

Knowledge Management Transformation in Pesantren: A Case Study of Pondok Pesantren Darul Ulum Jombang

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ABSTRACT

Purpose – This study aims to analyze the transformation of knowledge management at Pondok Pesantren Darul Ulum (PPDU) Jombang. The primary focus of this study is to address how pesantren institutions maintain *salaf* (traditional) values while adopting national educational professionalism systems.

Methods – This research employs a qualitative approach with a case study design. Data were collected through participatory observation in dormitory and school environments, institutional archival documentation, and in-depth interviews with the Board of Pesantren Leadership (Majelis Pimpinan Pondok Pesantren), heads of educational units, administrative staff, and students. Data analysis was conducted through data reduction, data display, and conclusion drawing to validate the knowledge management cycle.

Findings – The results indicate that PPDU's institutional transformation is divided into three phases: traditional, transitional, and modern. Key findings reveal that knowledge management is implemented through the integration of the Kitab Kuning (classical Islamic texts) curriculum with the national curriculum. Technically, the institution has codified tacit knowledge into explicit knowledge through the digitalization of student databases and the formulation of formal SOPs. The acceleration of transformation is driven by the collective leadership of the MPPK, which effectively mitigates human resource competency gaps and technological infrastructure constraints.

Research Implications – The implications of this research emphasize the importance of an adaptive knowledge management model for the sustainability of pesantren in the disruption era. The limitation of this study lies in its focus on a single site (single case study), so the generalizability of the findings may be limited to pesantren with similar organizational characteristics.

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Introduction

Pesantren is a traditional Islamic educational institution that holds a fundamental role in the historical trajectory of education in Indonesia. As an institution born from the womb of local culture, pesantren functions not only as a center for the transmission of Islamic sciences (*tafaqquh fiddin*) but also as a stronghold for national character and identity (Noviana & Mustafidin, 2025). Its primary characteristics, rooted in independence, simplicity, and devotion, enable it to endure across generations. However, entering the era of information disruption and educational globalization, Triasmoro et al. (2025) explain that pesantren faces existential challenges in reforming institutional governance to remain relevant to contemporary demands without eroding its noble traditions.

Contemporary educational dynamics indicate intense competition that compels pesantren to undergo transformation. Discrepancies arise when traditional (*salaf*) pesantren are often perceived as less competitive in meeting administrative standards and the formal qualifications of modern educators (Li Ruyang et al., 2025). Consequently, the need for transformation from a traditional model toward a modern (*khalaf*) pesantren has become a sociological and managerial necessity to ensure institutional sustainability amidst the currents of modernity.

In the perspective of organizational management, the essence of pesantren transformation lies in how knowledge is managed. Knowledge management (KM) becomes a crucial instrument for pesantren to identify, create, and distribute intellectual assets to achieve competitive advantage (Putri et al., 2025). Theoretically, this shift can be explained through the SECI Model (Socialization, Externalization, Combination, Internalization) developed by Nonaka dan Takeuchi (2007). In the context of pesantren, knowledge management no longer stops at the Socialization stage, namely, the oral and personal transmission of values from the Kyai to the students, but has advanced to the Externalization and Combination stages through the codification of these values into formal management systems, digital documents, and integrated curricula. The addition of the SECI framework emphasizes that the transformation at Pondok Pesantren Darul Ulum Jombang is a systematic effort to convert tacit assets into more measurable organizational intellectual capital.

In practice within traditional pesantren, knowledge management is often informal and highly dependent on the charismatic authority of the leader or Kyai (Ramadhani et al., 2025; Ulya & Triyuliasari, 2024; Widiyanti, 2024). This pattern results in the collective knowledge of the pesantren being stored as tacit knowledge, which is difficult to transmit systematically and institutionally to the next generation without a clear codification mechanism. This institutional transformation triggers a paradigm shift in knowledge management, moving from personal experience-based systems toward more structured and explicit systems through formal schooling.

At Pondok Pesantren Darul Ulum Jombang, this phenomenon is evident in the integration of the *Kitab Kuning* (classical Islamic texts) study tradition with the modern education system. Nevertheless, this transition is not without obstacles, including internal resistance, limited administrative human resource capacity, and the influence of external political dynamics affecting managerial stability. These constraints indicate that the transformation of knowledge management is not merely a technical change but a complex process involving negotiations between traditional values and the demands of professionalism.

To date, literature on Islamic educational management is generally dominated by descriptive studies concerning the leadership of the Kyai or the partial effectiveness of the curriculum (Maulida, et. al., 2025; Muzaffar, 2025; Safitri, 2025). There remains an academic research gap regarding how a large pesantren manages the knowledge cycle from acquisition to application integratively during a period of institutional transition. Most studies have yet to provide an in-depth portrayal of how knowledge assets in traditional pesantren are converted into strategic capital to succeed in the modern education system without losing their religious essence.

Based on these gaps, this study aims to comprehensively analyze the transformation of knowledge management at Pondok Pesantren Darul Ulum Jombang. The novelty of this study lies in the exploration of knowledge conversion mechanisms within the process of pesantren modernization through an integrated knowledge management framework. The results of this research are expected to provide theoretical contributions to the development of Islamic educational management science and serve as a practical model for other pesantren in managing institutional transitions effectively, adaptively, and sustainably amidst the dynamics of global change.

Methods

This study employs a qualitative research design with a case study approach. The selection of this design aims to gain a profound understanding of the knowledge management transformation phenomenon at Pondok Pesantren Darul Ulum (PPDU) Jombang as a unique, single entity (Tight, 2022). In this study, the researcher serves as the primary instrument (human instrument), directly engaging in field data collection to ensure the authenticity and integrity of the gathered data.

The subjects of this research comprise the management of Pondok Pesantren Darul Ulum Jombang. Informants were selected using a purposive sampling technique to obtain credible and authoritative data; these include the Board of Pesantren Leadership (Majelis Pimpinan Pondok), heads of schools/madrasahs under the auspices of PPDU, ustadz (teachers), and administrative staff directly involved in the transformation process. The research is centered at the Pondok Pesantren Darul Ulum complex in Rejoso, Peterongan,

Jombang, East Java, with intensive field research conducted to capture the dynamics of organizational change.

Data collection techniques were carried out through three primary methods: (1) in-depth interviews to explore the perspectives of key actors regarding knowledge management policies and implementation; (2) participant observation to observe daily educational and managerial interactions; and (3) documentation to review historical archives, organizational policies, and institutional statistical data. Instrument development involved creating interview guides and observation sheets tailored to the indicators of the knowledge management cycle (acquisition, storage, distribution, and application).

The data analysis technique follows the interactive model, consisting of data reduction, data display, and conclusion drawing or verification (Miles et al., 2014). The researcher categorized the data based on themes related to the transition from traditional to modern systems. To ensure the validity and trustworthiness of the findings, credibility tests were conducted through source triangulation (comparing data from various informants) and technical triangulation (comparing data obtained from interviews, observations, and documents), as well as peer debriefing to minimize researcher subjectivity.

Result

1. Overview of Institutional Transformation

The institutional transformation at Pondok Pesantren Darul Ulum (PPDU) Jombang is a long evolutionary process that can be categorized into three primary phases:

1.1. Traditional Period (1885–1937)

During this period, PPDU operated as a pure salaf (traditional) pesantren, founded by KH. Tamim Irsyad and KH. Cholil. The institution's primary focus was the transmission of religious knowledge through the teaching of classical texts (*kitab kuning*) using sorogan and bandongan methods. Knowledge was managed as tacit knowledge, centralized around the figure of the *Kyai* as the sole source of authority. There was no formal educational level classification system; students (*santri*) studied based on their personal mastery of specific texts. The primary educational orientation was to produce *ulama* (scholars) and devout individuals through a lifestyle of simplicity and total devotion.

1.2. Transitional Period (1937–1994)

This phase began when PPDU introduced radical innovations under the leadership of the second generation. In 1937, the Madrasah (classical/classroom) system was introduced through the establishment of Madrasah Ibtidaiyah, marking the initial shift from tacit to explicit knowledge management. Major transformation continued with the adoption of government curricula (from the Ministry of Religious Affairs and the Ministry

of Education and Culture) and the establishment of formal educational units such as Junior High Schools, Senior High Schools, and Darul Ulum University. During this period, the pesantren began adopting a more modern organizational structure, although the charismatic authority of the Kyai remained the ultimate policy determinant in integrating religious values and general sciences.

1.3. Modern Period (1995–Present)

Entering the modern era, PPDU has established itself as a *khalaf* (modern) pesantren with increasingly systematic management. Knowledge is managed through structured organizational mechanisms under the coordination of the Board of Pesantren Leadership (Majelis Pimpinan Pondok Pesantren). The pesantren curriculum is fully integrated with national standards, extending even to higher education in health and technology. Information technology has begun to be adopted in administrative and learning processes. This transformation has turned PPDU into a multicultural educational institution capable of managing thousands of students from diverse regional backgrounds through a professionally organized boarding school system, without abandoning the tradition of kitab recitation as its spiritual foundation.

Table 1. The Development of PPDU Jombang Across Phases

Developmental Phase	Period	Key Developmental Characteristics
Foundational Phase (Traditional)	1885–1937	Establishment of the pesantren; pure salaf system; focus on kitab kuning mastery; sorogan and bandongan methods.
Innovation Phase (Transitional)	1937–1994	Adoption of the classical system (Madrasah); integration of national curriculum; establishment of formal school units (Junior High, Senior High, Higher Education).
Integration Phase (Modern)	1995–Present	Strengthening of the Board of Leadership; institutional diversification (Health/Hospital); knowledge management based on modern organizational systems.

2. Knowledge Management at Pondok Pesantren Darul Ulum Jombang

The process of knowledge acquisition and creation at PPDU Jombang represents an integration between traditional sources and modern curricula. In an interview conducted in January 2026, an informant from the Board of Pesantren Leadership (Majelis Pimpinan Pondok Pesantren) emphasized that while the primary knowledge source remains rooted in Islamic values, adaptation to external knowledge is continuously maintained: "Our foundational knowledge is tafaqquh fiddin (religious understanding); however, as we evolve, we absorb government curricula from both the Ministry of Religious Affairs and the Ministry of Education and Culture to ensure students possess relevant competencies" (Interview.MPPK.01, January 2026).

These findings were validated through researcher observations at the Main Mosque and the Pendopo (assembly hall), which demonstrated the consistent implementation of classical text (*kitab kuning*) studies. Simultaneously, the creation of new knowledge within the formal school environment was observed through scholarly discussions and the utilization of laboratory facilities.



Figure 1. Student learning activities at Pondok Pesantren Darul Ulum Jombang. (a) Kitab Kuning Study; (b) Formal School Learning

Knowledge storage and retrieval are managed through physical and digital documentation mechanisms. Based on interviews with administrative staff at the central office in January 2026, it was revealed that management has begun prioritizing the digitalization of assets: "Administrative archives, student data, and certificates are now being organized into a digital database to facilitate alumni data retrieval and institutional managerial requirements" (Interview.ADM.03, January 2026). Beyond administrative data, knowledge regarding values and norms is explicitly stored in the "Student Worship Guidebook," which serves as a daily reference, as well as on information boards outlining the code of conduct that forms the basis of student regulations.

Knowledge distribution and sharing are conducted through complementary formal and informal communication channels. Leadership informants explained that the distribution of strategic policies from the central level to educational units is carried out through "Board Meetings" and official memoranda (Interview.MPPK.01, January 2026). At the student level, knowledge sharing occurs organically through interactions in the dormitories; a student stated in an interview in January 2026: "We often utilize leisure time in the dormitory to discuss school subjects or deepen our understanding of classical texts with peers" (Interview.SNT.05, January 2026).

Researcher observations noted that traditional methods such as *sorogan* and *bandongan* remain the primary conduits for religious knowledge distribution. Simultaneously, the use of announcement boards, wall magazines, and the central public address system serves as a means for daily information distribution. Documentation of meeting minutes and routine activity schedules confirms a scheduled pattern of knowledge sharing between the pesantren leadership and unit administrators.

The application of knowledge is manifested in institutional development policies and daily disciplinary practices. Leadership informants stated that the tangible application of knowledge management is reflected in the establishment of strategic units that address community needs, such as the Islamic Hospital (RSI) and higher education units (Interview.MPPK.02, January 2026). At the instructional level, knowledge is applied through a system where senior students are assigned to mentor juniors in religious and dormitory activities. Observations conducted at the mosque during congregational prayer times showed consistency among students in practicing the worship rituals and social ethics taught within the dormitory curriculum.

Discussion

1. Knowledge Management Transformation at Pondok Pesantren Darul Ulum Jombang

1.1. Knowledge Acquisition and Creation Processes

The process of knowledge acquisition and creation at Pondok Pesantren Darul Ulum (PPDU) Jombang demonstrates an adaptive transformation dynamics that remains deeply rooted in tradition. Research findings indicate that the primary source of knowledge acquisition for the pesantren originates from Islamic values through the authoritative teaching of classical texts (*kitab kuning*). This aligns with the characteristics of pesantren as *tafaqquh fiddin* institutions that preserve classical scholarly transmission across generations (Syu'aib & Husni, 2025). However, the transformation toward a modern pesantren requires the institution to expand its acquisition spectrum by absorbing government curricula from both the Ministry of Religious Affairs and the Ministry of Education and Culture (da Costa Marques et al., 2022; Imamuddin, 2025). This curricular integration is not merely an administrative addition but a strategic effort to equip students with relevant competencies within modern society.

In the aspect of knowledge creation, PPDU Jombang has shifted from personal-charismatic patterns toward institutionalized frameworks. While in the traditional era, the creation of new knowledge relied heavily on the *ijtihad* or singular thought of the *Kyai*, the modern era involves collective interaction among educational units. New knowledge is generated through a "combination" process (Nurfadli, 2025), wherein the pesantren (dormitory) curriculum is synergized with formal school competency standards. Institutional innovations, such as the establishment of vocational and health education units, serve as physical evidence of knowledge creation that is responsive to labor market demands and contemporary challenges. This process demonstrates that the pesantren has transformed into a learning organization capable of converting external information into competitive internal intellectual assets (Zahedi, 2025).

Operationally, knowledge creation at PPDU is driven by the necessity to resolve daily managerial and educational issues. The synergy between the central leadership (*Majelis*

Pimpinan) and school unit heads creates a space for dialogue that facilitates the emergence of new policies, such as the standardization of the guardianship curriculum that remains integrated with formal education (Suwardy et al., 2024). This dynamic reveals that knowledge management in traditional pesantren is no longer static; rather, it evolves through a cycle of acquiring external knowledge which is then internalized into the pesantren's core values to produce graduates who are both religiously profound (*mutafaquh fidh-dhin*) and professional.

1.2. Knowledge Storage and Retrieval

Knowledge storage at Pondok Pesantren Darul Ulum (PPDU) Jombang has evolved from an implicit (tacit) system toward a more structured and explicit system. In the traditional era, knowledge storage relied heavily on collective memory and oral traditions passed down through direct interaction between the Kyai and the students. This storage model aligns with the concept of tacit knowledge, which is difficult to formalize in writing but is deeply embedded in organizational behavior and culture (Sun et al., 2025; Zahedi, 2025). In this context, pesantren values and local wisdom were stored as living intellectual assets maintained within daily dormitory life patterns.

As the institutional transformation toward a modern pesantren progressed, PPDU Jombang began codifying knowledge through formal documentation. Knowledge that was previously oral is now translated into tangible knowledge artifacts, such as the formulation of administrative Standard Operating Procedures (SOPs), student disciplinary regulations, and the Student Handbook (*Buku Saku Santri*). This step is part of a knowledge retention strategy to ensure that the pesantren's fundamental values are preserved despite leadership successions or management changes (Rizqi, 2025). This physical documentation serves as a vital instrument for the institution to store its intellectual assets permanently and systematically.

The knowledge storage process at PPDU Jombang has currently expanded into the digital realm to enhance the efficiency of knowledge retrieval. Research findings show that educational units under PPDU have adopted computer database systems to store academic information, student history data, and personnel archives. The utilization of information technology enables faster and more accurate data retrieval compared to manual paper-based systems (Cheruiyot et al., 2024; Mannang, 2025). This digitalization indicates that the pesantren recognizes the importance of technological infrastructure as a knowledge storage medium that supports professional modern organizational governance.

In addition to written documents and digital systems, knowledge storage at PPDU Jombang is also conducted through visual symbols and historical galleries displayed within the pesantren environment. Photographs of the founding figures, recitation schedule boards, and student wall magazines function as visual knowledge storage media

that reinforce historical memory for all members of the pesantren. The integration of digital, physical, and symbolic storage creates a comprehensive retrieval mechanism. Thus, the pesantren's knowledge assets are not only stored in archives but also live within the institution's physical environment, facilitating access for leadership and staff in strategic decision-making.

1.3. Knowledge Sharing and Dissemination

The mechanisms of knowledge sharing and dissemination at Pondok Pesantren Darul Ulum (PPDU) Jombang represent a hybridization between traditional charismatic communication channels and structured modern bureaucratic pathways. In the pesantren tradition, the dissemination of religious knowledge is conducted through the sorogan and bandongan methods, where the Kyai or Ustadz transmits scholarly knowledge directly to the students (Salam et al., 2025). This pattern relies on intensive face-to-face interaction, which in knowledge management literature is identified as the socialization process—the transfer of tacit knowledge between individuals through shared experiences (Suwatno et al., 2025). This method has proven effective in preserving the authenticity of scholarly chains (*sanad*) and the spiritual values that characterize traditional pesantren (Andrean & Husni, 2026).

Commensurate with the transformation toward a modern pesantren, PPDU Jombang has developed more formal and institutionalized knowledge distribution channels to manage its diverse educational units. The dissemination of strategic policies and managerial knowledge is carried out through regular meetings of the Board of Pesantren Leadership (Majelis Pimpinan Pondok Pesantren/MPPK) and structural coordination with the heads of educational units. The use of written instructions, official memoranda, and meeting minutes indicates a formalization of information dissemination, aimed at achieving policy synchronization across all organizational levels. This marks a shift from distribution patterns originally centered on the Kyai's oral instructions toward a management system that is more professional and accountable.

Knowledge sharing at the student level has also undergone significant development through the utilization of interaction spaces in dormitories and schools. Field findings indicate that peer group discussions and extracurricular activities serve as effective platforms for the exchange of collective knowledge (Hu et al., 2023). These interactions allow students to mutually clarify school subject matter and deepen their understanding of classical texts acquired during recitations. This dynamic illustrates the formation of a community of practice within the pesantren environment, where knowledge flows not only top-down from teacher to student but also horizontally among peers (Bicchi, 2024; Ilahi et al., 2022).

Supporting infrastructure, such as information technology and internal publication media, further accelerates knowledge dissemination at PPDU Jombang. The use of digital

information boards, wall magazines, and integrated public address systems serves as daily instruments to broadcast administrative information and disciplinary values to thousands of students. Furthermore, publication through social media and the institution's official website acts as a means of knowledge dissemination to external stakeholders and alumni. The integration of personal traditional methods with massive modern media ensures that the pesantren's knowledge assets are distributed widely, rapidly, and equitably, while simultaneously strengthening PPDU's position as an educational institution adaptive to developments in information technology.

1.4. Knowledge Application

The application of knowledge at Pondok Pesantren Darul Ulum (PPDU) Jombang is a crucial stage where managed intellectual assets are implemented to support the institution's competitive advantage. Research findings show that knowledge application is tangibly manifested through infrastructure development and the establishment of strategic units that address modern societal needs, such as the Islamic Hospital (RSI) and higher education institutions. This step represents a concrete utilization of organizational knowledge to create service innovations that transcend traditional pesantren boundaries (Khoeron et al., 2025). This expansion proves that knowledge management at PPDU does not merely result in accumulated documentation but transforms into operational policies that strengthen the institution's independence and competitiveness.

Within the instructional and guardianship spheres, knowledge application is implemented through the synchronization of pesantren values and modern educational professionalism standards. The knowledge acquired by students through the dormitory curriculum is directly applied in daily worship practices, discipline, and social ethics, which are hallmarks of PPDU students. Additionally, there is a knowledge application mechanism through a senior student assignment system to mentor juniors, serving as a platform for leadership practice and practical pedagogy. This process ensures that the tacit and explicit knowledge distributed can be internalized by students into tangible competencies in their daily lives within the pesantren environment (Zhang et al., 2026).

Managerially, knowledge application at PPDU Jombang is reflected in the organization's ability to respond to external dynamics, including government regulations and the demands of educational globalization. The adoption of national curriculum standards in schools under the auspices of PPDU is a form of administrative knowledge application that provides graduates with the formal legality required to pursue higher education. The effectiveness of this application is supported by the Board of Leadership structure, which is capable of converting strategic knowledge into collective action across every educational unit. Thus, knowledge application in this pesantren acts as a catalyst in realizing the vision of the pesantren as a learning organization that remains consistent with spiritual values while remaining adaptive to advancements in science and technology (Noviyanti et al., 2025).

2. Acceleration in Overcoming Knowledge Management Transformation Barriers

The acceleration in overcoming knowledge management transformation barriers at Pondok Pesantren Darul Ulum (PPDU) Jombang is conducted through a series of strategic policies initiated by the Board of Pesantren Leadership (Majelis Pimpinan Pondok Pesantren/MPPK). The primary barrier, in the form of a competency gap between traditional-based senior human resources and technology-adaptive younger staff, is addressed through the strengthening of continuous coordination and managerial training. The MPPK acts as a catalyst that accelerates the synchronization of traditional tacit knowledge with the requirements of modern explicit knowledge to ensure that the system transition does not disrupt the stability of pesantren values. This collective leadership support is a crucial enabling element to ensure that cultural barriers do not become permanent obstacles in the organization's evolution.

The acceleration in addressing infrastructure and bureaucratic constraints is achieved by adopting a digital database system to integrate the data of thousands of students spread across dozens of educational units. This step was taken to overcome the slow distribution of information, which previously relied solely on physical and oral media. Through digitalization, PPDU accelerates the knowledge retrieval process, which was previously hindered by piles of manual archives at the central office. This acceleration demonstrates the institution's awareness of the importance of technological infrastructure as a primary support for knowledge management to minimize data errors and expedite strategic decision-making at both central and unit levels (Norman et al., 2024).

In the socio-cultural aspect, efforts to overcome the barrier of double workloads for teachers are addressed through more systematic scheduling between the dormitory curriculum and the formal school. PPDU accelerates the process of internalizing modern values persuasively without diminishing its authoritative tafaqquh fiddin identity. This mitigation strategy strengthens PPDU's position as a learning organization capable of transforming structural challenges into opportunities to improve the quality of educational services (Lutfiyah et al., 2025). Through the synergy between the charismatic authority of the Kyai and a well-ordered bureaucratic system, PPDU has successfully accelerated the resolution of various operational barriers, ensuring that institutional transformation remains consistent with the pesantren's identity.

Conclusion

This study concludes that the transformation of knowledge management at Pondok Pesantren Darul Ulum (PPDU) Jombang is a planned evolutionary process, in which the institution has successfully integrated traditional tafaqquh fiddin values with modern management systems. The primary argument of this research asserts that the success of this transformation does not lie in the replacement of tradition by modernity, but rather

in the institution's ability to hybridize charismatic-cultural tacit knowledge with administrative-digital explicit knowledge. Through systematic cycles of knowledge acquisition, storage, distribution, and application under the coordination of the Board of Pesantren Leadership, PPDU has been able to maintain the relevance of pesantren spirituality amidst the demands of national educational professionalism.

Practically, these findings can be applied by other pesantren institutions as a framework for managing institutional change. The main recommendation for educational practitioners is the importance of strengthening collective leadership and the digitalization of intellectual assets to accelerate decision-making and ensure the sustainability of organizational knowledge retention. Furthermore, the synergy between the dormitory curriculum and formal schools must be supported by a clear division of roles to mitigate double workload barriers. These findings offer implications for future research to explore the effectiveness of using Artificial Intelligence (AI) in codifying the tacit knowledge of Kyai more deeply, as well as to analyze the impact of this knowledge management transformation on the competitiveness of pesantren graduates in the global labor market.

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