

Digital Innovation and Curriculum Reform in Islamic Boarding Schools of Serambi Mekah: Balancing Tradition and Modernity

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Abstract: Pesantren, as traditional Islamic educational institutions, are increasingly challenged to balance the preservation of religious values with technological adaptation in the era of Society 5.0. This study investigates how pesantren in Padang Panjang City, West Sumatra, implement digital educational innovations while maintaining their core identity. Guided by the central question—how do pesantren integrate technological advancements into their educational practices without compromising their traditional foundations? This research adopts a narrative-based grounded theory approach. Data were obtained through observation, interviews, and document analysis in six selected pesantren. Findings reveal three key areas of innovation: integration of the national and pesantren curricula, incorporation of digital technologies into the learning process, and the development of extracurricular programs tailored to students' talents and interests. Some pesantren have established specialized units such as the Diniyyah Research Center and Diniyyah Robotic, introduced native speakers in language programs, and facilitated research, literacy, and tech-based learning activities. These developments reflect not only adaptive capacity but also the emergence of a contextual and forward-looking Islamic education model. The study contributes to a nuanced understanding of how pesantren navigate transformation while upholding their educational and spiritual heritage in response to 21st-century demands.

Keywords: Digital innovation; Curriculum reform; Islamic boarding schools; Serambi Mekah; Tradition and modernity.

INTRODUCTION

The 21st century is marked by the acceleration of the civilization revolution driven by technological and scientific advances. This development has a significant impact on various aspects of life, including education. Currently, we are in the era of Society 5.0, where the role of technology is no longer separate from humans, but rather becomes an active partner in creating

solutions to various life challenges (Goel et al., 2024; Pu & Yano, 2020; Zheng et al., 2024), including in the learning process and educational transformation, thus creating a more interactive and enjoyable learning process (Aggarwal et al., 2024). This integration is both an opportunity and a challenge for educators to adapt to new technologies and learning methods (Adarkwah, 2024; Ghory & Ghafory, 2021).

The presence of technologies such as Artificial Intelligence (AI) and the Internet of Things (IoT) brings a breath of fresh air to the world of education (Patra & Datta, 2023; Rusman et al., 2023). This innovation not only makes the learning process more effective, but also encourages students to learn independently (Naraidoo et al., 2024). Through the use of technology, the learning atmosphere becomes more lively and interactive, providing wider opportunities for each student to get to know themselves, explore their potential, and channel their talents and interests in a more personal and meaningful way (Prastowo et al., 2020).

So far, Islamic boarding schools have often been viewed as educational institutions that are closely associated with traditional and conventional learning models. However, this view is now beginning to shift. Islamic boarding schools have demonstrated their adaptive capabilities by responding to developments in the era through the use of technology in educational practices, the integration of traditional Islamic curriculum with modern educational curriculum (Falikul Isbah, 2020; Isbah & Sakhiyya, 2023). Mohiuddin & Borham's research (2024) in Malaysia shows that information and communication technology (ICT) is now playing an increasingly important role in Islamic education.

Through this technology, the spread of Islamic teachings can be carried out more effectively and relevantly in the midst of the current global world dynamics (Mohiuddin & Borham, 2024). This innovation reflects the efforts of Islamic boarding schools to go beyond the boundaries of tradition without abandoning the basic values that are their identity (Hanif et al., 2024; Nurtawab & Wahyudi, 2022). One real form of adaptation carried out by Islamic boarding schools is by integrating the latest developments, especially in the field of information and communication technology, into the management system and learning process (Basori et al., 2023).

Darul Qolam Islamic Boarding School in Banten is a good example of how the Independent Curriculum can be put into practice effectively. By adopting this approach, the school has been able to develop learning programs that truly reflect the needs of the local community while also keeping pace with the challenges of today's world (Wasehudin et al., 2023). In his research, Zarkasyi (2020) said that the modernization of Islamic boarding schools is

reflected in efforts to integrate formal, non-formal, and informal education. Through this approach, the students get a comprehensive learning, including religious knowledge as well as general knowledge (Zarkasyi, 2020). In line with that, Kawakib (2020) noted that today's Islamic boarding schools have begun to develop a new curriculum as an effort to prepare students to face the challenges of the times. This step includes the incorporation of non-traditional subjects as well as the application of more modern management practices (Kawakip, 2020).

This step shows that today's Islamic boarding schools have developed beyond the conventional image that has been attached to them so far. In fact, in some aspects, Islamic boarding schools have been able to display a more modern face of education (Darwanto et al., 2024; N. A. Salim et al., 2024) compared to general educational institutions, without sacrificing the identity and distinctive values that are its main foundation. Indonesia, as the country with the largest Muslim population in the world, has a very strong Islamic education ecosystem, one of which is marked by the existence of thousands of Islamic boarding schools spread across various regions.

Based on studies, there are more than 25,000 Islamic boarding schools throughout Indonesia, with around 75% still maintaining traditional patterns, while the rest have adopted a more modern approach (Hussin et al., 2017; Saparudin et al., 2024). One of the areas that has a significant contribution to the development of Islamic education is Padang Panjang City, known as the "Veranda of Mecca", has an important position in the history and development of Islamic education in Indonesia. In this city there are many Islamic boarding schools, including one of the oldest on the island of Sumatra, namely the Thawalib Islamic Boarding School, which is more than a century old and is an important milestone in the tradition of Islamic knowledge in the region.

In the context of the era of globalization 5.0, this study is relevant because it offers a contemporary perspective on the ability of Islamic boarding schools not only to survive but also to transform through the integration of technology in learning practices and institutional governance. More than just technical changes, this study highlights the dynamics of adaptation that remain based on the unique values of Islamic boarding schools. Therefore, this study also enriches the discourse on the modernization of Islamic education based on Islamic boarding schools amidst the flow of digitalization, especially in areas that have strong Islamic historical roots such as Padang Panjang.

RESEARCH METHODOLOGY

This research employs the grounded theory method with a narrative approach to understand in-depth how pesantren experience and manage

educational transformation in the digital era. This approach was chosen because it allows researchers to listen directly to the stories, experiences, and meanings constructed by the perpetrators in the pesantren without limiting them to a framework of thinking that is too rigid. By combining the power of narrative and the theoretical sensibility of grounded theory, this research aims not only to identify patterns and concepts that are alive in practice but also to develop a methodological framework (blueprint) that can serve as a foothold for future researchers in similar studies. The steps of this study were systematically designed to maintain the depth of the data and the accuracy of the analysis, which included the following research stages can be seen in Table 1:

Table 1. Research Data Analysis Steps

Step	Narrative Approach	Grounded Theory Approach
Data Collection	Collect detailed stories through interviews or observations	Use theoretical sampling to guide data collection iteratively
Transcription and Initial Coding	Transcribe narratives verbatim and perform open coding	Apply initial coding to identify key concepts and categories
Focused Coding and Categorization	Identify patterns, themes, and story arcs within narratives	Conduct focused coding to refine and categorize initial codes
Memo Writing	Write memos to capture insights about narrative structure and context	Document development of categories and their relationships
Theoretical Sampling and Saturation	Continue collecting narratives until no new themes emerge	Engage in theoretical sampling until theoretical saturation is achieved
Integration and Theory Development	Construct a coherent story explaining participants' experiences	Develop a substantive theory explaining the social processes observed
Validation and Refinement	Validate findings through participant cross-checking or triangulation	Refine the theory through constant comparison and validation against the data

First, data collection. Starting with collecting narrative data through interviews, observations and documentation. Data collection is carried out in detail from participants to understand their experiences and perspectives (Lee et al., 2007; Lu & Wong, 2024; Webb & Mallon, 2007). Theoretical sampling is done repeatedly, so as to find a concept to guide further data collection (Mello et al., 2021). **Second**, transcription and initial coding. Writing down the collected narrative by identifying important events, actions and interactions in the narrative (Floersch et al., 2010; Lee et al., 2007). Apply initial coding to divide the data, carefully examine the text for identification of concepts and categories (D'Cruz & Nayar, 2023; Mello et al., 2021).

Third, focused coding and categorization. Focus on identifying patterns and themes in the narrative, so that the storyline and character roles are discovered (Frost, 2009; Webb & Mallon, 2007). Focus coding to ensure existing categories are based on data findings (D'Cruz & Nayar, 2023; Mello et al., 2021). **Fourth**, memo writing. Writing notes to create narrative structures, contexts and deeper meanings (Frost, 2009; Webb & Mallon, 2007). This memo is used to develop the theory later (D'Cruz & Nayar, 2023; Mello et al., 2021). **Fifth**, theoretical sampling and saturation. Continue collecting narratives until no new patterns emerge, so that a comprehensive understanding of the narrative context is obtained (Floersch et al., 2010; Lee et al., 2007). Theoretical samples continue to be collected until theoretical saturation is reached, meaning that no new information is found that adds to the category (Mello et al., 2021).

Sixth, integration and theory development. Integrating themes and narrative patterns to build a coherent story (Frost, 2009; Webb & Mallon, 2007). Integrating categories and their relationships in developing substantive theories that explain the social processes observed in research data (D'Cruz & Nayar, 2023; Mello et al., 2021). **Seventh**, validation and refinement. The final stage of validation of narrative findings by cross-checking with the triangulation method to ensure the credibility of the data (Frost, 2009; Webb & Mallon, 2007). Refine and ensure that the emerging theory is strong and based on empirical evidence (D'Cruz & Nayar, 2023; Mello et al., 2021).

RESULTS AND DISCUSSION

Combining religious education with the national curriculum is often challenging. There is a need to balance religious values with the goals of secular education. This challenge is increasingly felt in countries with religiously diverse societies or strong secular traditions (Amalia et al., 2024; A. Salim et al., 2024; von Brömssen & Nixon, 2020). For example, France expressly separates religious education from public schools. Countries such as Greece, Italy, Portugal, and Spain have chosen to include religious education in their

education systems, albeit with different approaches (Parma & Llorent-Vaquero, 2018). In contrast, several other European countries provide space for Islamic-based private schools to operate more freely, and some even support the integration of the national curriculum and religious education through subsidies and supportive regulations (Daun & Arjmand, 2005).

Indonesia has the largest Muslim population in the world, with approximately 85–89% of its 240 million people converting to Islam (Beck, 2025; Kato, 2018; Nirwandar, 2018), a figure equivalent to the combined Muslim populations of Egypt and Iran (An-Na'im, 2021). More than just numbers, Islam in Indonesia has a great influence on various aspects of life, ranging from government, economy, and politics to social, cultural, and, of course, education.

Islamic boarding schools and schools in Indonesia have experienced rapid development in the field of education. Currently, there are approximately 26,975 Islamic boarding schools spread throughout the country (Saparudin et al., 2024). Many parents choose to send their children to Islamic boarding schools because this institution is considered to be able to combine general education with religious education, creating a balance between worldly knowledge and spiritual values (Falikul Isbah, 2020; Hanif et al., 2024; Hussin et al., 2017; Isbah & Sakhiyya, 2023; Zainal et al., 2022).

Padang Panjang is one of the regions in Indonesia that is widely known as a center for quality pesantren education. This city has long been an important part of the development of Islamic education in Indonesia. The Islamic boarding schools here have succeeded in combining the public school curriculum with the tradition of classical pesantren education and the approach of modern Islamic schooling (Zulmuqim et al., 2020). This combination not only produces a generation that is knowledgeable and moral but also plays a significant role in shaping cultural and religious identity in society (Sumanti et al., 2024).

Padang Panjang City has six Islamic boarding schools spread across various areas of the city, reflecting the diversity and richness of Islamic educational institutions that have grown in this area. Details of the six Islamic boarding schools are presented in Table 2 below:

Table 2. Data on Islamic Boarding Schools in Padang Panjang City

No.	Name of Islamic Boarding School	Year of establishment
1.	Thawalib Boys Islamic Boarding School,	1911

No.	Name of Islamic Boarding School	Year of establishment
	Padang Panjang	
2.	Thawalib Mountain Islamic Boarding School	April 22, 1921
3.	Islamic Boarding School for Girls	November 1, 1923
4.	Kauman Muhammadiyah Islamic Boarding School	January 2, 1930
5.	Thawalib Islamic Boarding School for Girls	1989
6.	Integrated Islamic Boarding School of Serambi Mekah	November 1995

Source: research result document

These six Islamic boarding schools are managed by foundations whose leadership generally still has family ties with the original founders (Zulmuqim et al., 2020). When viewed from its typology, Islamic boarding schools in Indonesia can be classified into three categories, namely traditional (salafiyah), modern, and semi-modern Islamic boarding schools. All three demonstrate adaptive capabilities in responding to technological developments and the needs of the times, without abandoning the characteristics and values inherent in each type (Muafiah et al., 2022). In an effort not to be left behind by the current of globalization, Islamic boarding schools in Serambi Mekah, Padang Panjang, have now generally transformed into semi-modern and even modern Islamic boarding schools. They actively utilize technological advances as part of educational innovation, which is then integrated into the daily learning process. The transformation of Islamic boarding school education today prioritizes the principle of being selective in adopting modern teaching methods, without abandoning classical Islamic education which is its foundation (As'ad, 2015). This approach aims to prepare students to face global challenges without sacrificing Islamic character to meet the needs of modernization (Subhan, 2023).

Table 3. Typology of Islamic Boarding Schools in Padang Panjang City

No.	Name of Islamic Boarding School	Typology
1.	Thawalib Islamic Boarding School for Girls	semi-modern
2.	Thawalib Boys Islamic Boarding School, Padang Panjang	semi-modern

No.	Name of Islamic Boarding School	Typology
3.	Thawalib Mountain Islamic Boarding School	semi-modern
4.	Islamic Boarding School for Girls	modern
5.	Integrated Islamic Boarding School of Serambi Mekah	semi-modern
6.	Kauman Muhammadiyah Islamic Boarding School	modern

Source: research result document

Kauman Muhammadiyah Islamic Boarding School is one example of an Islamic educational institution that implements an integrated curriculum. The curriculum used is the result of the integration of the curriculum of the Ministry of Religion, the Education Office, Islamic boarding schools, and the Muhammadiyah curriculum. The modern character of this Islamic boarding school is reflected through its various superior programs, such as memorizing the Al-Qur'an, strengthening foreign languages (Arabic, English, Japanese, and Mandarin), to introducing technology through a robotics program. At the Madrasah Aliyah level, Kauman Muhammadiyah Islamic Boarding School offers three majors, namely Science, Social Studies, and International Middle East. To be able to graduate from the International Middle East program, a student must memorize a minimum of 7 juz of the Al-Qur'an, while for the Science and Social Studies majors; the minimum targeted memorization is 4 juz. The students do not only come from various regions in Indonesia, but also from Southeast Asian countries such as Thailand and Malaysia.

Combining Islamic and modern education that prioritizes science and technology, the Kauman Muhammadiyah Islamic Boarding School is committed to realizing quality alumni by preparing its students to study at universities abroad. It is recorded that until 2024, students who graduated from this Islamic boarding school have been accepted at universities abroad, such as in Egypt, Turkey, Sudan, Malaysia and several other countries through scholarships. This achievement is certainly inseparable from the various innovations applied in the learning process, which are supported by the availability of facilities and infrastructure that are relevant to the needs of students and in line with the latest technological developments. This innovation is reflected in the various superior programs and facilities provided, such as the Kauman Language Center which offers TOEFL, Muhadatsah, and TOAFL training, the Tahfidz Al-Qur'an program, and the Exakta program which includes Mathematics, Physics, Chemistry, and Biology.

In addition, there is also a Scientific Paper Writing and research program, which is further strengthened by the existence of a language laboratory, computer laboratory, and an integrated library as the main support for academic activities and the development of student literacy. The existence of a language center is an important element in encouraging the strengthening of students' literacy, which contributes directly to the progress of their academic achievements (Fitriani et al., 2024). In addition, the support of facilities such as adequate laboratories and libraries also play a strategic role in the development of students' academic competence. These facilities not only increase critical thinking capacity, but also encourage creativity and the ability to solve problems independently and in a directed manner (Rohmad et al., 2024).

Another innovation in the field of education carried out by the Kauman Muhammadiyah Islamic Boarding School is the holding of virtual seminars that present speakers from among figures, academics, and practitioners, in order to enrich the insight and broaden the horizons of knowledge of the students. In everyday life, students are accustomed to actively interacting with technology; they are allowed to bring laptops into the classroom where their use remains under the supervision of the teacher. The learning process is also designed with a varied approach, such as problem-based learning and research-based learning. Students are encouraged to be involved in research activities that are divided into three main areas: social research under the guidance of social subject teachers, and research in the field of science and waste management guided by science teachers. These activities not only train students' skills and understanding of the knowledge they are studying, but also provide opportunities for students to develop their academic careers (Aryal, 2024; Kolinichenko et al., 2021).

Furthermore, the Islamic boarding school is currently designing the establishment of an International Study Center as a strategic step in opening up opportunities for alumni to further study in various countries such as the United States, Australia, Europe, Asia, and Africa. To support the development of the potential and quality of students as a whole, the Kauman Muhammadiyah Islamic Boarding School provides more than 20 choices of extracurricular activities designed to align with the interests and talents of each student. For students who are interested in technology, there is a robotic extracurricular activity that is supervised by professional educators in the field of technology. By integrating technology into the learning process, it can improve the learning experience and technological skills of students (Djatkiko et al., 2021).

Moving on to the Thawalib Putra Islamic boarding school initiated by the great Indonesian cleric H. Abdul Karim Amrullah or better known as Buya Hamka. Established in 1911, this Islamic boarding school initially adopted a

traditional salafiyah education system. However, over time and the dynamics of globalization, this Islamic boarding school has gradually transformed into a semi-modern Islamic boarding school. Currently, the curriculum applied refers to the curriculum of the Ministry of Religion, with teaching staff who are mostly alumni from universities in the Middle East, reflecting the continuity between classical scientific traditions and educational modernity. Students at this Islamic boarding school generally show outstanding achievements in various fields, especially in memorizing the Qur'an (tahfiz), mastery of yellow books, foreign language skills (Arabic and English) and the ability to speak in three languages (Indonesian, Arabic and English). Not a few have also succeeded in achieving achievements in science and mathematics Olympiads. To support the technology-based learning process, this Islamic boarding school has provided a computer laboratory equipped with internet access and IT staff who are ready to assist teachers and students in teaching and learning activities.

During the COVID-19 pandemic, this Islamic boarding school also adapted by implementing an online learning system through the Zoom Meeting platform and WhatsApp Group as a means of communication and delivery of materials. Studies show that the use of the Zoom Meeting application has proven effective in encouraging active student involvement during the learning process, with an effectiveness rate reaching 93.75% (Fajri et al., 2021). This platform is also considered as one of the most effective online learning media (Córdor-Herrera et al., 2022). On the other hand, the study also revealed that as many as 77% of respondents stated that WhatsApp plays an important role in bridging communication between teachers and students, especially in sharing learning materials online (Bokhari, 2023). In practice, these two applications are often used together to create a more interactive and meaningful learning experience for students (Mendivil-Aguayo et al., 2024).

If the Thawalib Putra Islamic Boarding School is intended for male students, then the Thawalib Putri Islamic Boarding School is present as a special educational institution for female students. Although under the auspices of the same foundation, these two institutions are managed separately with different leadership and management structures. The Thawalib Putri Islamic Boarding School is better known by its official name of the Thawalib Padang Panjang School. In terms of achievement, the students at this Islamic boarding school are no less superior to their colleagues at Thawalib Putra; some of them even won the Archery Competition league for junior high and high school students throughout West Sumatra in 2024. To support the development of the students' potential and talents, this Islamic boarding school organizes various student activities, such as muhadharah in three languages, memorizing the Al-Quran, Arabic calligraphy, arts, organizations, sports, pencak silat, scouting, and

internet-based technological innovations. The teaching staff have also adapted to educational innovations such as always updating books and learning resources through integration with digital learning media. Because, in reality, teachers must develop their professional competence to master digital methods and tools which are part of new innovations in the world of education (Camilleri & Calleja, 2023; Mathew, 2024; Saykili, 2024).

Unlike the two previous Thawalib Islamic boarding schools, the Thawalib Gunung Islamic Boarding School does not have an institutional relationship with Thawalib Putra or Thawalib Putri, because it is under the auspices of a different foundation. As the name implies, this Islamic boarding school is located in a highland area adjacent to the mountains, so it is named the Thawalib Gunung Islamic boarding school. Founded in 1921, this Islamic boarding school is known for its style which is still thick with Salafiyah traditions. However, in recent years, there have been gradual efforts towards a semi-modern Islamic boarding school. This indication is evident from the use of learning methods that are adaptive to developments in educational technology, such as the use of the Zoom Meeting and WhatsApp platforms during the COVID-19 pandemic.

This is in line with the statement of the mathematics teacher at the Thawalib Gunung Islamic Boarding School, who said: "During the pandemic, students at the Thawalib Gunung Islamic boarding school used online media to learn, especially WhatsApp, although they also occasionally used Zoom. However, the majority of learning activities are carried out through WhatsApp, some students have even participated in the Olympics and won the championship." This statement was also reinforced by one of the chemistry teachers who said that, "The media we use in the learning process is WhatsApp and occasionally Zoom. However, the students continued to follow face-to-face learning because we felt that in-person learning was much more effective for them."

Indicators of this change are reflected in curriculum updates, various innovations in educational practices, and the achievements of its students. Several student's winner of the Archery Olympiad at the City Level in Padang Panjang, showing that they are not only able to adapt to modern educational approaches, but are also competitive in the field of exact sciences, on par with students from public schools. A study at the Australia Islamic School shows that students in Islamic educational environments are currently increasingly inclined towards exact sciences (Nathie & Abdalla, 2020).

Serambi Mekkah Integrated Islamic Boarding School, which carries a semi-modern model, has its own uniqueness compared to other Islamic

boarding schools. In addition to providing extracurricular programs that are oriented towards strengthening cognitive competence, this Islamic boarding school also actively develops the psychomotor competence of its students. Among the activities offered are sewing and journalism training, which aim to hone the practical skills of the students. In order to support the quality of learning, the Islamic boarding school even presents professional teachers or resource persons from outside the institution who have special expertise in the field.

"In Islamic boarding schools, the activities of students are not only limited to compulsory lessons. We also hold various activities such as sewing, journalism, and karate, to celebrate Language Month. To support that, we often present teachers or expert resource persons from outside so that students get a wider and more practical learning experience," said one of the teachers.

The form of educational innovation at the Serambi Mekkah Integrated Islamic Boarding School is also reflected in the existence of various learning support facilities, such as natural science laboratories, computer laboratories, language laboratories, and biology laboratories. The existence of laboratories plays an important role as supporting facilities in experimental activities, which allow students to apply theoretical concepts into real practice in a more contextual and meaningful way (Bhute et al., 2021; Tcheslavski et al., 2024). To improve the foreign language skills of the students, this Islamic boarding school proactively presents teachers or speakers from abroad, including native speakers, one of whom is from Yemen. Learning activities are also facilitated through virtual meetings with native speakers using the Zoom Meeting platform. The presence of native speakers plays an important role in improving the foreign language skills of students. Through direct interaction, students can authentically learn pronunciation techniques, intonation, and the use of language in a more natural and communicative context (Madkur et al., 2024). In addition, this Islamic boarding school utilizes digital media such as YouTube as part of the *nahu sharaf* learning media. This shows the openness and readiness of the Islamic boarding school in responding to the dynamics of educational innovation in the ever-growing digital era.

The name Wardah is certainly familiar as one of the biggest cosmetic brands in Indonesia (Sukei & Akbar Hidayat, 2019). Interestingly, the last Islamic boarding school discussed in this study has a historical connection with the founder of the company. Pesantren Diniyyah Puteri Padang Panjang or better known as Perguruan Diniyyah Puteri Padang Panjang, is the first Islamic boarding school for women in Southeast Asia, founded in 1923. One of the inspiring figures who is an alumnus is Nurhayati Subakat, the founder of Wardah. In her capacity as a public figure and industry player, she actively

carries out Corporate Social Responsibility (CSR) programs, especially in the field of education. One form of her contribution is her ongoing support for the Islamic boarding school where she studied, especially in the development of educational innovation as part of an effort to advance the quality of the institution both in material and non-material forms.

This commitment is not only manifested through statements, but also in the form of real contributions. On the 97th anniversary of Perguruan Diniyyah Puteri in 2020, he provided financial support of one billion rupiah for the renovation of dormitories and strengthening of other supporting facilities as part of an effort to realize quality education at Pesantren Diniyyah Puteri. As is known, the contribution of Corporate Social Responsibility (CSR) in the form of financial support has a significant positive impact on the development of educational infrastructure (Fusheini et al., 2021). This assistance not only strengthens the physical aspects of educational institutions, but also helps to create a more appropriate learning environment and supports the learning process optimally.

As an alumna and founder of Wardah Cosmetic, Nurhayati Subakat often emphasizes that during her education at Diniyyah Puteri, there are five main values that she continues to hold firmly to this day. These values include spirituality (belief in God), social concern, humility, resilience, and the spirit of innovation. On various occasions, she expressed her hope that these values would continue to be applied and developed, "Hopefully these values will always be applied and developed again to produce a golden generation in the future," hoped the woman from Padang Panjang.

N. A. Salim et al (2024) stated that spiritual values have an important role in bridging traditional religious teachings with the needs of modern education (N. A. Salim et al., 2024). In line with that, Rozi et al (2023) found that a pesantren curriculum that integrates religious and general education can encourage spiritual and intellectual development in a balanced manner (Rozi et al., 2023). The spirit of innovation in the learning process has also been proven to improve the quality of education, by encouraging students to think critically, creatively, and skillfully in solving problems (Rohmad et al., 2024). Ridwan's (2019) findings also strengthen this, that the application of technology and modern educational approaches in the pesantren environment can help students develop relevant skills to face challenges at the global level (Ridwan et al., 2019).

Educational innovation at Pesantren Diniyyah Puteri is reflected through various programs and facilities designed to support the development of the students' potential as a whole. One of the prominent strategic implementations is the application of the multiple intelligence approach in the curriculum. This

approach aims to increase students' interest in learning, motivation, and academic achievement (Karaduman & Cihan, 2018). The application of the Multiple Intelligences theory has also been shown to be able to help students with lower intellectual capacity in developing their academic achievement and general intelligence (Pérez & Beltrán, 2008). To support the implementation of this approach, the pesantren provides 20 types of extracurricular activities that can be chosen by students. Each student is required to participate in two extracurricular categories from the three available categories, namely Academic, Non-Academic, and Public Speaking, according to their respective interests and potentials.

The academic extracurricular category includes activities such as Biology, Economics, English Club, Fiqh Amaliyah, Chemistry, Mathematics, Journalism, and Literature (poetry, short stories, articles, and novels). This extracurricular activity is designed as a forum to hone critical thinking skills and problem-solving skills in students (Aryal, 2024). In particular, foreign language extracurriculars also play a role in improving students' language skills, both verbally and in writing (Kuimova & Kiyanitsyna, 2017). Meanwhile, the non-Academic category includes the fields of art and skills, such as painting and calligraphy, Muslim beauty care, culinary arts, fashion, sewing, embroidery, traditional music, traditional dance, theater, nasyid, choir, drum band, photography, and film design and production. Non-academic extracurricular activities like this can be a space for students to foster creativity, develop thinking skills, and build skills for interacting with others (Agarwal, 2019; Arias et al., 2019; Ekinil et al., 2022; Mustafayev, 2020; Sharma et al., 2020; Stachyra, 2021; Yu, 2025; Zaghloul, 2023). The public speaking category is designed to hone public speaking skills, including training as a MC, speech, presentation, to becoming a trainer and motivator. Through this extracurricular activity, it is hoped that students can be more confident and feel comfortable when speaking in front of crowds. In addition, this activity helps them hone their good and effective public speaking skills (Arizka & Arlina, 2023).

Furthermore, in order to strengthen the quality and effectiveness of the implementation of its educational programs, Perguruan Diniyyah Puteri has formed a number of strategic divisions that support teaching and learning activities and the development of students. These divisions include the Diniyyah Science Center, Diniyyah English Center, Diniyyah Arabic Center, Diniyyah Research Center, and Diniyyah Robotic. Each division plays a role in presenting innovative breakthroughs according to its field, while strengthening the identity of the Islamic boarding school as an Islamic educational institution that is adaptive to the demands of the times.

Of the five divisions, Diniyyah Research Center and Diniyyah Robotic are interesting divisions, which are not necessarily available in all Islamic boarding schools. Extracurricular research and scientific writing activities contribute to honing students' writing skills, developing critical thinking skills, and training their skills in identifying and analyzing a problem systematically (Mulyaningsih et al., 2022). Along with that, extracurricular robotic activities also play an important role in developing various essential skills in students, such as problem-solving skills, critical thinking, computerization (Bernstein, Cassidy, et al., 2022; Bernstein, Mutch-Jones, et al., 2022), as well as skills in building interactions and collaboration in social group dynamics (Ponticorvo et al., 2020). As a modern Islamic boarding school, Diniyyah Puteri has adapted to the demands of modern education, but still maintains the balance of salafiyah values that are relevant in today's education (Isbah & Sakhiyya, 2023).

CONCLUSION

The transformation of education in the Islamic boarding school environment in Padang Panjang City shows that these institutions have selectively adapted to the demands of the digital era without losing their Islamic identity. Islamic boarding school innovation is reflected in the integration of learning technology, the use of an integrated curriculum, and the strengthening of extracurricular programs that support the development of students' competencies as a whole, both cognitively, affectively, and psychomotorically. Adoption of online platforms, collaboration with native speakers, the establishment of research and robotic divisions, and alumni support in the form of CSR are part of strategic efforts in creating a contextual modern Islamic boarding school model. Islamic boarding schools are no longer just a space for preserving traditional values, but also a laboratory for Islamic education innovation that is relevant to the needs of the times. Thus, Islamic boarding schools have great potential to contribute to forming a superior, adaptive, and visionary generation of Muslims in facing future global challenges.

IMPLICATION AND LIMITATIONS

The findings in this study have important implications for the development of contemporary Islamic education, especially in designing innovation strategies for Islamic boarding schools that are adaptive to the development of the times without abandoning traditional values. Innovations carried out by Islamic boarding schools in Padang Panjang City, such as technology integration, curriculum strengthening, and the development of digitalization-based learning programs, can be an inspiring model for other Islamic educational institutions in facing the Society 5.0 era. The results of this study can also be a reference for policy makers, education practitioners, and

Islamic boarding school leaders in shaping the direction of institutional transformation that is more contextual and sustainable. However, this study has limitations in terms of the scope of the area and the number of Islamic boarding schools studied, so the results do not fully represent the dynamics of Islamic boarding school innovation in other areas that have different social and cultural backgrounds. In addition, the narrative qualitative approach used emphasizes the depth of the story and meaning, but has not quantitatively measured the impact of innovation on learning outcomes or the development of students. Therefore, further studies are needed with a broader approach and mixed methods to gain a more comprehensive and generalizable understanding. ■

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