

Adaptive Islamic Religious Education Learning Orchestration through a Deep Learning Approach Based on Religious Moderation in Madrasah

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Abstract

The transformation of learning through the Deep Learning approach requires Islamic Religious Education (IRE) to move beyond content mastery toward fostering students' religious moderation. This study aims to analyze and develop a conceptual model of adaptive Islamic Religious Education learning orchestration through a Deep Learning approach grounded in religious moderation in madrasahs. A descriptive qualitative design was employed. Data were collected through classroom observations, in-depth interviews, and document analysis, and were analyzed using the interactive model of Miles, Huberman, and Saldaña. Data trustworthiness was ensured through source and method triangulation, member checking, and prolonged engagement. The findings reveal that adaptive IRE learning orchestration is constructed through four interrelated components: adaptive instructional planning, meaningful, mindful, and joyful learning interactions, the internalization of religious moderation through authentic learning experiences, and continuous adaptive assessment. The synthesis of these components resulted in an Adaptive Islamic Religious Education Learning Orchestration Model, positioning teachers as learning orchestrators who integrate instructional design, learning experiences, character development, and assessment into a coherent learning system. This model extends the Deep Learning perspective by embedding religious moderation as the core principle of adaptive and contextually relevant Islamic Religious Education in madrasahs.

Keywords

Deep Learning; religious moderation; learning orchestration; adaptive learning; Islamic Religious Education

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1. INTRODUCTION

Islamic Religious Education (IRE) in madrasahs faces new challenges in preparing students to develop deep thinking while fostering religious moderation amid the growing complexity of social life and the rapid expansion of digital information (Kamila, 2023; Mukhlis et al., 2023). The national shift toward a Deep Learning approach calls for instructional practices that extend beyond content mastery to emphasize meaningful, reflective, and contextually relevant learning experiences (Mujahid & Madum, 2025; Syukri & Rosyad, 2025). At the same time, increasing religious polarization, the spread



of online hate speech, and rising intolerance in digital spaces underscore the urgent need to strengthen religious moderation through Islamic Religious Education (Abidin et al., 2025; Putri et al., 2026).

Microsoft's Digital Civility Index report indicates that digital interactions continue to be characterized by various forms of uncivil behavior, including hate speech and intolerance. Likewise, national surveys conducted by several institutions reveal that intolerant attitudes remain prevalent among a proportion of Indonesian students and young people (Susanto et al., 2024; Widiyastutik et al., 2025). These findings highlight the need for Islamic Religious Education (IRE) in madrasahs to be more adaptively orchestrated through a Deep Learning approach integrated with the principles of religious moderation, enabling students to develop critical thinking, strong character, and the capacity to thrive in a pluralistic society (Andriani et al., 2025; Wijoyo, 2023).

The Deep Learning approach represents a paradigm shift in national education from content-oriented instruction toward learning that is meaningful, reflective, and engaging (Maskur & Al Madani, 2026). However, its implementation in Islamic Religious Education (IRE) remains challenging, as many teachers continue to rely on instructional practices centered on content delivery and rote memorization. This tendency may hinder the internalization of religious moderation as an essential competency, limiting students' ability to develop critical understanding, reflective judgment, and responsible religious attitudes (Riadi et al., 2026).

Islamic Religious Education (IRE) in madrasahs continues to be dominated by expository teaching approaches that position teachers as the primary source of knowledge, leaving limited opportunities for students to develop critical and reflective thinking. In contrast, the Deep Learning paradigm emphasizes students' active engagement in constructing meaning through authentic learning experiences. Recent educational evaluations indicate that meaningful learning has yet to become a dominant practice in schools (Arifin & Al Madani, 2024). These conditions underscore the need for a more adaptive orchestration of teaching and learning.

Several studies have examined Islamic Religious Education (IRE) through the lens of religious moderation; however, most have focused on value internalization, character development, and conventional instructional strategies (Baharun, 2023). More recent research has begun to relate IRE to the Deep Learning paradigm, yet it primarily emphasizes policy implementation without integrating religious moderation into a coherent pedagogical framework. These findings suggest that the relationship between Deep Learning and religious moderation remains conceptually and empirically underexplored, highlighting the need for further investigation (Sugrah, 2023).

Previous studies have demonstrated that adaptive Islamic Religious Education (IRE) has been developed through various approaches, including differentiated instruction, project-based learning, and the integration of digital technologies (Prasetyo & Harahap, 2025; Šinko et al., 2024). Meanwhile,

research on religious moderation has largely focused on promoting tolerance, strengthening school culture, and fostering students' character development. However, limited attention has been given to orchestrating adaptive IRE through the Deep Learning approach as a comprehensive pedagogical framework for strengthening religious moderation in madrasahs (Nawaz et al., 2024).

Although research on Deep Learning and religious moderation has continued to expand, most studies still treat these as separate areas of inquiry (Rifdillah, 2025). Research on religious moderation primarily emphasizes values and character formation, whereas studies on Deep Learning focus on the implementation of learning paradigms without linking them to the objectives of religious education. Consequently, an integrated pedagogical framework that orchestrates both approaches within Islamic Religious Education (IRE) in madrasahs has yet to be established (Riadi et al., 2026; Trabelsi et al., 2023).

Based on the foregoing discussion, this study aims to analyze the orchestration of adaptive Islamic Religious Education (IRE) through a Deep Learning approach grounded in religious moderation in madrasahs. Specifically, it examines how instructional planning, implementation, and assessment are orchestrated to create meaningful learning experiences while reinforcing the values of religious moderation among students. Ultimately, the study proposes a pedagogical framework for adaptive IRE that is better aligned with the demands of contemporary education (Narut & Supradi, 2023).

This study argues that orchestrating adaptive Islamic Religious Education (IRE) through a **Deep Learning** approach grounded in religious moderation not only transforms how teachers design and facilitate learning but also fosters learning experiences that are more reflective, contextual, and meaningful (Elharrouss et al., 2024). Integrating these two approaches enables students to construct religious knowledge critically, internalize the values of religious moderation through authentic learning experiences, and apply these values in diverse social contexts (Suyasmini, 2022). Consequently, IRE moves beyond the transmission of religious content to become a pedagogical space for developing religious competence, moderate character, and twenty-first-century competencies in an integrated manner (Supriatna & Holik, 2025).

2. METHOD

This study employed a descriptive qualitative approach to gain an in-depth understanding of the orchestration of adaptive Islamic Religious Education (IRE) through a Deep Learning approach grounded in religious moderation in madrasahs (Latifah, Hamadanah, 2025). Data were collected through classroom observations, in-depth interviews, and document analysis, and were analyzed using the interactive model of Miles, Huberman, and Saldaña, involving the processes of data condensation, data display, and conclusion drawing and verification (Aprilia & Hasanah, 2024; Bahri, 2023).

This study adopted a descriptive qualitative approach to gain an in-depth understanding of the

orchestration of adaptive Islamic Religious Education (IRE) through a Deep Learning approach grounded in religious moderation within the natural context of a madrasah. Rather than testing hypotheses or examining relationships among variables, the study sought to explore the meanings, processes, strategies, interactions, and instructional practices employed by teachers in implementing the Deep Learning paradigm while integrating the values of religious moderation into classroom instruction (Shi et al., 2023). The research was conducted at MTs Nurul Jadid, Buleleng Regency, Indonesia, as the selected site because the madrasah has begun implementing learning practices that emphasize religious character development alongside adaptation to emerging educational paradigms.

The study was conducted at MTs Nurul Jadid, Buleleng Regency, Indonesia. The research site was selected purposively based on its alignment with the focus of the study, particularly its implementation of Islamic Religious Education (IRE) that integrates the values of religious moderation into the teaching and learning process.

Research participants were selected using purposive sampling, whereby individuals with the greatest knowledge and experience of the phenomenon under investigation were intentionally chosen. The primary informants included the Madrasah Principal, the Vice Principal for Curriculum Affairs, Islamic Religious Education (IRE) teachers, students, and madrasah curriculum developers, where applicable.

To ensure the comprehensiveness of the data, snowball sampling was subsequently employed whenever emerging findings indicated the need for additional perspectives. Participant recruitment continued until data saturation was achieved, that is, when no new themes or meaningful insights emerged from subsequent data collection.

3. FINDINGS AND DISCUSSION

This section presents the findings of the study on the orchestration of adaptive Islamic Religious Education (PAI) learning through a Deep Learning approach grounded in the principles of religious moderation in madrasahs. The findings were derived from classroom observations, in-depth interviews with the madrasah principal, PAI teachers, and students, as well as an analysis of various instructional documents. All data were analyzed using an interactive analytical process to identify patterns, interrelationships among key components, and pedagogical practices that shape adaptive learning. The presentation of the findings is organized according to the main stages of learning orchestration, namely planning, implementation, and assessment, along with their implications for strengthening religious moderation and fostering students' competencies.

3.1 Orchestrating Adaptive Islamic Religious Education (PAI) Learning through the Design of a Deep Learning Approach Grounded in Religious Moderation

The findings indicate that the orchestration of Islamic Religious Education (PAI) learning at MTs Nurul Jadid, Buleleng Regency, begins with a systematic instructional design process prior to classroom implementation (Dwi Afriyanto et al., 2025). Rather than preparing instructional documents merely to fulfill administrative requirements, teachers employ them as pedagogical instruments to design learning experiences that are meaningful, mindful, and joyful, in accordance with the Deep Learning paradigm (Elharrouss et al., 2024). This instructional design process encompasses the analysis of learning outcomes, the formulation of learning objectives, the development of the Learning Objectives Flow (Alur Tujuan Pembelajaran [ATP]), the preparation of teaching modules, the integration of religious moderation values, and the alignment of learning strategies with students' characteristics and learning needs (Gusliana et al., 2025).

Tabel 1. Hasil Orkestrasi Perancangan Pembelajaran PAI Adaptif

Komponen Orkestrasi	Komponen Orkestrasi	Komponen Orkestrasi	Komponen Orkestrasi
Analysis of Learning Outcomes (CP) and Learning Objectives (TP)	Teachers analyze the Learning Outcomes (CP) before formulating learning objectives.	Learning objectives are directed toward deep understanding, critical reflection, and knowledge transfer.	The values of tasamuh (tolerance), tawazun (balance), and i'tidal (justice and fairness) are integrated into the learning objectives.
Development of the Learning Objectives Flow (ATP)	The Learning Objectives Flow (ATP) is developed contextually in accordance with the academic calendar.	The learning sequence progresses systematically from exploration to reflection.	Learning materials are contextualized within the realities of a multicultural society.
Teaching Modules	Teaching modules are designed to be flexible and contextually relevant.	Teaching modules incorporate inquiry-based learning, collaborative activities, reflective practice, and problem-solving tasks.	Cases related to religious moderation are embedded as integral components of learning activities.
Learning Experiences	Teachers employ case studies and classroom discussions as primary instructional strategies.	Students construct meaning through authentic learning experiences.	Learning experiences are designed to cultivate tolerant, dialogical, and inclusive attitudes.
Students' Characteristics	Learning activities are adapted to students' abilities, prior knowledge, and	Learning activities and assessment are differentiated according	Diversity is positioned as a pedagogical asset that enriches the learning process.

learning backgrounds.	to students' needs and characteristics.
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The findings reveal that the instructional design stage serves as the primary foundation for orchestrating adaptive learning (Liu, 2025). Teachers begin the process by analyzing the intended Learning Outcomes (Capaian Pembelajaran [CP]) and translating them into Learning Objectives (Tujuan Pembelajaran [TP]) that extend beyond content mastery to foster students' critical, reflective, and applied thinking skills (Asep, 2023). This analysis provides the basis for designing learning experiences that enable students to actively construct knowledge rather than merely receive information from the teacher (Suparlan, 2024). Accordingly, Deep Learning is conceptualized as a process of meaning-making through students' active intellectual and emotional engagement in learning (Anfa Muarif, Nuryati, 2024).

Furthermore, the development of the Learning Objectives Flow (Alur Tujuan Pembelajaran [ATP]) and teaching modules is carried out adaptively by considering students' characteristics, the madrasah's social context, and contemporary religious issues (Khan, 2024). The teaching modules encompass not only instructional content but also inquiry-based activities, collaborative discussions, reflective exercises, and problem-solving tasks that are closely connected to students' everyday experiences. Throughout these learning activities, teachers systematically integrate the principles of religious moderation, including tasamuh (tolerance), tawazun (balance), i'tidal (justice and fairness), and shura (consultation), enabling students to internalize these values through authentic learning experiences rather than merely acquiring them as conceptual knowledge (Sakir, 2023).

These findings suggest that learning orchestration extends beyond the preparation of instructional materials; rather, it constitutes a pedagogical process of aligning the curriculum, instructional strategies, learning experiences, and the educational values to be cultivated (Siringoringo et al., 2024). Within this process, teachers assume the role of learning orchestrators who connect learning objectives, instructional activities, classroom interactions, and assessment into a coherent and integrated learning system. This role enables Islamic Religious Education (PAI) to become more adaptive to the Deep Learning paradigm while simultaneously strengthening the internalization of religious moderation through authentic learning experiences (Laili, 2025).

These findings are consistent with Michael Fullan's conception of Deep Learning, which emphasizes the development of critical thinking, collaboration, creativity, character, and citizenship through meaningful learning experiences (Asep, 2023; Juan Garzon, 2025; Kusumawati et al., 2022). In the context of Islamic Religious Education, however, the present study extends this perspective by demonstrating that learning experiences can also serve as an effective medium for internalizing the

principles of religious moderation (Dwi Afriyanto et al., 2025; Massadah & Widaningsih, 2023). Accordingly, learning orchestration should not be viewed merely as the management of classroom activities but rather as a comprehensive pedagogical framework that integrates cognitive, affective, and social dimensions into a coherent learning process (Ilmamuna et al., 2023).

3.2 Orchestrating Learning Interactions through Meaningful, Mindful, and Joyful Deep Learning

The findings indicate that the implementation of adaptive Islamic Religious Education (PAI) learning at MTs Nurul Jadid, Buleleng Regency, is no longer centered on teacher-directed instruction but rather on the orchestration of learning interactions that actively engage students in the learning process (Firnando et al., 2025). Teachers assume the role of facilitators who guide students through exploration, dialogue, reflection, and problem-solving, thereby creating learning experiences that are meaningful, mindful, and joyful (Ariani, 2023). Learning interactions are structured through collaborative activities that provide students with opportunities to construct knowledge, express their perspectives, appreciate diversity, and reflect on religious values within the context of everyday life (Liu, 2025; Sah et al., 2024).

Table 2. Orchestration of Adaptive PAI Learning Interactions through a Deep Learning Approach

Interaction Components	Field Findings	Implementasi Deep Learning	Impact on Religious Moderation
Teacher Activities	Teachers act as facilitators and supervisors	Ask reflective and contextual questions	Encourage open dialogue and mutual respect
Student Activities	Students actively discuss and argue	Constructing knowledge through exploration	Fostering an attitude of respect for diversity
Collaborative Learning	Learning is carried out in heterogeneous groups	Collaboration solves real problems	Develop cooperation and empathy
Problem Solving	Religious Cases Are Used as Material for Analysis	Experiential and context-based analysis	Train moderate decision-making
Religious Dialogue	Teachers facilitate discussions of various perspectives	Arguments are based on postulates and context	Avoid exclusivity and intolerance
Learning Reflection	Students write their final reflection	Connecting material with personal experience	Strengthening the internalization of moderation values

Teachers orchestrate learning interactions by initiating classroom activities with contextual phenomena closely related to students' everyday experiences (Asep, 2023; Laili, 2025; Zaman, 2023). These phenomena are subsequently transformed into trigger questions that encourage students to think critically, express their perspectives, and connect religious concepts with contemporary social realities.

In this way, the learning process extends beyond conceptual understanding to become a process of meaning-making through dialogue and reflection(Sah et al., 2024).

During the exploration stage, students work in heterogeneous groups to analyze various religious issues related to tolerance, diversity, the responsible use of social media, and social ethics(Murtadho & Hanafi, 2023). Rather than providing direct answers, teachers facilitate the discussion by posing open-ended questions that guide students to construct their own arguments based on the Qur'an, the Hadith, and the surrounding social context (Thoyib et al., 2024). This pattern of interaction reflects the core characteristics of the Deep Learning paradigm, in which students are positioned as active agents who construct knowledge through critical thinking, dialogue, and collaborative learning(Huda, 2024).

In addition to collaborative activities, teachers systematically incorporate reflective practice as an integral component of the learning process (Supriyadi et al., 2025). At the end of each lesson, students are encouraged to document their learning experiences, the values they have gained, and any changes in their perspectives resulting from classroom engagement(Hasani et al., 2025). This reflective practice serves as a bridge between conceptual understanding and personal experience, enabling the principles of religious moderation to be internalized not only as cognitive knowledge but also as attitudes and dispositions embodied in everyday life. Consequently, Islamic Religious Education (PAI) extends beyond the transmission of religious knowledge to foster students' social awareness and the development of a moderate religious character.

This instructional approach demonstrates that the orchestration of learning interactions is a critical element in creating meaningful learning experiences. Rather than functioning as the primary source of information, teachers assume the role of learning orchestrators who manage classroom dynamics, facilitate collaboration, sustain productive dialogue, and guide students' reflective thinking. Such orchestration makes the learning process more responsive to students' learning needs while simultaneously strengthening the internalization of religious moderation through authentic learning experiences.

These results support the Deep Learning framework proposed by Fullan, Quinn, and McEachen, which argues that meaningful learning emerges when students actively construct knowledge through collaboration, reflection, problem-solving, and authentic experiences (Barradas et al., 2024). The present study, however, extends this framework by demonstrating that, within the context of Islamic Religious Education, learning interactions contribute not only to the development of academic competencies but also to the cultivation of a moderate religious character through inclusive, collaborative, and contextually grounded religious dialogue. Accordingly, the orchestration of learning interactions may be understood as a pedagogical bridge that integrates the Deep Learning paradigm with the broader

objectives of Islamic education, particularly the cultivation of moral character, religious tolerance, and harmonious social coexistence.

3.3 Orchestrating the Internalization of Religious Moderation through Islamic Religious Education (PAI) Learning Experiences

The internalization of religious moderation in Islamic Religious Education (PAI) at MTs Nurul Jadid, Buleleng Regency, is not carried out through indoctrinative approaches or one-way lectures (Syauqi & Wahidin, 2025). Instead, teachers orchestrate the learning process by creating authentic learning experiences that enable students to experience, discuss, reflect upon, and actualize the principles of religious moderation through a variety of instructional activities. This approach ensures that religious moderation is not merely presented as instructional content but is progressively transformed into values that students understand, embrace, and practice in their everyday lives (A'lawi & Budianto, 2025).

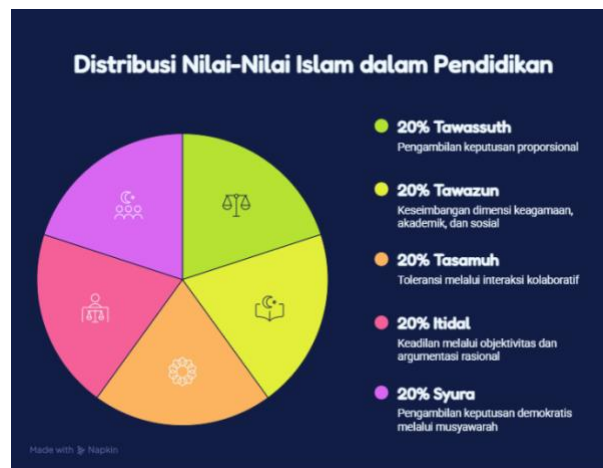
Evidence from classroom observations and interviews indicates that the internalization of religious moderation is facilitated through several interrelated instructional strategies, as presented below:

Table 3. Strategies for internalizing religious moderation in learning

Learning Strategies	Implementation in Learning	Contribution to Religious Moderation
Contextual Case Studies	Students analyze real problems related to tolerance, religious diversity, social media ethics, and social conflict resolution based on the perspective of Islamic teachings.	Develop critical thinking skills, empathy, and moderate decision-making in dealing with socio-religious issues.
Collaborative Discussion	Students dialogue in heterogeneous groups to build arguments based on the Qur'an, hadith, and human values.	Fostering an attitude of tolerance, mutual respect for differences, and an inclusive culture of dialogue.
Project-Based Learning	Students design and implement simple social projects that are oriented towards care, cooperation, and strengthening harmony in the school and community environment.	Strengthening the value of mutual cooperation, social responsibility, and the real implementation of religious moderation in daily life.
Inkuiri Keagamaan (<i>Religious Inquiry</i>)	Students search, compare, and critically examine various sources of Islamic scholarship to understand the diversity of views proportionately.	Forming an open attitude to differences of opinion, avoiding narrow fanaticism, and improving moderate religious literacy.
Learning Reflection	Students reflect on learning experiences and relate them to attitudes and behaviors that will be applied in daily life.	Strengthening the internalization of the value of religious moderation so that it develops into awareness, character, and habits in real life.

Through these various activities, teachers internalize the five main values of religious moderation in an integrated manner.

Figure 1. Distribution of Islamic Values in Education



The successful internalization of religious moderation is largely determined by the quality of the learning experiences designed by teachers. Rather than being presented as normative concepts to be memorized, the principles of religious moderation are cultivated through students' active engagement in observing real-world phenomena, participating in discussions, solving problems, and reflecting on their learning experiences. As a result, the learning process promotes transformation not only in students' conceptual understanding but also in their attitudes and behaviors toward religious and social diversity (Shodiq & Kuswanto, 2024).

These results reinforce the view that values are internalized more effectively when students engage in authentic learning experiences rather than merely receiving conceptual explanations. From the perspective of the Deep Learning paradigm, learning experiences that incorporate exploration, reflection, collaboration, and problem-solving enable students to construct meaning more profoundly. The present study further extends this perspective by demonstrating that authentic learning experiences also provide an effective medium for translating the principles of religious moderation into students' everyday practices. Accordingly, the orchestration of adaptive Islamic Religious Education (PAI) learning contributes not only to the achievement of academic learning outcomes but also to the cultivation of a moderate character through participatory, reflective, and contextually grounded learning processes (Musyahid & Kolis, 2023).

3.4 Orchestrating Adaptive Assessment to Strengthen Deep Learning and Religious Moderation

Assessment in adaptive Islamic Religious Education (PAI) is conceived not merely as a means of measuring students' mastery of subject content but as an integral component of the learning process that guides students toward Deep Learning while fostering the character of religious moderation.

Teachers orchestrate assessment continuously throughout the learning process by integrating diagnostic, formative, and summative assessments alongside self-reflection, portfolio assessment, and project-based assessment. Accordingly, assessment serves as a comprehensive source of evidence for monitoring students' conceptual understanding, higher-order thinking skills, attitudes, and character development(Sugrah, 2023).

Diagnostic assessment constitutes the initial stage in orchestrating adaptive learning. Before determining appropriate instructional strategies, teachers identify students' prior knowledge, previous learning experiences, and individual learning needs. This information provides the foundation for implementing differentiated instruction, ensuring that each student engages in learning experiences aligned with their level of readiness and individual characteristics. Such an approach demonstrates that assessment functions not only as an evaluative tool but also as a foundation for informed pedagogical decision-making(Zikri & Syafii, 2023).

Throughout the learning process, teachers implement formative assessment on an ongoing basis through reflective questioning, observation of group discussions, student presentations, and constructive feedback on students' work. These assessment practices are intended to monitor students' learning progress, identify misconceptions, and provide timely opportunities for students to improve their learning. Consequently, assessment becomes an integral part of the learning process rather than a separate activity conducted only at the end of instruction (Riadi et al., 2026).

Beyond assessing cognitive achievement, teachers also employ authentic assessment through self-reflection, portfolio assessment, and project-based learning. Students are evaluated not only on the basis of their responses to tests but also on their ability to reflect on their learning experiences, collaborate effectively with peers, solve authentic problems, and demonstrate behaviors that embody the principles of religious moderation. Project-based assessment, for example, provides students with opportunities to translate the values of tolerance, shura (consultative decision-making), responsibility, and social responsibility into authentic practices within both school and community settings (Fuady & Al Maddani, 2025).

The implementation of adaptive assessment in Islamic Religious Education (PAI) reflects a shift from the traditional paradigm of assessment of learning toward assessment for learning and assessment as learning. Assessment is no longer viewed merely as a means of determining students' final achievement but as a continuous process that enables students to understand their learning progress, refine their learning strategies, and develop greater awareness of the values they are expected to internalize. Such a paradigm shift is consistent with the principles of the Deep Learning framework, which recognizes reflection, constructive feedback, and authentic learning experiences as essential elements in fostering meaningful learning (Vienlencia, 2025).

Authentic assessment has long been recognized as a fundamental component of twenty-first-century education because it captures students' higher-order thinking, problem-solving, collaboration, and reflective capacities. The present study extends this perspective by demonstrating that authentic assessment also functions as a pedagogical mechanism for strengthening the internalization of religious moderation. Through adaptively designed assessment practices, teachers gain insights not only into students' academic achievement but also into the development of a moderate character as reflected in their patterns of thinking, social interactions, and decision-making throughout the learning process (Rawanita & Jannah, 2025).

3.5 A Conceptual Model of Adaptive Islamic Religious Education (PAI) Learning Orchestration through a Deep Learning Approach Grounded in Religious Moderation

The overall results of this study led to the development of a conceptual model illustrating how adaptive Islamic Religious Education (PAI) learning can be systematically orchestrated through a Deep Learning approach grounded in the principles of religious moderation (Szymańska, 2024). The model was developed by synthesizing four interrelated components identified throughout the study: instructional design, learning interactions, the internalization of religious moderation, and adaptive assessment. Rather than operating independently, these components function as an integrated learning system in which each element continuously informs and reinforces the others, creating a cyclical process that fosters meaningful learning experiences while strengthening students' moderate character (Perdani et al., 2025).

The conceptual model further illustrates that the orchestration process begins with adaptive instructional design, which encompasses the analysis of learning outcomes, the formulation of learning objectives, the development of the Learning Objectives Flow (Alur Tujuan Pembelajaran [ATP]), the preparation of teaching modules, and the integration of the principles of religious moderation into every learning activity. This stage provides the pedagogical foundation for the entire learning process by ensuring that every planned learning experience is intentionally aligned with the dual goals of developing students' academic competencies and cultivating their character (Maskur & Al Madani, 2026).

The orchestration process subsequently progresses to the stage of learning interactions. At this stage, teachers assume the role of learning orchestrators who facilitate classroom dynamics through exploration, dialogue, collaboration, problem-solving, and reflective activities. Rather than serving as the primary source of knowledge, teachers create learning environments that are meaningful, mindful, and joyful, enabling students to engage actively in the construction of knowledge while developing critical thinking, communication, collaboration, and decision-making skills (An & Zhang, 2024).

Learning interactions also provide the primary context for the internalization of religious moderation. The principles of *tawassuth* (moderation), *tawazun* (balance), *tasamuh* (tolerance), *i'tidal* (justice and fairness), and *shura* (consultative decision-making) are not presented merely as normative concepts but are embedded within authentic learning experiences, including case-based learning, collaborative discussions, social projects, religious inquiry, and reflective practice. Such experiences enable students to construct a more open, balanced, and contextually grounded understanding of religion, allowing the principles of religious moderation to evolve from abstract concepts into enduring dispositions reflected in their everyday attitudes and behaviors (Chomsky, 2024).

The learning process is further strengthened through the orchestration of adaptive assessment. Rather than serving solely to measure learning outcomes, assessment functions as a continuous mechanism for reflection, feedback, and instructional improvement. By integrating diagnostic, formative, and summative assessments with portfolio assessment, self-reflection, and project-based assessment, teachers gain comprehensive insights into students' academic development as well as the cultivation of their moderate character. In this way, assessment becomes an integral component of the adaptive learning cycle rather than a discrete evaluative activity (Laili, 2025).

The synthesis of these four components gives rise to a conceptual model that positions learning orchestration as the central integrating mechanism of the entire instructional process. Within this model, teachers act as architects of the learning ecosystem, connecting instructional design, classroom interactions, value internalization, and adaptive assessment into a coherent and interconnected system. Such orchestration enables Islamic Religious Education (PAI) to move beyond the transmission of conceptual knowledge toward fostering deep learning experiences while cultivating a moderate character that is meaningfully enacted in students' social lives (Mumu Mumu et al., 2025).

Building upon these findings, the present study proposes the Adaptive Islamic Religious Education (PAI) Learning Orchestration Model through a Deep Learning Approach Grounded in Religious Moderation as its primary conceptual contribution. The model underscores that the effectiveness of Islamic Religious Education is determined not solely by the quality of instructional content or teaching methods, but by teachers' capacity to orchestrate the entire learning process as an integrated pedagogical system. Such orchestration fosters learning experiences that are adaptive, reflective, collaborative, and oriented toward character development (Kuswanto et al., 2023).

The proposed conceptual model addresses the research objective by demonstrating that adaptive Islamic Religious Education learning emerges from the integration of instructional design, learning interactions, the internalization of religious moderation, and adaptive assessment within a unified pedagogical system. It further suggests that the effectiveness of the Deep Learning paradigm depends not on the application of isolated instructional strategies but on the coherent alignment of

interconnected pedagogical components. While these findings are consistent with the Deep Learning framework advanced by Fullan and colleagues, the present study extends that framework by positioning religious moderation as the core of students' learning experiences, thereby offering a new conceptual framework for the development of Islamic Religious Education in madrasahs (Sugrah, 2023; Vienlentina, 2025).

4. CONCLUSION

This study demonstrates that the orchestration of adaptive Islamic Religious Education (PAI) through a Deep Learning approach grounded in religious moderation constitutes an integrated pedagogical system that brings together instructional design, learning interactions, value internalization, and adaptive assessment. The dynamic interplay among these components creates learning experiences that are meaningful, mindful, and joyful, enabling students not only to develop conceptual understanding but also to cultivate critical thinking, reflective practice, collaborative competence, and a moderate character that is expressed in their everyday lives.

A key contribution of this study is the development of the Adaptive Islamic Religious Education Learning Orchestration Model, which conceptualizes teachers as learning orchestrators responsible for coordinating the entire learning ecosystem. By positioning religious moderation at the core of students' learning experiences, the model extends the Deep Learning framework beyond the pursuit of academic competence to encompass the cultivation of inclusive, tolerant, and socially responsible character within the context of Islamic Religious Education.

The scope of this study is limited to a single madrasah, and therefore the transferability of the findings should be interpreted with appropriate caution. Future research could validate and refine the proposed conceptual model across different educational levels, institutional contexts, and geographical settings. Employing mixed-methods approaches would also provide a more comprehensive understanding of the model's effectiveness in enhancing learning outcomes, twenty-first-century competencies, and the development of religious moderation.

REFERENCES

- A'lawi, A. I. A., & Budianto, N. (2025). Integrating religious moderation values into Islamic religious education: A pedagogical approach for primary schools. *Journal of Islamic Education Research*, 6(4), 409–426. <https://doi.org/https://doi.org/10.18326/aicoies.v1i1.332>
- Abidin, A., Amien, S., & Nurhakim, M. (2025). Strategi pembiasaan dan dampaknya pada pembentukan karakter religius siswa di Sekolah Menengah Kejuruan. *Jurnal Ilmiah Global Education*, 6(2), 835–846.
- An, S., & Zhang, S. (2024). Effects of ability grouping on students' collaborative problem solving

- patterns: Evidence from lag sequence analysis and epistemic network analysis. *Thinking Skills and Creativity*, 51, 101453. <https://doi.org/https://doi.org/10.2307/4450070>
- Andriani, D., Husna, A., Ramadan, S. M., & Faqot, N. (2025). Peran Guru PAI dalam Membentuk Literasi Digital dan Karakter Moderasi Beragama Siswa di Era Modern. *JIMU: Jurnal Ilmiah Multidisipliner*, 4(01). <https://doi.org/https://doi.org/10.31227/osf.io/jsb2u>
- Anfa Muarif, Nuryati, E. (2024). PENERAPAN PENDEKATAN HUMANISTIK DALAM PENDIDIKAN KARAKTER SISWA SEKOLAH DASAR. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 09.
- Aprilia, A. R., & Hasanah, F. (2024). Peran Guru Tahfidzul Qur ' an dalam Meningkatkan Kualitas Hafalan Al- Qur ' an pada Siswa di SD Takhasus Al-Qur ' an Kalibeber Wonosobo. 4, 134–143.
- Ariani, S. (2023). *Ulumuna*. 27(2), 624–648.
- Arifin, H., & Al Madani, K. (2024). UPAYA KEPEMIMPINAN KEPALA MADRASAH DALAM MENINGKATKAN PROFESIONALITAS GURU DAN STAF PENDIDIKAN DI MA. *QOLAMUNAA: Jurnal Pendidikan Agama Islam*, 1(1), 49–60.
- Asep, S. E. (2023). Kemampuan Berpikir Kritis dan Kemandirian Belajar dengan Hasil Belajar Matematika. *Jurnal Pendidikan Dasar*, 7(2), 1–23.
- Baharun, H. (2023). Penilaian Berbasis Kelas Pada Pembelajaran Pendidikan Agama Islam Di Madrasah. *MODELING: Jurnal Program Studi PGMI*, 3(2).
- Bahri, S. (2023). Tracing the Trend on Digital Competence of English Teacher; the Characteristic and Strategic Improvement. *Pedagogik: Jurnal Pendidikan*, 10(1), 73–85. <https://doi.org/10.33650/pjp.v10i1.5940>
- Barradas, R., Lencastre, J. A., Soares, S. P., & Valente, A. (2024). Arduino-based mobile robotics for fostering computational thinking development: an empirical study with elementary school students using problem-based learning across Europe. *Robotics*, 13(11), 159. <https://doi.org/https://doi.org/10.58809/kpej6842>
- Chomsky, N. (2024). Verbal behavior. By BF Skinner. (The Century psychology series.) Pp. viii, 478. New York: Appleton-Century-Crofts, Inc., 1957. *Language*, 100(3), 579–603. <https://doi.org/https://doi.org/10.1353/lan.2024.a937190>
- Dwi Afriyanto¹, Anatansyah Ayomi Anandari², Sukiman³, S. (2025). Transformasi Mindset Guru Pendidikan Agama Islam Profesional di MTs Al-Barokah Robotika. 10(1), 881–888.
- Elharrouss, O., Akbari, Y., Almadedd, N., & Al-Madedd, S. (2024). Backbones-review: Feature extractor networks for deep learning and deep reinforcement learning approaches in computer vision. *Computer Science Review*, 53, 100645.
- Firmando, H. G., Khair, N., & Setiawati, C. (2025). Religious Education 5.0: Concept, Design, and Implementation of Adaptive Pedagogy in Islamic Religious Education for the Society 5.0 Era.

- Indonesian Journal of Islamic Educational Review*, 2(3), 241–254.
- Fuady, A. S., & Al Maddani, K. (2025). EVALUATION OF THE CHILD-FRIENDLY SCHOOL POLICY IN CREATING A SAFE AND INCLUSIVE EDUCATIONAL ENVIRONMENT AT MI DARUL HUDA. *International Conference on Humanity Education and Society (ICHES)*, 4(1). <https://doi.org/https://doi.org/10.4018/978-1-7998-5360-2.ch031>
- Gusliana, E., Wahyudi, A., Nurjanah, S., & Umurohmi, U. (2025). 21st Century Elementary School Management: Creative Strategies towards Meaningful Learning. *Terampil: Jurnal Pendidikan Dan Pembelajaran Dasar*, 12(1), 1–22. <https://doi.org/10.24042/terampil.v12i1.27890>
- Hasani, K., Khojir, K., Saparuddin, M., & Munawaroh, A. A. F. (2025). Implementation of Multicultural Education in Islamic Religious Education Learning to Foster Tolerance and Brotherhood in Junior High School (SMPN) 2 Samarinda. *AL GHAZALI: Jurnal Pendidikan Dan Pemikiran Islam*, 5(2), 359–377. <https://doi.org/doi.org/10.4324/9781003455783-5>
- Huda, M. (2024). Incorporating the Value of Religious Moderation in Islamic Education Learning. *Al-Hayat: Journal of Islamic Education*, 8(1), 221–235. <https://doi.org/https://doi.org/10.1515/9783110969443.374>
- Ilmamuna, K., Mu'ammara, M. A., & Hadi, M. F. (2023). Revitalisasi madrasah tsanawiyah berbasis pesantren sebagai penguatan religiusitas siswa di Madrasah Tsanawiyah Negeri 3 Kota Surabaya. *Jurnal Al-Ulum*, 10(3), 279–291. <https://doi.org/https://doi.org/10.21070/pedagogia.v7i2.1570>
- Juan Garzon, M. (2025). Pengembangan Kompetensi Pedagogik pada Guru PAI Fahmi Abdulloh Efendi. *Pengembangan Kompetensi Pedagogik Pada Guru PAI*, 3(2), 38–46.
- Kamila, A. (2023). Pentingnya pendidikan agama Islam dan pendidikan moral dalam membina karakter anak sekolah dasar. *Al-Furqan: Jurnal Agama, Sosial, Dan Budaya*, 2(5), 321–338. <https://doi.org/https://doi.org/10.71094/fondasi.v1i1.16>
- Khan, Z. R. (2024). Academic Integrity Training Module for Academic Stakeholders: IEPAR Framework. *Journal of Academic Ethics*, 22(1), 9–31. <https://doi.org/10.1007/s10805-024-09517-8>
- Kusumawati, I. T., Soebagyo, J., & Nuriadin, I. (2022). Studi Kepustakaan Kemampuan Berpikir Kritis Dengan Penerapan Model PBL Pada Pendekatan Teori Konstruktivisme. *JURNAL MathEdu*, 5(1), 13–18.
- Kuswanto, E., Mubin, M. N., & Kurniawan, D. S. (2023). Internalizing Islamic moderation: a model approach for educational institutions. *Ijoresh Indonesian Journal of Religion Spirituality and Humanity*, 2(1), 93–113. <https://doi.org/https://doi.org/10.59373/jelin.v1i2.72>
- Laili, M. . I. (2025). Implementasi Kurikulum Cinta dalam Pembelajaran Bahasa Arab di Madrasah. *Sekolah Tinggi Agama Islam (STAI) Al-Yasini Pasuruan*, 1(2), 10–40. <https://doi.org/https://doi.org/10.35931/am.v6i2.2685>

- Latifah, Hamadanah, A. Q. (2025). PENDEKATAN DEEP LEARNING PADA KURIKULUM BERBASIS CINTA DI MADRASAH IBTIDAIYAH ASSALAM MARTAPURA. *JIPDIK: Jurnal Ilmu Pendidikan*, 2(2), 37–47.
- Liu, X. (2025). Application and Challenges of Artificial Intelligence in Education: Current Status, Issues, and Future Directions. *International Journal of Social Science and Education Research*, 8(6), 150–159. <https://doi.org/10.6918/IJOSSER.202506>
- Maskur, M., & Al Madani, K. (2026). Microlearning for Teaching Faraid, Balaghah, and Qawaid Fiqhiyyah: A Qualitative Study on Instructional Time Constraints. *EDU-RELIGIA: Jurnal Keagamaan Dan Pembelajarannya*, 9(1), 54–65. <https://doi.org/https://doi.org/10.21203/rs.3.rs-7867349/v1>
- Massadah, E., & Widaningsih, L. (2023). Measurement of the Level of Digital Competence of Vocational Teachers in Learning Development. *Indonesian Journal of Multidiciplinary Research*, 4(1), 189–196. <https://doi.org/10.17509/ijomr.v4i1.72053>
- Mujahid, A., & Madum, M. (2025). Integrasi nilai-nilai Islam dalam pendidikan karakter siswa perspektif pendidikan agama Islam. *Journal of Islamic Education and Learning*, 5(1), 7–21. <https://doi.org/https://doi.org/10.32332/riayah.v1i02.116>
- Mukhlis, M., Basari, M. H., & Handayani, F. (2023). Lingkungan pendidikan islam dan problematika:(kajian terkait komponen utama lingkungan pendidikan islam). *AL GHAZALI: Jurnal Pendidikan Dan Pemikiran Islam*, 3(2), 76–92. <https://doi.org/https://doi.org/10.31219/osf.io/6tzws>
- Mumu Mumu, Aan Hasanah, Hariman Surya Siregar, & Asep Nursobah. (2025). Teachers' Spiritual Competence Based On The Values Of Al-Qur'an Surah Al-Fatihah. *International Journal Of Humanities Education and Social Sciences (IJHESS)*, 4(5), 2341–2350. <https://doi.org/10.55227/ijhess.v4i5.1506>
- Murtadho, N., & Hanafi, Y. (2023). Insertion of moderate character through project learning in Islamic Religious Education courses. *Indonesian Journal of Islamic Religious Education*, 1(2), 123–140. <https://doi.org/doi.org/10.23919/cisti.2019.8760969>
- Musyahid, M., & Kolis, N. (2023). Religious moderation implementation in Islamic education: A systematic review. *FITRAH: Jurnal Kajian Ilmu-Ilmu Keislaman*, 9(2), 265–284. <https://doi.org/https://doi.org/10.30596/arraysid.v6i1.29809>
- Narut, Y. F., & Supradi, K. (2023). Literasi sains peserta didik dalam pembelajaran ipa di indonesia. *Jurnal Inovasi Pendidikan Dasar*, 3(1), 61–69. <https://doi.org/https://doi.org/10.21831/pep.v18i2.2867>
- Nawaz, M., Nazir, T., Javed, A., Amin, S. T., Jeribi, F., & Tahir, A. (2024). CoffeeNet: A deep learning approach for coffee plant leaves diseases recognition. *Expert Systems with Applications*, 237, 121481.

- Perdani, A. S., Umar, G., Dewata, I., & Amar, S. (2025). Pembangunan Berkelanjutan di Pesisir Indonesia : Tantangan dan Solusi atas Ancaman Lingkungan. *Hakhara Akademia Indonesia*, 2(1), 11–22. <https://doi.org/https://doi.org/10.33846/sf16417>
- Prasetyo, E., & Harahap, N. (2025). Masyarakat dan Lingkungan Pendidikan dalam Perspektif Ibnu Khaldun. *Ainara Journal (Jurnal Penelitian Dan PKM Bidang Ilmu Pendidikan)*, 6(2), 313–322. <https://doi.org/https://doi.org/10.31219/osf.io/8eq25>
- Putri, J. I., Laila, A., Farda, F., & Zahro, A. (2026). Analisis Program Pembiasaan Religius dalam Pembentukan Karakter Siswa. *JlIP-Jurnal Ilmiah Ilmu Pendidikan*, 9(1), 1295–1301.
- Rawanita, M., & Jannah, M. (2025). Perkembangan Keberagamaan di Masa Prasekolah: Perspektif Pendidikan Islam Anak Usia Dini. *Fathir: Jurnal Studi Islam*, 2(2), 286–307. <https://doi.org/https://doi.org/10.35719/annisa.v13i1.26>
- Riadi, A., Al-Madani, K., Anshori, I., Anwari, M., & Atayev, M. (2026). Digital-Based Innovation in Qur'anic Learning at Taman Pendidikan Al-Qur'an: An Exploratory Sequential Design. *Al Irsyad: Jurnal Studi Islam*, 5(1), 31–44.
- Rifdillah, M. (2025). Implementation of Islamic religious education in the industrial era 4.0: Opportunities, challenges, and adaptation strategies. *At-Tadzkir: Islamic Education Journal*, 4(2), 121–132.
- Sah, F., Sasikirana, H. N., & Pujiani, T. (2024). The Role of Project-Based Learning in Developing 21 st Century Skills in EFL Classes. *Publisher: Yayasan Corolla Education Center*, 4, 257–272.
- Sakir, M. (2023). Pendidikan Islam Dalam Sistem Pendidikan Nasional. *Cendekia: Jurnal Kependidikan Dan Kemasyarakatan*, 12(1), 103. <https://doi.org/10.21154/cendekia.v12i1.370>
- Shi, L., Muhammad Umer, A., & Shi, Y. (2023). Utilizing AI models to optimize blended teaching effectiveness in college-level English education. *Cogent Education*, 10(2). <https://doi.org/10.1080/2331186X.2023.2282804>
- Shodiq, M., & Kuswanto, K. (2024). Strategi Pembentukan Karakter Religius Siswa Melalui Pendidikan Berbasis Keteladanan Dan Pembiasaan. *Arsy*, 8(2), 134–146. <https://doi.org/https://doi.org/10.56358/japb.v5i1.250>
- Šinko, S., Navarro, J., Solé-Beteta, X., Zaballo, A., & Gajšek, B. (2024). Challenges that need to be addressed before starting new emergency remote teaching at HEIs and proposed solutions. *Sustainability*, 16(3), 1144. https://doi.org/https://doi.org/10.5353/th_b4004005
- Siringoringo, R., Asbari, M., & Margaretta, C. (2024). Strategi Pembelajaran Berdiferensi : Akselerasi Meningkatkan Potensi Peserta Didik. 02(05), 13–16.
- Sugrah, N. U. (2023). Implementasi teori belajar konstruktivisme dalam pembelajaran sains. *Humanika*, 19(2), 121–138. <https://doi.org/10.21831/hum.v19i2.29274>

- Suparlan, S. (2024). Teori Konstruktivisme dalam Pembelajaran. *Islamika*, 1(2), 79–88. <https://doi.org/10.36088/islamika.v1i2.208>
- Supriatna, N., & Holik, A. (2025). The Implementation of Differentiated Instruction in Islamic Religious Education to Enhance Students' Learning Motivation. *Journal of Science and Education (JSE)*, 6(1.1), 1–10.
- Supriyadi, T., Julia, J., Rahminawati, N., Usarov, J. E., Usmanovna, K. F., Fayzullayevich, R. J., & Baxtiyorovna, A. S. (2025). Enhancing religious literacy for the promotion of tolerance: A design-based approach to developing an Islamic education model in higher education. *International Research Journal of Multidisciplinary Scope*, 6(3), 310–324. https://doi.org/https://doi.org/10.1300/j009v03n04_02
- Susanto, E., Budimansyah, D., Komalasari, K., & Masyitoh, I. S. (2024). Pendidikan Kewarganegaraan Digital: Upaya Meningkatkan Keadaban Digital pada Warga Negara Muda Indonesia. *Jurnal Moral Kemasyarakatan*, 9(2), 309–320. <https://doi.org/https://doi.org/10.18574/nyu/9781479840526-014>
- Suyasmini, N. P. (2022). Pendekatan Saintifik dengan Metode Pembelajaran Kooperatif Tipe Jigsaw untuk Meningkatkan Motivasi dan Hasil Belajar Matematika pada Siswa Kelas V SD. *Journal of Education Action Research*, 6(4), 539–545. <https://doi.org/https://doi.org/10.31237/osf.io/2pr4s>
- Syauqi, M., & Wahidin, I. (2025). Strategi Pembelajaran Pendidikan Islam Berbasis Teknologi untuk Generasi Milenial. *Jurnal Ilmiah Guru Madrasah*, 4(1), 106–120. <https://doi.org/https://doi.org/10.56114/al-ulum.v3i3.428>
- Syukri, M. D. A., & Rosyad, A. (2025). Integrating modern technology in islamic religious education: Challenges and opportunities for teachers. *The Journal of Academic Science*, 2(4), 1148–1156.
- Szymańska, M. (2024). The Teacher Spiritual Development in the Reference to the Metaphorical Understanding of “Education as a Spiritual Journey” by Parker J. Palmer. *Multidisciplinary Journal of School Education*, 13(1 (25)), 29–44. <https://doi.org/10.35765/mjse.2024.1325.02>
- Thoyib, M. E., Degaf, A., Fatah, A. A., & Huda, M. (2024). Religious tolerance among Indonesian Islamic university students: The pesantren connection. *Journal of Al-Tamaddun*, 19(2), 239–250. https://doi.org/https://doi.org/10.1300/j009v27n02_04
- Trabelsi, Z., Alnajjar, F., Parambil, M. M. A., Gochoo, M., & Ali, L. (2023). Real-time attention monitoring system for classroom: A deep learning approach for student's behavior recognition. *Big Data and Cognitive Computing*, 7(1), 48.
- Vienlentia, R. (2025). Integrasi Pendekatan Sosial-Emosional dalam Manajemen Pembelajaran di Sekolah Dasar. *Oriented Classroom Management*, 9(2), 294–308. <https://doi.org/10.33363/satya-sastraharing.v9i2.1844>
- Widiyastutik, D., Hanifah, A. N., Thobroni, A. Y., & Baihaqi, M. (2025). Lingkungan Pendidikan Islam

- Berbasis Hadis Tarbawi dalam Perspektif Pendidikan Kontemporer. *Al Yasini: Jurnal Keislaman, Sosial, Hukum Dan Pendidikan*, 10(6), 643.
<https://doi.org/https://doi.org/10.62815/darululum.v13i1.81>
- Wijoyo, D. O. (2023). Analisis Media Sosial Mengenai Isu Indonesia Sebagai Negara Paling Tidak Sopan di Asia Tenggara. *Jurnal Riset Manajemen Komunikasi*, 1–6.
<https://doi.org/https://doi.org/10.5209/tekn.69547>
- Zaman, B. (2023). Penerapan Active Learning Dalam Pembelajaran Pai. *Jurnal As-Salam*, 4(1), 13–27.
<https://doi.org/10.37249/as-salam.v4i1.148>
- Zikri, A., & Syafii, A. G. (2023). Internalizing Religious Moderation Values Into The Islamic Education At University. *Journal of Namibian Studies*, 33. <https://doi.org/https://doi.org/10.63243/shj9st82>