a leadership climate conducive to digital transformation within Islamic boarding schools (Indrawati, 2014; Soemartono, 2014).

Furthermore, the support of the pesantren community comprising students, teachers, pesantren administrators, academic staff and the local community surrounding the pesantren also contributed to the success of the leadership. The support of the pesantren community is vital to ensure that the Kyai's leadership can run smoothly in implementing his policies (Nuha et al.,

2024; Zaki et al., 2022). Thus, although this study focuses on transformational leadership as the primary analytical framework for explaining the Kyai's influence in carrying out institutional reform in pesantren, these findings also acknowledge the existence of other factors that influence the dynamics of pesantren institutions in Indonesia. The success of digital transformation in this context suggests that the interplay between the Kyai's leadership, institutional resources, technological infrastructure and government policy is key to the success of digital transformation in Islamic boarding schools.

Conclusion

This study confirms that the Kyai's transformational leadership has played a significant role in supporting the implementation of digital transformation in pesantren through the articulation of a shared vision, the encouragement of innovation, individual and collective guidance, and the strengthening of the pesantren community's commitment. These leadership practices have contributed to the successful adoption of digital learning technologies whilst preserving the values and traditions of the pesantren. Rather than demonstrating a measurable increase in students' digital literacy or technological skills, these findings confirm that students have become more actively engaged in the digital learning ecosystem and have developed closer relationships with their peers through the presence of educational digital technology. Participants also reported positive experiences in adapting to the SIAKAD digital learning system and expressed a desire to participate further in digital learning activities.

These findings reflect the process by which students adapt to digital transformation within the context of Islamic boarding schools and do not provide objective evidence of an improvement in digital competence. This study further confirms that the success of digital transformation must be understood as the result of an interplay between the transformational leadership of the Kyai and organisational conditions that support the institution's success, including institutional resource support, technological infrastructure and government policy. Further research using mixed-methods or longitudinal designs is recommended to evaluate sustainable digital learning transformation leading to measurable improvements in students' digital literacy, digital competences and other educational outcomes.

Limitations and Possible Future Research

The first limitation of this study lies in the small number of informants, as it focuses solely on the Pesantren Assalafiyyah Mlangi in Yogyakarta, Indonesia. This spatial limitation precludes a broader exploration of Kyai's transformational leadership elsewhere, which could provide a diversity of perspectives on Kyai's transformational leadership. Secondly, this study emphasises the transformation process aimed at improving the quality of education in Indonesia. However, this study does not discuss in depth the challenges of digital learning faced by other pesantren. Examining cultural and structural barriers to digital learning is crucial to understanding the dynamics of Kyai's transformational leadership. Thirdly, this study does not address the perspectives of alumni of the Pesantren Assalafiyyah Mlangi regarding digital learning. The wealth of perspectives from alumni is vital for evaluating the learning process at the school. Fourth, this study do not provide objective evidence of an improvement in digital competence. Further research using mixed-methods or longitudinal designs is recommended to evaluate sustainable digital learning transformation leading to measurable improvements in students' digital literacy, digital competences and other educational outcomes.

Declarations

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Author Contributions Statement

[1]Amanda Elista contributed to the writing of the introduction, literature review, research methods, findings, discussion, conclusion, research limitations and possible future research.

[2]Tri Yuniningsih contributed to the drafting process, the development of the findings, the discussions and the conclusion.

[3]Nur Fitri Mutmainah contributed to the development of ideas in the discussion and findings sections.

[4]Erni Saharuddin contributed to the writing of the introduction and the literature review.

[5]Diyah Novitasari contributed to the drafting of the introduction and discussion sections.

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Data availability

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethical Declarations

Ethics approval and Consent to participate

The study protocol was approved by the Research Ethics Committee of Universitas Gadjah Mada in accordance with the ethical principles and regulations applicable to research involving human participants. The study was conducted under the official research permission issued by Universitas Gadjah Mada (Research Permit No. 202/2024). Participation was voluntary, and informed consent was obtained from all participants prior to data collection. Participant confidentiality and anonymity were maintained throughout the study. All participants were aged 16 years or older; therefore, parental or legal guardian consent was not required.

Clinical trial number

Clinical trial number: not applicable.

Consent to publish

Not applicable.

Competing interests

The authors declare no competing interests.

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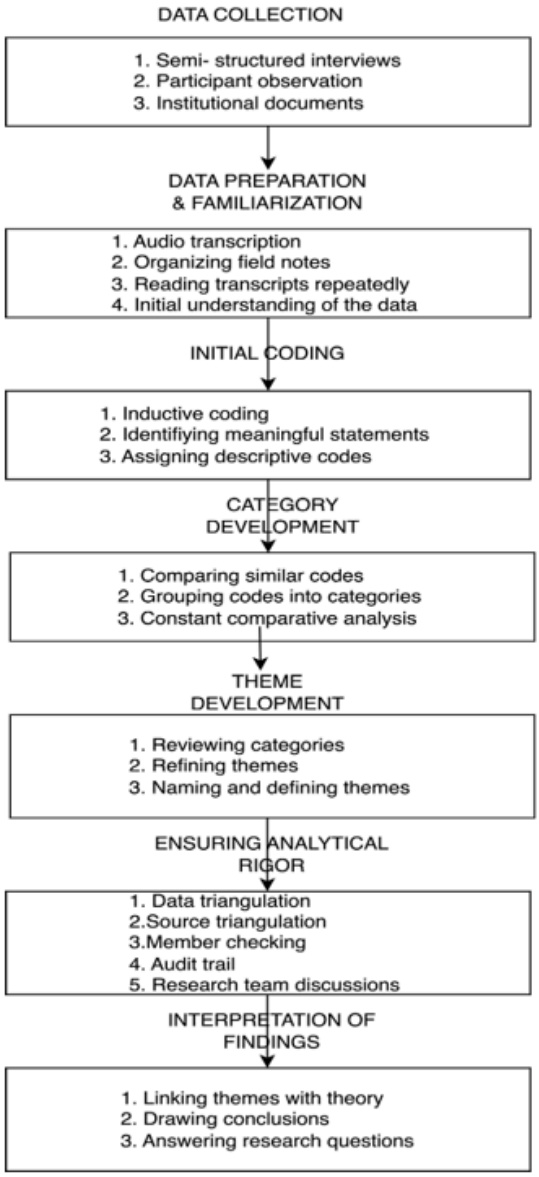
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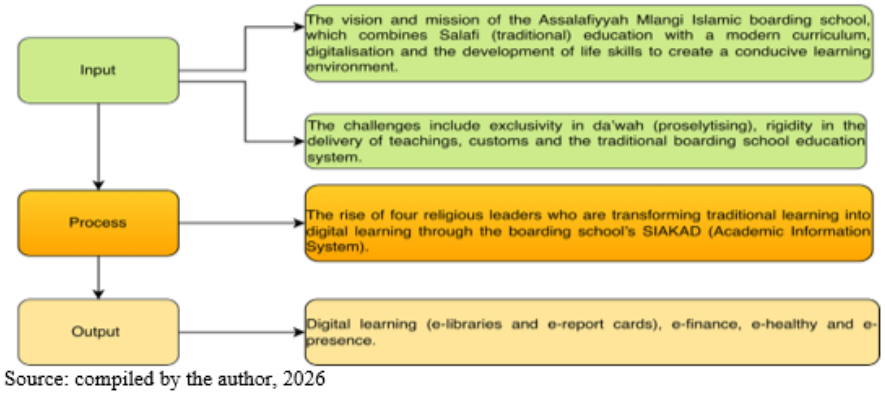
Figures



Source: analysed by the authors, 2026

Figure 1

Thematic Analysis Procedure



Source: compiled by the author, 2026

Figure 2