



Integrating Deep Learning Principles into Pesantren Education: A Transformative Model for Meaningful Islamic Learning

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Abstract:

The purpose of this study is to demonstrate that the concept of deep learning has long been inherently realized within the traditional educational practices of pesantren, even before it was formally introduced in modern academic discourse. Pesantren, as the oldest Islamic educational institutions in Indonesia, have developed a holistic learning system that integrates intellectual, spiritual, and social dimensions in a sustainable manner. This research was conducted at Pondok Pesantren Nurul Ulum Cindogo using a qualitative field research approach. Data were collected through in-depth observations, semi-structured interviews, and documentation, involving kyai, ustadz, administrators, and students as key informants. The findings reveal that the fundamental principles of deep learning mindful learning, meaningful learning, and joyful learning are deeply embedded in the daily life and educational practices of the pesantren. Mindful learning is reflected in the development of students' metacognitive awareness through disciplined study habits, reflective practices, and spiritual internalization. Meaningful learning is realized through instructional methods such as sorogan and the communal living system, which connect theoretical knowledge with authentic life experiences and social responsibility. Meanwhile, joyful learning is manifested in participatory activities such as halaqah and lalaran, fostering active engagement, emotional connection, and intrinsic motivation among students. This study concludes that pesantren education not only aligns with but also predates and exemplifies the principles of deep learning. Therefore, it offers a contextual, holistic, and value-based model that can contribute significantly to the development of contemporary education.

INTRODUCTION

Pesantren are educational institutions with deep roots in the history of Islamic civilization in Indonesia. As the oldest Islamic educational institutions in Indonesia, pesantren play a strategic role in shaping the character and intellectual development of their students (Anjani et al., 2025). Their existence is not merely

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as a place to acquire religious knowledge, but also as a space for character and personality development grounded in comprehensive Islamic values. Pesantren not only function as venues for the transmission of knowledge but also as environments for the formation of a holistic personality rooted in Islamic values (Muhidin et al., 2025). Amid the ever-evolving currents of change, pesantren have proven capable of sustaining their existence by steadfastly holding onto their traditions and original identity. To this day, pesantren have endured amidst the shifting paradigms of the times as educational institutions that continue to uphold traditional values without relinquishing their original identity (Awanis, 2018). Moreover, the contribution of pesantren to the national education landscape is highly significant, as these institutions not only produce scholars and religious figures but also cultivate leaders, intellectuals, and agents of social change who have a tangible impact on the broader community. In Indonesia, Islamic boarding schools play a vital role, not only in producing religious scholars and leaders but also in fostering leaders, intellectuals, and agents of social change (Maimun & Fattah, 2024).

In today's era of digital development and globalization, education faces new challenges that demand a transformation in teaching methods (Hasnida et al., 2024). In the context of modern education, the concept of deep learning has garnered widespread attention. Unlike surface learning, which tends to be rote and procedural, deep learning emphasizes deep conceptual understanding, critical thinking skills, creativity, collaboration, and character development (Hitzler et al., 2024). Fundamentally, the concept of deep learning identifies six core competencies (6C): character, citizenship, collaboration, communication, creativity, and critical thinking (Fullan et al., 2018). However, in Indonesia, as formulated by the Ministry of Basic and Secondary Education (Kemendikdasmen), the concept of deep learning integrates three main principles: mindful learning, meaningful learning, and joyful learning (Mu'ti et al., 2025). With this, Indonesia is expected to be able to compete and prepare itself to address the 21st-century education paradigm (M. Wijaya, 2025).

Upon closer examination, the values that form the core principles of the deep learning concept—namely mindful learning, meaningful learning, and joyful learning—are not actually new to the pesantren educational tradition. Pesantren have been practicing these deep learning values long before these terms gained popularity in the national literature (Wafi et al., 2025). The learning process in pesantren takes place through various distinctive approaches such as *bandongan*, *sorogan*, and *halaqah* activities that foster direct interaction between the *kyai/ustadz* and the *santri*, so that the learning process occurs in a meaningful atmosphere.

Thus, this study employs the principles of deep learning as formulated by Mu'ti et al. (2025) as the primary analytical framework for addressing the research questions. These three principles are considered the most relevant and representative for examining the extent to which the values and educational practices in Islamic boarding schools align with the spirit of deep learning, which is currently a focal point in the 21st-century national education paradigm.

Based on initial observations, the researchers noted that the principles of deep learning have been naturally applied within the Nurul Ulum Cindogo Islamic boarding school. For example, during the study of classical Islamic texts, students

are not merely expected to memorize or understand the text; rather, they are encouraged to delve into the meanings and moral values contained within it, making the learning process more meaningful and profound. This phenomenon is worth examining more deeply because it demonstrates that the principles of deep learning, which are widely promoted in modern education, have actually long been embedded in the educational traditions of Islamic boarding schools. However, there has been little research specifically examining the implementation of deep learning principles within traditional pesantren educational practices. Therefore, this study is essential to understand how pesantren implement deep learning curriculum principles in their educational practices. Consequently, the character development of students is not only religious but also fosters a strong sense of nationalism, critical thinking skills, and creative collaboration.

A number of previous studies indicate that the concept of deep learning is beginning to gain attention in the context of Islamic education. However, its application in Islamic boarding schools has not yet been clearly defined. In a previous study, an article titled *The Relevance of Deep Learning in Pesantren Education* (Wafi et al., 2025) found that pesantren have practically implemented a deep learning approach through learning activities that reflect cognitive engagement, reflective awareness, and a pleasant and contextual learning atmosphere. Furthermore, a second article, "Pesantren as a Prototype of Education with Deep Learning," examined the learning process at the Puncak Darussalam Islamic boarding school. This pesantren exhibits a pattern similar to the deep learning approach, evidenced by critical, reflective, and enjoyable learning experiences using traditional methods such as sorogan, bandongan, and iktisyaf (Maimun et al., 2025). Meanwhile, research at the Al-Kautsar Islamic Boarding School in Srengat, Blitar, identified that the relevance of the learning approach within the deep learning concept can enhance students' skills in reading Arabic texts (Nasrullah, 2025).

These three studies have identified the relevance and suitability of pesantren learning patterns with the concept of deep learning in general. However, none have specifically examined the concrete application of deep learning principles across various aspects of pesantren education. Therefore, this study addresses this gap by examining the concrete application of deep learning principles in pesantren education.

In the Indonesian context, deep learning is not part of the curriculum but rather a learning approach. The Minister of Primary and Secondary Education (Mendikdasmen) defines deep learning as a learning approach that prioritizes the creation of a learning environment and meaningful, conscious, and joyful learning processes through the holistic and integrated development of the mind, heart, emotions, and physical activity (Mu'ti et al., 2025). Hariyanti (2024) defines deep learning as a learning approach that emphasizes a deep mastery of concepts, not merely the ability to memorize or quickly recognize facts. Deep learning also encourages students to develop more complex and integrated understanding, thereby enabling them to apply their knowledge to real-life situations (Fitriani & Santiani, 2025). In the context of Islamic boarding schools, the implementation of deep learning not only strengthens academic understanding but also enriches learning with spiritual values and noble character.

This study aims to examine the principles of deep learning as they relate to

educational practices in Islamic boarding schools, specifically at the Nurul Ulum Cindogo Islamic Boarding School. Theoretically, this study is expected to contribute to the development of Islamic education literature, particularly by enriching research on Islamic boarding school education. This study is also expected to serve as an academic reference for future research related to pesantren education. Practically, for pesantren administrators, this study is expected to serve as evaluation material. Additionally, this study can serve as a basis for decision-making in implementing innovations and adaptations to the development of pesantren education in line with the times.

RESEARCH METHOD

This study employs a qualitative approach in the form of field research. The selected research site is the Nurul Ulum Cindogo Islamic Boarding School. This location was chosen based on initial observational findings indicating that teaching practices at this boarding school align with the principles of deep learning, even though they do not directly utilize the deep learning theoretical framework. In this study, the researcher serves as an instrument directly involved in the data collection process. To maintain objectivity, the researcher separated observation notes from personal reflections and validated the data with informants.

The data for this study were obtained from primary sources through observation and interviews with research subjects, including kyai or ustadz, administrators, and students. Secondary data were obtained from documentation of activities related to the research topic. The chosen data analysis technique was descriptive analysis. This technique was selected to describe learning activities at the Nurul Ulum Islamic Boarding School and their alignment with the principles of deep learning. The analysis process began with reading and examining all the data, identifying emerging patterns and findings, and then categorizing the findings based on indicators of deep learning principles. The results of the analysis are presented in the form of narrative descriptions supported by data quotes to strengthen the arguments. The validity of the analysis was ensured through triangulation and validation with informants.

The research was conducted in four stages: (1) preparation, including a literature review and obtaining research permits; (2) data collection through participant observation, interviews, and documentation; (3) data analysis using categorization to identify patterns of the application of deep learning principles; (4) writing up the research findings.

RESULTS AND DISCUSSION

RESULTS

Pesantren Education

Pesantren education not only emphasizes religious knowledge but also focuses on religious character education to foster a relationship with God (*hablum min-Allah*) and with fellow human beings (*hablum minannas*). Pesantren education is an Islamic educational system oriented toward the development of moral character, religious knowledge, and independence through activities and rules that must be followed by students (Syafe'i, 2017).

Learning in pesantren that focuses on textual materials generally employs traditional methods such as sorogan, bandongan, and halaqah (Kamal, 2020). Sorogan is a traditional pesantren learning method in which santri meet individually with the teacher (kyai) to recite or recite memorized passages directly. Bandongan is a classical learning method, wherein the kyai reads and explains the contents of the classical Islamic texts (kitab kuning), while santri take notes and listen to the kyai's explanations. This learning model includes activities such as translation, semantics, and the morphology of the texts (Rosyid et al., 2025). Meanwhile, halaqah activities involve group learning that includes discussions, debates, and the exchange of ideas. In implementing this method, a specific number of santri form a halaqah (group) led directly by a kyai, ustadz, or senior student to discuss and examine a predetermined issue (Ilham & HT, 2020).

Nurul Ulum Islamic Boarding School was originally an educational institution consisting of a prayer hall and a religious elementary school. After several years, as the number of students wishing to reside on campus increased, it was decided to establish a dormitory, which is now known as the Islamic Boarding School. Like most Islamic boarding schools, Nurul Ulum Cindogo Islamic Boarding School also uses the bandongan method for studying classical Islamic texts, with memorization conducted using the sorogan method. For other activities, such as foreign language development, accelerated reading of classical Islamic texts, and Quranic studies, the school employs the halaqah or group method, tailored to each santri's competencies and interests.

The educational process at the Nurul Ulum Islamic Boarding School goes beyond classroom and extracurricular learning activities. The boarding school instills character education through daily routines that are treated as mandatory rules for all students to follow from morning until night. For example, group prayer, although legally considered a sunnah, is treated as obligatory at the boarding school, which in turn trains students to be more punctual.

In principle, pesantren education emphasizes not only the study of knowledge but also the practices of daily life that apply the knowledge taught to the students. For example, in the study of fiqh regarding prayer, it is not merely about theoretical knowledge; rather, the pesantren places greater emphasis on the actual practice of prayer itself. Students are accustomed to praying on time in congregation and are required to make it a habit to perform supererogatory prayers. In addition to fostering discipline, the significance of this practice is that students are expected to become righteous individuals who are responsible for their obligations as Muslims.

Deep Learning in Islamic Boarding School Education

Mindful learning is one of the principles of the deep learning concept, which emphasizes the importance of students' full awareness in every learning process. Under this principle, students are encouraged to be fully present—both physically and mentally—so that each learning experience can be absorbed and understood more deeply. Learning is no longer viewed as a routine task to be completed, but rather as a process undertaken with full attention, reflection, and self-awareness.

Mindful learning occurs when students fully realize their role. They not only know what they are learning, but also understand why it is important and how that knowledge is relevant to their life journey (Rahmandani et al., 2025). Conscious

learning occurs when students possess metacognitive awareness—the ability to understand the urgency and relevance of learning to their lives, while also being able to reflect on and evaluate their own thinking processes independently. Students are not merely physically present in the classroom but are fully engaged in the learning process. They not only know the material being studied but also understand the importance of knowledge relevant to their life journey.

In the context of pesantren education, the principle of mindful learning can be seen in the reflective experience shared by one of the students during a research interview. The student stated that before studying in the pesantren environment, he already knew that obligatory prayers were a duty, but that knowledge alone had not motivated him to pray consistently. After living in the pesantren and receiving guidance from the ustadz, his understanding of prayer underwent a fundamental change. Prayer was no longer viewed merely as an obligation, but rather as a meaningful form of interaction between himself and God. This journey illustrates the process of developing metacognitive awareness, where the student not only knows what to do but has reached a deep understanding of why it is important for his life. This also aligns with Michael Fullan's concept of deep learning, specifically "character"—as evidenced by significant changes in attitude between before and during his time at the pesantren—and "critical thinking"—as evidenced by his increased understanding of the meaning of prayer for himself. Below is an excerpt from an interview with one of the students:

"Before entering the pesantren, I understood that performing ṣalāh (prayer) is obligatory; however, I often neglected it. After studying in the pesantren, I came to realize that prayer is not merely an obligation, but also a form of personal interaction with God, as frequently emphasized by the ustadz. At present, I not only consistently perform the obligatory prayers on time, but also develop a genuine inclination to observe voluntary (sunnah) prayers".

The various activities undertaken by students at the Islamic boarding school help foster a sense of learning within them. Although the schedule of activities at the boarding school is quite demanding and requires a high level of discipline, the students still strive to participate in every activity with the full awareness that everything they do is part of a long-term process of self-development. This awareness is evident in the students' habit of automatically moving to participate in activities as soon as the bell rings, without needing encouragement or orders from others. This indicates that the students' motivation to learn no longer depends solely on external factors but has grown into an inner awareness of how crucial the learning process is for their personal development and character formation.

In addition, a high regard for etiquette and manners toward kyai, ustadz, and fellow students is also a key characteristic of life in a pesantren. At the Nurul Ulum Islamic Boarding School, researchers observed a strong sense of ta'dzim among the students. Ta'dzim itself refers to an attitude of respect and reverence manifested through polite behavior, courteous speech, and sincere obedience toward teachers or elders—not out of compulsion, but from a deep awareness of their status and contributions to the educational process. This attitude is reflected in the way students speak, behave, and even walk when in the presence of the

boarding school's teachers and caregivers. It is evident in how students interact with the kyai and teachers. This can be observed through speaking in a soft tone, avoiding direct eye contact with the kyai while speaking, and maintaining a posture that conveys deep respect. Such behavior not only represents a form of social respect but also reflects the values held by the students—namely, the belief that respecting teachers is part of the ethics of learning and is believed to be connected to the blessings of the knowledge acquired. In this context, ethical values are not merely understood conceptually but are also manifested in daily social practices within the pesantren environment.

Overall, learning at Islamic boarding schools is not only focused on the delivery of academic content but is also designed to foster students' awareness of the meaning behind every learning process they undergo. This finding aligns with the principles of mindful learning, which emphasize the importance of actively engaging students in the learning process so they can understand the meaning of what they are learning and be able to reflect on and evaluate it independently (Azzahra & Jaya, 2025). This awareness serves as the foundational starting point before learning can evolve into a meaningful learning experience and ultimately be perceived as an enjoyable process. Thus, students' awareness is understood as the primary gateway enabling them to engage actively and reflectively in a deep learning process.

Meaningful Learning in Pesantren Education

Meaningful learning is not merely about absorbing as much information as possible, but rather about how a student is able to perceive the connection between what they learn and the life they actually lead. Meaningful learning requires a learning process that does not stop at the level of conceptual understanding alone, but must be able to touch the students' awareness of the meaning and purpose of the knowledge they acquire, so that learning truly has a tangible impact on their personal development and lives (Mu'ti et al., 2025). In this sense, meaningful learning occurs when students can meaningfully connect new knowledge with prior knowledge, thereby creating relevant and deep learning experiences (Gupte et al., 2021).

Meaningful learning from a deep learning perspective occurs when students not only gain a deep understanding of a concept but are also able to apply it in real-life contexts. In this study, this is evident in the education at the Nurul Ulum Cindogo Islamic Boarding School through a learning design that emphasizes the practice and experience of the values being taught. A statement from a source at the boarding school's Education Office, noting that the boarding school does not merely present knowledge theoretically but also emphasizes practical aspects in all its activities, indicates an effort in instructional design that encourages students to experience and internalize values in their daily activities. The following is a statement from the Education Office of Pondok Pesantren Nurul Ulum:

"In principle, learning in Islamic boarding schools (pesantren) does not merely emphasize the transfer of knowledge in a theoretical sense. Rather, it places greater emphasis on practical engagement through various structured activities embedded within the educational environment. Consequently, the learning process acquires a distinctive sense of meaningfulness for the students (santri).

The sorogan method, commonly employed in pesantren, actively involves students and positions them at the center of the learning process. Before presenting their recitation of classical texts (kitab) to the teacher (ustadz), students typically engage in independent preparation. This includes studying the material in advance and consulting various learning resources, such as seeking guidance from senior students or utilizing Arabic dictionaries to comprehend the meanings of the texts to be read. Within this framework, the three pillars of deep learning are inherently embedded, as students participate directly and wholeheartedly in the learning process. Such active and reflective engagement fosters a learning experience that is not only enjoyable but also meaningful and conscious”.

The significance of this learning process is also evident in the sorogan method implemented at the Nurul Ulum Cindogo Islamic boarding school. In this method, students do not merely passively receive material from their teachers; rather, they are required to independently interpret the text of the book, seek references from various sources such as books, religious texts, or peers, and account for their understanding before the instructor. This process directly encourages students to build a deep and contextual understanding rather than merely memorizing texts. As stated by the informant, in this method, students are required to interpret the text themselves and explain its meaning in front of the teacher, after which any misunderstandings are corrected. This reflects an active process of knowledge acquisition and constitutes a fundamental condition for meaningful learning.

A culture of mutual aid is also prominent in social life within the pesantren community. Students are accustomed to helping one another when facing difficulties, so that the values of togetherness and solidarity develop naturally through their interactions. Awareness of the importance of tolerance, collaboration, and empathy does not arise solely from formal instructions or written rules, but develops through continuous shared living experiences. Thus, knowledge regarding the importance of togetherness does not remain merely in the cognitive realm, but transforms into a deeply internalized value within the students and is realized in their daily lives.

Learning at the pesantren is not limited to the academic realm but is also reflected in the overall dynamics of daily life. In a subsequent interview conducted by the researcher with another source who is also a student at the Nurul Ulum Pesantren the following was stated:

”In my view, all of our daily activities—from waking up in the morning until going back to sleep—are meaningful. We find a sense of enjoyment in going through them. Although we sometimes feel unmotivated or fatigued, we remain aware that everything taught in the pesantren is intended to guide our future, so that we do not lose our way”.

This reinforces the researchers’ argument that all activities at the pesantren from waking up until returning to rest hold their own significance for the students’ personal development. This statement indicates that the students have successfully internalized the values and meaning of every activity they undertake. Various routines, such as waking up before dawn, the culture of queuing, and the intensity of activities coupled with time constraints, indirectly

train students to develop discipline, responsibility, and self management skills in their daily lives.

These conditions demonstrate that Islamic boarding schools are capable of fostering a social ecosystem that functions not only as a space for the transmission of knowledge but also as an environment for character development and the cultivation of social values. Through ongoing collective life experiences, students are educated to become individuals who are sensitive to their social environment, possess collaborative skills, and are prepared to contribute positively to community life. This finding aligns with the principle of meaningful learning, which emphasizes the importance of the connection between learning experiences and real life contexts, as well as the students' ability to apply knowledge and values to their daily lives.

Joyful Learning in Pesantren Education

Joyful learning is the third principle of the deep learning concept, which emphasizes the importance of creating a positive, warm, and enthusiastic learning environment. In this principle, joy in learning is viewed not merely as entertainment, but as a psychological state that actually supports the creation of a more effective and meaningful learning process. When students feel comfortable and enjoy the learning process, they tend to be more open, more active, and better able to absorb and retain the material being studied.

Joyful learning requires that the learning process be designed and implemented in an environment that naturally fosters curiosity, enthusiasm, and active engagement among students (Mu'ti et al., 2025). Enjoyment in learning does not necessarily mean learning that is free from challenges, but rather learning that enables students to feel motivated, valued, and find satisfaction in every process they undergo. Thus, joyful learning fosters the creation of a conducive learning environment, where every individual feels safe to explore, ask questions, and even make mistakes as part of the growth process.

Enjoyable learning is a learning process that is not merely the result of a lively classroom atmosphere or entertaining activities, but rather occurs when learners' cognitive and emotional engagement are present simultaneously (Wijaya & Prayitno, 2026). Cognitive engagement without emotional engagement will only lead to superficial and rigid information processing. Emotional engagement without cognitive engagement will only result in temporary enjoyment without leaving meaningful understanding for students. Therefore, both must be present simultaneously to create a learning environment where emotional attachment to the material being studied can support increased motivation for students.

As previously explained, joyful learning is not merely learning in a lively classroom atmosphere or through entertaining activities. Rather, enjoyable learning involves the simultaneous cognitive and emotional engagement of students in the learning process, which can boost their motivation to learn. In pesantren education, students are always actively involved in every aspect of their learning. Because of this direct involvement, students consciously begin to understand the urgency of learning and are able to grasp the meaning of what they are studying, which in turn fosters a sense of joy and even a willingness to engage in the process.



Figure 1. Foundations of Pesantren Education

In the context of pesantren, the principle of joyful learning has, in fact, long been a part of the students' daily lives. The close knit sense of community, traditions of collective learning such as halaqah and musyawarah, and the family-like dynamics of interaction among students create a learning environment that naturally fosters joy and warmth. It is this joy that students experience in their life at the pesantren that ultimately fuels their sustained enthusiasm for learning not out of compulsion, but because of a love for knowledge and a sense of community that grows from within.

Enjoyable learning at the Nurul Ulum Islamic boarding school takes the form of various authentic activities. In terms of policy, the school administration strives to create a conducive environment so that students feel at home and comfortable learning within the boarding school setting. In terms of teaching methods, this is reflected in the halaqah (group) activities, which organize students according to their talents and learning interests. There are study groups for English and Arabic language development, accelerated methods for reading classical Islamic texts, and basic Tawhid and Nahwu. In these halaqah activities, students learn in groups according to their interests and are further classified based on the proficiency levels of each study group.

DISCUSSION

Researchers observed that this activity was the one the students participated in with the most enthusiasm. After the Isha prayer in congregation, the students began heading to their respective study groups. In the Nubdzatul Bayan study group, the students begin reviewing the verses they have memorized through a process called lalaran. This involves reciting the verses with a melody, accompanied by simple musical instruments. The lalaran process reflects the principle of enjoyable learning, as it creates a pleasant and collaborative learning atmosphere.



Figure 1. : Lalaran Nadzom Practice Using Simple Tools

The students also find joy in learning through the sorogan method used by the ustadz or kyai. They discover a sense of camaraderie that develops as the students prepare their scripture readings in the evening before presenting them to the ustadz or kyai the following day. This was expressed by one of the students in an interview conducted by the researcher:

"Usually, at night we study together with our friends before submitting our recitation of the classical texts (kitab) the following morning. We help each other when someone does not yet understand the material. If something remains unclear, we ask senior students (santri senior). Because we learn collaboratively, the learning process feels enjoyable and engaging".

This statement illustrates that working together to prepare learning materials is, in fact, a source of joy and enthusiasm in itself for the students. The learning process does not only take place in the presence of the teacher or religious leader, but also develops organically among the students themselves through warm and supportive interactions. Furthermore, based on the researcher's observations, the students also appear highly enthusiastic when the ustadz or kyai corrects misunderstandings. These moments of correction do not instill fear or self-doubt; rather, they are met with enthusiasm and full attention, demonstrating that the learning environment at the pesantren is built within an open, warm, and enjoyable atmosphere.

One of the students also personally experienced the joy of learning. When asked about the most memorable aspect of life at the boarding school, he said:

"The aspect I like most in the pesantren is the sense of togetherness. Together with friends, we learn many things, such as mutual respect, helping one another, and many other positive values".

This statement reflects that the joy experienced by the students does not stem solely from the learning process in the classroom, but also from the social values that grow and develop in their daily lives within the pesantren environment. The sense of community that forms among the students indirectly serves as an authentic medium for character education, where attitudes of mutual respect and mutual aid are not formally taught, but are lived out and practiced directly in their daily lives. Meanwhile, the student, who has begun to understand the true meaning of prayer, now finds joy in performing voluntary prayers. This clearly demonstrates that true joy in learning stems from a deep understanding. Once a student understands the obligations and consequences of an activity, performing that activity becomes a source of joy.

CONCLUSION

The findings of the study conducted at the Nurul Ulum Cindogo Islamic Boarding School indicate that pesantren education inherently reflects the principles of deep learning, namely mindful learning, meaningful learning, and joyful learning, which are not formally derived from modern pedagogical theories but have long been organically embedded in its traditions, daily practices, and educational culture. Mindful learning is demonstrated through students' metacognitive and spiritual awareness, where they are guided not only to understand religious knowledge conceptually but also to reflect on its meaning and moral significance through structured routines, continuous guidance from ustadz and kyai, and the internalization of adab, so that learning becomes a moral and spiritual journey shaping their character. Meaningful learning is realized through contextual and experiential approaches such as sorogan, which encourage active interpretation and presentation of texts before the teacher, while communal life reinforces values of discipline, responsibility, solidarity, and mutual assistance, making learning extend beyond cognition into lived experience. Joyful learning emerges through collaborative and interactive activities such as halaqah discussions and lalaran nadzom, which create engagement, togetherness, and intrinsic motivation as students find enjoyment in understanding the relevance of knowledge they study. Overall, these three principles are not applied separately but are deeply integrated into a holistic learning system in which awareness, understanding, and emotional engagement reinforce one another, demonstrating that pesantren education at Nurul Ulum Cindogo has long embodied the essence of deep learning in its most authentic and naturally developed form.

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