PROCEEDINGS
International Conference on Education
Faculty of Tarbiyah | UIN Syekh Wasil Kediri
E-ISSN: 3025-6828

Volume 3, 2025

Deep Learning Model in Personalizing Learning Based on the "Love Curriculum" in Islamic Boarding School

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Abstract:
This study explores innovative deep learning-based personalized learning and the "Love Curriculum" at the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan. The traditional educational paradigm is less adaptive to student heterogeneity, triggering the urgency for personalization. The deep learning model offers solutions for content adaptation and dynamic feedback, while the Curriculum of Love instills the values of monotheism. Through a case study, this research analyzes the implementation of these models. Data was collected from the director, teachers, and students through interviews, observations, and documentation, with data validity verified using pattern matching. The results show the systematic application of personalization, beginning with comprehensive diagnostic assessments for learning grouping and peer tutor empowerment. The learning philosophy of "joyful, conscious, meaningful" is emphasized with hands-on practices that foster spiritual empathy. All activities are based on the "unification curriculum" (monotheism). The seven pillars of Islamic Boarding School learning: one day one verse, one hadith one presentation, one week three languages, one student one laptop, one activity one paragraph, one week three *fashl* and one week three themes, integrate spirituality, language, literacy, and digital technology. This model develops student holistically: intellectually, spiritually, and characteristically, with the ultimate goal of monotheism.

Keywords: Deep Learning Model; Learning Personalization; Love Curriculum

Article History:
Received : 26 July 2025
Revised : 28 August 2025
Accepted : 30 September 2025

Introduction

Education in the contemporary era faces increasingly complex demands to provide learning experiences that are not only effective, but also adaptive and relevant to each individual. This reality stems from a deep recognition that each learner is a unique entity with different characteristics, learning styles, comprehension speeds, and needs (Abu-Rasheed, Weber, and Fathi 2023; Troussas et al. 2025). The traditional educational paradigm, which tends to be uniform or "one size fits all," has proven inadequate in responding to this heterogeneity, often failing to optimize the full potential of each student (Abu-Rasheed et al. 2023). Consequently, personalized learning has emerged as one of the most crucial pedagogical approaches aimed at aligning teaching materials, instructional methods, and learning environments specifically with the individual profiles of learners. The goal is to foster significant improvements in learning outcomes, active engagement, and student satisfaction, as well as to cultivate a commitment to lifelong learning (Abu-Rasheed et al. 2023).

Rapid advances in information and communication technology, particularly the evolution of artificial intelligence and deep learning, have opened a new chapter in addressing the complexities of challenging education (Naseer et al. 2024; Silva, Godwin, and Jayanagara 2024; Vieriu and Petrea 2025). Deep learning, as a branch of AI inspired by the structure and function of the human brain, enables systems to learn data representations at a high level of abstraction, allowing for sophisticated pattern analysis and decision making. In the context of education, deep learning models are not merely tools, but innovators capable of revolutionizing the learning experience through content adaptation, comprehensive modeling of student characteristics and progress, and the provision of dynamically customized feedback mechanisms. (Firdausiah Mansur, Yusof, and Basori 2019; Zhong et al. 2020). AI-based adaptive learning systems have the transformative capacity to change the learning experience of every individual, including learners with special needs, by utilizing machine learning models, natural language processing, and real-time data analysis to provide the most effective lessons, feedback, and support (Ayeni et al. 2024). This not only accelerates the knowledge acquisition process, but also increases engagement and learning outcomes (Silva et al. 2024).

The concept of deep learning in education emphasizes deep understanding that goes beyond mere memorization, encouraging critical thinking, active engagement, and real connections between learning materials and students' lives. This is in line with the three main pillars of the Deep Learning Curriculum, namely Mindful Learning (learning that is attentive and conscious), Meaningful Learning (learning that is relevant and meaningful), and Joyful Learning (learning that is enjoyable). Collectively, these three pillars strengthen the potential of deep learning in creating learning paths that are tailored and responsive to the dynamics of students' cognitive and emotional needs (Naseer et al. 2024; Vistorte et al. 2024).

Along with technological advances and the need for personalization, education has also become increasingly aware of the essence of instilling character and moral values. In this context, the "Curriculum of Love" has emerged as a pedagogical approach that aims to internalize fundamental values such as love, togetherness, and ecological responsibility from an early age. This curriculum is based on The Five Love Principles, five core values that include: Love for God Almighty, Love for Self and Others, Love for Knowledge, Love for the Environment, and Love for the Nation and Country. The integration of Islamic ethics into the educational curriculum has proven essential in developing character and fostering morality in various fields of study (Ibrahim et al. 2024). Character education refers to a learning approach that aims to help students develop moral and ethical values, such as honesty, responsibility, and empathy. The

integration of these values into the curriculum and school activities, together with the active support of teachers, families, and communities, is a major effort in character education to build individuals who are highly ethical and responsible in every aspect of their lives (Tiara Ramadhani et al. 2024). This educational model, which emphasizes values and character, offers significant benefits not only for students, but also for teachers, families, and the entire school ecosystem (Puyo 2020).

However, the comprehensive implementation of personalized learning faces significant obstacles in the existing education system. The limited number of educators and the increasing diversity of learning styles and student needs are the main obstacles. Heterogeneous classes, both offline and online, consist of groups of students with diverse social and cultural backgrounds, varying prior knowledge, cognitive styles, motivations, and learning preferences (Troussas et al. 2025). Therefore, a universal instructional approach is often not effective enough (Troussas et al. 2025). The challenge of managing student heterogeneity has encouraged efforts at personalization, but approaches such as separating students based on ability tend to increase inequality (Dumont and Ready 2023). In addition, overcoming the challenges of teaching in complex and multicultural classrooms requires clear pedagogical strategies and policies (Chimbunde and Moreeng 2024).

The gap between the urgent need for personalization and the current capacity of the education system is a crucial issue. In the Indonesian context, particularly in Islamic educational institutions such as Islamic Boarding School, this challenge has its own nuances. Islamic Boarding School, as dynamic educational institutions, have adapted to the changing times and advances in science and technology (Khusumadewi 2022). Although Islamic boarding schools have distinctive characteristics with strong values that shape social interactions between clerics, teachers, and students (Khusumadewi 2022), and aims to empower students and the community (Anggadwita, Dana, and Ramadan 2021), they still face complexities in individualizing learning. The diversity of students' backgrounds and abilities, coupled with the unique spiritual and academic demands of Islamic Boarding School life, requires innovative solutions to ensure that each student can reach their maximum potential within a holistic educational framework (Ghufron and Nasir 2019; Zakaria and Yusmaliana 2023).

Based on the urgency and complexity of this issue, this study examines the application of a curriculum-based deep learning model as an innovative and transformative solution for personalizing learning in Islamic boarding schools. The integration of deep learning in personalized learning has been proven to provide a tailored and efficient learning experience (Firdausiah Mansur et al. 2019; Zhong et al. 2020). Deep learning models have the ability to analyze student behavior patterns, provide instant feedback, and dynamically adapt learning materials, thereby enabling more effective implementation of personalized learning (Trisoni et al. 2024; Vistorte et al. 2024). AI can also help teachers focus their time on individual support, social-emotional skill development, and a more collaborative classroom culture.

The synergy between deep learning oriented towards cognitive efficiency and adaptation, and the Love Curriculum centered on instilling noble values, has the potential to create a personalization model that is not only academically effective, but also holistic in shaping the character and spirituality of students. This combination aims to produce students who are not only intellectually intelligent and adaptable to technological developments, but also have noble character, deep spiritual awareness, and a high level of social and environmental awareness. This comprehensive approach contributes significantly to the holistic development of students, improving their ability to manage

emotions, build positive relationships, and ultimately improve their academic performance (Vistorte et al. 2024).

This study plays a crucial role in adding to the academic literature on the implementation of deep learning integrated with spiritual and moral values in the context of Islamic boarding schools in Indonesia. This study explores how advanced technology can synergize with value-based curricula to create a personalized, effective, and meaningful learning environment, especially in Islamic educational environments that are rich in tradition but also open to innovation.

Based on the background and issues described above, the purpose of this study is to describe the application of the deep learning model in personalizing learning based on the Love Curriculum in Islamic boarding schools. This study focuses on analyzing how the integration of deep learning technology can adapt and individualize the learning process, while strengthening the instillation of Pancacinta values in a curriculum that is relevant to the context of Islamic boarding schools.

This research was conducted at the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan. This boarding school was chosen because it has unique and innovative characteristics that are highly relevant to the focus of the research. These unique characteristics include seven pillars of excellence in learning: one day one verse, one hadith one presentation, one week three languages, one student one laptop, one activity one paragraph, one week three *fashl* (yellow book themes), and one week three themes (tajwid themes). In addition, this Islamic Boarding School has implemented learning based on the characteristics of the student, an early personalization initiative that can serve as a strong foundation for deep learning integration. The student at this Islamic Boarding School are also known to be productive in producing various works, both books and digital content, reflecting a learning environment that is conducive to the development of creativity and the application of knowledge. Furthermore, the educational objectives at this Islamic Boarding School focus on monotheism, which the caretakers refer to as the "unification curriculum," namely love for Allah, love for the Prophet, and love for fellow human beings. This philosophy is very much in line with the concept of the Love Curriculum and provides a solid spiritual foundation for the personalized learning that will be studied. These unique characteristics make Padepokan Kyai Mudrikah Kembang Kuning Pamekasan an ideal case study location to investigate how deep learning models can be effectively applied in personalized learning based on spiritual and moral values in the Islamic Boarding School environment.

Methods

This study uses a case study design (Assyakurrohim et al. 2022) because it allows for in-depth exploration of contemporary phenomena. This design is suitable for gaining a comprehensive understanding of "how" and "why" a phenomenon occurs within certain boundaries. By focusing on a single case, this study aims to reveal the rich details and complexity of the interactions between technology, pedagogy, and spiritual values in the Islamic Boarding School environment (Miller, Porter, and Barbagallo 2023). This approach allows researchers to holistically investigate the dynamics of ongoing learning personalization, as well as how elements of deep learning and the Love Curriculum are integrated and internalized by research subjects.

Research subjects were selected using purposive sampling to ensure the relevance and depth of the data collected (Alam 2021). The research subjects consisted of the principal of the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan, who has policy insights and a strategic vision for the Islamic Boarding School; teachers who are directly involved in the learning process and curriculum

implementation; and 15 students. Teachers and student were selected based on certain criteria, such as active involvement in deep learning-based learning programs and the Cinta Curriculum, as well as their willingness to share their experiences. The selection of this diverse group of subjects aims to obtain a rich, multi-stakeholder perspective on the experiences, challenges, and successes of implementing the model under study.

Data was collected through three main techniques: interviews, observation, and documentation, which enabled data triangulation to improve the validity of the findings. In-depth and semi-structured interviews were conducted with the principal, teachers, and students. Interviews with the principal explored information about policies, the philosophy of the Love Curriculum, and deep learning implementation strategies. Interviews with teachers focused on their experiences in designing and delivering personalized learning, the use of deep learning technology, and challenges and adaptations in the field. Interviews with students explored their learning experiences, perceptions of personalization, and understanding and internalization of the values of the Love Curriculum.

Participatory and non-participatory observations were conducted in the learning environment, including in classrooms and daily Islamic Boarding School activities. These observations aimed to directly observe the practice of personalized learning, interactions between teachers and students, the use of learning tools, and the manifestation of the values of the Love Curriculum in the behavior and activities of students.

Documentation data collection includes analysis of related documents such as modules, deep learning-based teaching materials, student evaluation notes, boarding school program reports, and students' works (books, digital content). This document analysis will complement the interview and observation data by providing contextual information and data verification.

To ensure data validity and reliability, this study will use pattern matching techniques (Attard Cortis and Muir 2022). Pattern matching is a qualitative data analysis strategy that involves comparing patterns observed from empirical data with patterns predicted theoretically. (Vargas-Bianchi 2025). In this study, the predicted patterns will be derived from the literature and conceptual framework on personalized learning, deep learning, and the principles of the Love Curriculum. Data collected from interviews, observations, and documentation will be analyzed to identify patterns that emerge regarding how the deep learning model is applied, how the Love Curriculum is integrated, and how both influence the student's personalized learning experience. Consistency between the patterns found in the field and the patterns hypothesized from theory will strengthen the internal validity of the findings. Conversely, discrepancies will prompt a review or development of the theory. This process is carried out iteratively, where new data is continuously validated against existing patterns, enriching the understanding of the phenomenon being studied (Bouncken et al. 2021).

Results and Discussion

Personalized Learning Based on Diagnostic Assessment and Peer Tutor Empowerment

Comprehensive diagnostic assessments form the initial foundation for personalized learning at the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan. Field data obtained from interviews with the director and observations of early learning activities show that this assessment is not limited to the intracurricular domain, but also covers extracurricular and cocurricular aspects, reflecting the Islamic Boarding School's understanding of the comprehensive development of student. This process is designed to map the level of knowledge, skills,

and potential of students related to the seven main pillars of the boarding school before the formal learning process begins. This is in line with literature that emphasizes the importance of diagnostic assessment to identify students' initial weaknesses and map their abilities before effective learning begins (Alfageh et al. 2024). Research shows that effective diagnostic assessments can significantly improve student learning outcomes (Wu and Yu 2025).

The results of this diagnostic assessment form the fundamental basis for the formation of heterogeneous learning groups. Uniquely, students with greater abilities are identified and empowered to act as peer tutors, facilitating collaborative learning and mutual assistance among their peers. This peer tutoring practice is highly relevant to research findings that show the effectiveness of peer teaching or peer tutoring methods in improving Al-Qur'an reading skills and English language learning (Moeyaert et al. 2021), even contributing to a decrease in failure rates and achievement gaps. Furthermore, this collaborative learning model, which allows students to support each other and share knowledge, is very much in line with Islamic values that encourage mutual assistance and togetherness (Faris Anwar, Salsabila Faruza, and Gusmaneli Gusmaneli 2024).

Learning Philosophy: Joyful, Mindful, and Meaningful within the Framework of the Love Curriculum

Learning at the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan is designed with the philosophy of "joyful, mindful, and meaningful." This philosophy is explicitly expressed by the principal and teachers, and is reflected in the observation of daily learning activities. This concept is very much in line with the three main pillars of the Deep Learning Curriculum, namely Mindful Learning, Meaningful Learning, and Joyful Learning. These three pillars emphasize deep understanding that goes beyond mere memorization, encouraging critical thinking, active engagement, and real connections between learning materials and students' lives (Han 2022). The ultimate goal is to foster significant improvements in learning outcomes, active engagement, and student satisfaction, as well as to cultivate a commitment to lifelong learning (Abu-Rasheed et al. 2023; Inthanon and Wised 2024).

The "meaningful" aspect of learning is emphasized through a focus on the practical application of theory. A concrete example shared by one of the teachers and observed directly during the study was the practice related to zakat al-fitr. Students were not only taught the theory of zakat, but were also directly involved in weighing rice, identifying *mustahik* (those eligible to receive zakat) around the Islamic Boarding School, and independently delivering zakat to them. This experience, which involves direct interaction with social reality, aims to foster empathy and a deep spiritual awareness of their role as servants of Allah and caliphs on earth. This kind of contextual and practical learning approach is supported by literature showing that the development of contextual learning models in Islamic education aims to improve applied knowledge and foster virtue. The principles of contextual learning have a strong foundation in the Islamic perspective, and their implementation can create a conducive learning environment. Project-based learning models are also a practical approach that can be applied in Islamic educational institutions (Maros et al. 2023). Contextual learning helps students connect subject matter to real life, improving their understanding and application of concepts (C and C. 2020; Hermansyah et al. 2019). The concept of meaningful learning is also emphasized in cognitive theory, which is relevant to students' realities and involves the

activation of cognitive functions (Efgivia et al. 2021; Hung 2019; Levin, Semenov, and Gorsky 2025; Mystakidis 2021).

This learning philosophy cannot be separated from the "Unification Curriculum" or monotheism, as explained by the headmaster of the Islamic Boarding School. This concept is at the heart of the "Curriculum of Love" launched by the Islamic Boarding School, in which all activities of the student, both academic and non-academic, lead to the formation of individuals who are monotheistic. This Curriculum of Love, as described in the research background, is presented as a pedagogical approach that aims to internalize fundamental values such as love, togetherness, and ecological responsibility from an early age. This curriculum is based on 'The Five Love Principles', five main values which include: Love for God Almighty, Love for Self and Others, Love for Knowledge, Love for the Environment, and Love for the Nation and Country. The integration of Islamic ethics into the education curriculum has proven to be essential in developing character and fostering morality in various fields of study, in line with the Love Curriculum's goal of forming positive habits and an understanding of virtue in the daily lives of student. This means that all knowledge and experiences gained by students aim to increase their awareness as servants of Allah and caliphs on earth. The integration of Sufi values into the Islamic religious education curriculum has been proven to shape students' attitudes, behavior, and character (Faris Anwar et al. 2024; Rahmat and Yahya 2021; Thalib 2020). The Sufi approach in Islamic education seeks to develop spiritual awareness and noble character (Herni, Junaidi, and Suharyanto 2021). The concept of scientific integration in the Islamic Boarding School curriculum also aims to shape a balanced personality between science and faith. Values education from an Islamic perspective emphasizes the formation of a whole person, developing physical and spiritual potential, and fostering harmonious relationships with Allah, humans, and the universe. The integration of Islamic ethics into this educational curriculum is essential in developing character and fostering morality in various fields of study, which goes beyond simply understanding right and wrong, and is oriented towards forming positive habits in life. Thus, the Love Curriculum and its learning philosophy provide a holistic framework that goes beyond the cognitive dimension, embracing the spiritual, emotional, and social development of students.

Seven Pillars of Learning: The Foundation of Holistic Deep Learning in Islamic Boarding Schools

The Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan has developed seven pillars of learning that are the target achievements for each student. These pillars, which are explained in detail by the director and teachers and documented in the boarding school program, reflect a systematic effort to realize deep learning that integrates various aspects of student development: spiritual, language, literacy, and digital technology. Collectively, these pillars indicate the implementation of deep learning at the boarding school, where each pillar focuses not only on knowledge acquisition, but also on the development of practical skills, character building, and the internalization of values through structured and measurable activities.

1. **One Day One Verse:** This pillar emphasizes consistent memorization of the Qur'an. Every day, students memorize one verse, with a target of memorizing one juz in three months. This fosters spiritual discipline and memorization skills, which are important foundations in the Islamic scholarly tradition. Observations show that there are scheduled and monitored memorization sessions, underscoring the Islamic Boarding School's commitment to this pillar.

2. **One Hadith One Presentation:** This pillar is unique in integrating hadith memorization with presentation skills and parental involvement. Students are required to memorize and present one complete hadith, including its chain of transmission and text, to their parents during weekly visits. Parent involvement in this educational process is facilitated by asking them to listen to and record the students' presentations using smartphones, which also cleverly minimizes unnecessary gadget use by students. This demonstrates a strong learning partnership approach, where parents become an integral part of the learning evaluation and support system. It is also in line with the Islamic Boarding School's efforts to empower the community, not only limited to religious activities but also to community development programs.
3. **One Week Three Languages:** With the goal of mastering Arabic, English, and Mandarin, this Islamic boarding school prepares students to face the global world. This pillar demonstrates a commitment to cross-cultural communication skills, which are crucial in the 21st century. Interviews with the director indicate that this is a response to the demands of the times and the need for students to interact in various global contexts.
4. **One Student One Laptop:** This pillar is clear evidence of the Islamic Boarding School's adaptation to developments in digital technology. Each student is provided with a high-specification laptop and various types of cameras. The initial target is ten-finger typing proficiency, which will be progressively improved until students are able to produce digital content. This reflects the Islamic Boarding School's understanding of digital literacy and its role in preparing students for the future, in line with the Islamic Boarding School's role in the digital era, which demonstrates adaptation to technology for learning. AI can help teachers focus their time on individual support and social-emotional skills development (Gouseti et al. 2025). The use of digital technology enhances personalization and efficiency in learning, and can support content creation and decision-making processes (Ayeni et al. 2024; Butcher and Powell 2005; Li 2022; Schmid, Pauli, and Petko 2023; Zou et al. 2025).
5. **One Activity One Paragraph:** Promoting literacy and critical thinking, this pillar requires students to read one book and write a summary or reflection on it. This develops reading comprehension, analysis, and written expression skills, which are important foundations for deep learning. Documentation shows that there is a list of recommended books and a clear format for writing reflections.
6. **One Week Three Fashl:** This pillar directs students to read, interpret, understand, and present at least three themes (*fashl*) from the yellow book. This is a bridge between classical Islamic scholarly tradition and contemporary interpretation, ensuring that students remain connected to the intellectual heritage of the Islamic Boarding School. Observations of yellow book classes show in-depth discussions and structured presentations.
7. **One Week Three Theme:** Related to tajwid science, students are targeted to identify, understand, interpret, and present three themes using smart TV technology. Achieving this target not only demonstrates mastery of tajwid but also technological skills in presentation. Interestingly, this pillar is also one of the requirements for student to be able to return home once a month, providing an external incentive that supports learning motivation.

These seven pillars collectively form a learning system that is not only oriented towards knowledge acquisition, but also towards the development of practical skills, character building, and the internalization of values through structured and measurable activities. This shows how Islamic boarding schools apply the concept of deep learning

holistically, covering cognitive, affective, psychomotor, and spiritual aspects (Zakaria and Yusmaliana 2023). The integration of deep learning in personalized learning has been proven to provide a tailored and efficient learning experience (Merino-Campos 2025; Naseer et al. 2024), and deep learning models have the potential to analyze student behavior patterns, provide instant feedback, and dynamically adapt learning materials (Vistorte et al. 2024; Zhai et al. 2021). Deep learning also emphasizes deep engagement, broad understanding, connecting ideas to prior knowledge, collaboration, and higher-level thinking. (Liu, Zhao, and Sofeia 2022). This in-depth learning also aims to produce a comprehensive and interesting understanding of the subject matter (Otto et al. 2020).

Deep Learning Model: The Unique Characteristics of the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan

Field data analysis allows for a comparison between the deep learning model applied at the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan and more general deep learning frameworks, such as those that may be adopted by the Ministry of Primary and Secondary Education in the context of national education. Although there is no standard framework that directly compares the two patterns, the points of comparison synthesized from the research findings highlight the uniqueness of the Islamic Boarding School approach:

Table 1. Deep Learning Model of the Ministry of Education and Culture and IBS PKMKK

Aspect	Ministry of Education and Culture Deep Learning Model	IBS PKMKK Deep Learning Model
Learning Framework	Collaborative, innovative, technology-based	Differentiation, peer tutoring, spiritually-based collaboration
Learning Environment	Student-centered, creative, conducive	Centered on students, spiritual, conscious
Learning Partnership	School ↔ Community ↔ Industry	Islamic boarding school ↔ Parents ↔ Community
Digital Utilization	Digital literacy, coding, digital media	One student one laptop, digital literacy, digital media
Learning Experience	Understanding, Applying, Reflecting	Understanding, Applying, Creating, Reflecting
Principles of Learning	Meaningful, mindful, joyful	Meaningful, mindful, joyful
Tujuan Akhir	8 Dimensions of Graduates	Monotheism

This comparison highlights that while general deep learning frameworks may focus on innovation, collaboration, and technology integration to achieve 21st-century competencies, the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan adopts a more differentiated approach that is explicitly based on spirituality. The learning environment created is not only conducive and creative, but also highly centered on spiritual values and the self-awareness of the students. (Sasson et al. 2022). The close partnership between Islamic boarding schools, parents, and the

community reflects a holistic support system, in contrast to the focus of general partnerships that often involve the industrial world.

The use of digital technology in this Islamic boarding school also has a different nuance; it is not just general digital literacy, but the use of technology to support the production of digital content oriented towards preaching and spreading Islamic values. The learning experience in Islamic boarding schools not only involves understanding, application, and creation, but also a strong emphasis on reflection and internalization of values, which is the core of the philosophy of monotheism. The principles of "meaningful, conscious, and joyful" learning applied by the Islamic Boarding School complement the more general principles of "meaningful, collaborative, and creative" learning. The most fundamental difference lies in the ultimate goal: while general deep learning aims at 21st-century competencies, the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan explicitly places "monotheism" as the pinnacle of educational achievement.

This shows that the deep learning model implemented at the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan is not merely a passive adaptation of modern concepts, but rather an intelligent recontextualization, where cutting-edge technology and pedagogy are integrated with the noble values of the Islamic Boarding School tradition (Tian, Zhao, and Nguyen 2022). This also confirms that Islamic boarding schools, as dynamic educational institutions, have adapted to the changing times and advances in science and technology (Bakri and Mangkachi 2021; Isbah 2020; Khusumadewi 2022). The adaptation of Islamic boarding schools is also evident in the development of entrepreneurship and institutional capacity (Yunindyawati et al. 2023). The model of spiritual intelligence development in modern Islamic boarding schools also demonstrates a comprehensive approach to moral education.

Implications

The findings of this study have several significant implications. First, it shows that personalized learning, although often associated with modern technology and secular approaches, can be effectively and meaningfully integrated into traditional Islamic educational contexts such as Islamic boarding schools. This model provides relevance to academic literature on the implementation of deep learning integrated with spiritual and moral values in the context of Islamic boarding school education in Indonesia.

Second, the emphasis on the "Unifying Curriculum" or monotheism as the source of all knowledge and activities shows that education in this Islamic Boarding School goes beyond the cognitive and skill dimensions alone. It is an education that aims to shape insan kamil—complete human beings—who have deep spiritual awareness, noble character, and social responsibility. The character education model implemented in this Islamic Boarding School is oriented towards the formation of positive habits in life, so that students have the awareness, understanding, concern, and commitment to apply virtue in their daily lives (. 2023; Suciati et al. 2023). Character education seeks to foster morality and commendable behavior (Silay 2014). The synergy between deep learning, which is oriented towards cognitive efficiency and adaptation, and the Love Curriculum, which focuses on instilling noble values, has the potential to create a personalization model that is not only academically effective, but also holistic in shaping the character and spirituality of students (Jia and Wu 2025; Liu et al. 2022).

Third, the existence of seven pillars of learning underscores the Islamic Boarding School's commitment to a multi-dimensional approach in developing student. Each pillar, ranging from memorization of the Qur'an and Hadith, multilingual proficiency, digital

literacy, to understanding classical Islamic texts and tajwid, is designed to complement each other and contribute to the holistic growth of student. The use of technology, such as laptops for each student and smart TVs, is not just following a trend, but is strategically integrated to support specific learning objectives, including the production of religious content and scientific presentations. This shows how technology can be a powerful tool in strengthening, not replacing, the core values of an educational institution. Technology can also help teachers focus their time on individual support, social-emotional skill development, and a more collaborative classroom culture (Gouseti et al. 2025; Shi, Ding, and Choi 2024).

Fourth, active parental involvement in the educational process, as seen in the "One Hadith One Presentation" pillar, reinforces the concept of effective learning partnerships. Community involvement is also one of the strengths of Islamic boarding schools, enabling educators to guide students directly. This partnership reflects the role of Islamic boarding schools as broader religious and social centers. This creates a cohesive educational ecosystem, where educational responsibilities are shared and strengthened by all stakeholders.

Although this study provides a rich picture of the implementation of this innovative model, several challenges may remain, such as the scalability of this personalization model to larger Islamic boarding schools or those with limited resources. However, the case study at the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan, through an innovative and integrated approach, not only utilizes technological advances but is also deeply rooted in profound educational values and philosophy. This comprehensive approach significantly contributes to the holistic development of students, enhancing their ability to manage emotions, build positive relationships, and ultimately improve their academic performance (Miseliunaite, Kliziene, and Cibulskas 2022; Norozi 2023). In addition, student engagement (Alrashidi, Phan, and Ngu 2016; Loyola-Carrillo et al. 2025; Wang et al. 2021) nd a positive atmosphere are essential for an optimal learning experience.

The Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan demonstrates a highly innovative approach to personalized learning, deeply integrated with the philosophy of monotheism that they call the "Curriculum of Love." This model is not merely an adaptation to modern educational trends, but rather an intelligent synthesis of pedagogical advances and Islamic spiritual values. It provides a relevant model for value-based personalized learning in Islamic educational institutions, proving that advanced technology can synergize with value-based curricula to create a personalized, effective, and meaningful learning environment.

Conclusion

The deep learning model in personalized learning, synergized with the "Curriculum of Love" philosophy at the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan, begins with a comprehensive diagnostic assessment that covers not only the intracurricular domain, but also extracurricular and cocurricular activities, mapping the potential of each student. The results of this assessment form heterogeneous learning groups and empower students with higher abilities to become peer tutors, facilitating collaborative learning.

Overall, the Padepokan Kyai Mudrikah Kembang Kuning Islamic Boarding School in Pamekasan presents an innovative, effective, and meaningful model of personalized learning through a clever synthesis of the pedagogical advances of deep learning and the spiritual philosophy of the "Curriculum of Love." This approach not only develops

students holistically—intellectually, spiritually, and character-wise—but also offers a relevant model for value-based personalized learning in the context of Islamic education.

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