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Research Article

Reconstructing the Integration of Religion and Science through al-Attas' Epistemology: A Deep Learning Instructional Model for Islamic Religious Education

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ABSTRACT

Purpose of the study: This study aims to analyse Syed Muhammad Naquib al Attas epistemological framework on the integration of religion and science and to formulate its application within Islamic Religious Education in contemporary learning contexts in order to address knowledge fragmentation and support deep and meaningful learning.

Methodology: This study uses a qualitative library research method. The data sources include primary works by Syed Muhammad Naquib al Attas, international peer reviewed journal articles, and selected IEEE indexed conference proceedings. Qualitative content analysis was employed, supported by Mendeley reference management software and document analysis techniques.

Main Findings: This study identifies four core epistemological concepts in al Attas framework, namely human nature, knowledge, reason, and nature, grounded in a tawhid based worldview and guided by adab. Based on these concepts, a four component instructional model for Islamic Religious Education was formulated to support conceptual coherence and deep learning.

Novelty/Originality of this study: This study introduces an operational instructional model that translates al Attas epistemological ideas into practical guidance for Islamic Religious Education. It advances existing scholarship by bridging classical Islamic epistemology with contemporary deep learning principles, offering a structured framework that addresses knowledge fragmentation and strengthens meaning oriented learning.

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1. INTRODUCTION

Islamic Religious Education in schools is facing a major challenge in the form of a separation between religious knowledge and science in the learning process. This separation is not only curricular but also epistemological. Students tend to view religion as a normative teaching that only addresses worship and moral conduct, while science is understood as empirical knowledge that has no connection to spiritual values. This mindset demonstrates the strong influence of secularisation on modern education, which distances the relationship between knowledge about God and knowledge about nature [1]. As a result, Islamic religious

education often loses its relevance to the real issues faced by the younger generation in the context of scientific and technological developments.

Various recent studies confirm that Islamic education today is experiencing a fragmentation of knowledge. Students are not accustomed to seeing the connection between revelation and natural phenomena, resulting in weak holistic thinking skills. Fragmentation makes it difficult for students to understand Islamic teachings in the context of contemporary science [2]. Another finding Kosim [3] revealed that students lack depth of understanding because religious education focuses more on memorisation rather than strengthening meaning. This condition shows that the dominant paradigm of religious education is not in line with the deep learning approach that is now widely developed in modern education [4].

Deep learning requires students to understand meaning, find connections between concepts, and be able to apply knowledge in various relevant situations [5]. However, current Islamic Religious Education (IRE) learning does not fully support these characteristics. Teachers still use conventional approaches that emphasise the delivery of material rather than the development of deep thinking skills. This is where the epistemological and pedagogical problem lies, namely the absence of a model capable of integrating Islamic teachings with scientific developments to produce a deep and meaningful understanding for students.

At this point, the thoughts of Syed Muhammad Naquib al-Attas are highly relevant. Al-Attas offers an educational approach rooted in the Islamic worldview or tauhid worldview, which views all reality as a unity of meaning [3]. In his thinking, there is no separation between religious knowledge and scientific knowledge because both come from the same source of truth. Knowledge in al-Attas' view is not neutral, but contains the goal of forming civilised human beings. The concept of adab emphasised by al-Attas provides a strong philosophical framework for the integration of knowledge while providing moral direction for the process of seeking knowledge [6]-[8].

However, research linking al-Attas's thinking to contemporary pedagogical needs, especially in the context of deep learning, is still very limited. Most research on al-Attas still stops at the philosophical level and has not been translated into an applicable learning model [9]. IRE teachers had difficulty applying the integration of religion and science due to a lack of practical frameworks. The integration carried out by teachers was still symbolic and did not touch on the students' way of thinking [10]. These findings indicate that there is a considerable gap between al-Attas' epistemological ideas and the current curriculum requirements for deep meaningful learning.

Although numerous studies have examined Syed Muhammad Naquib al-Attas' ideas on the Islamisation of knowledge and the integration of religion and science, most existing research remains predominantly philosophical and conceptual in nature [11], [12]. Previous studies have focused on al-Attas' worldview, metaphysical assumptions, and critiques of secular epistemology without sufficiently translating these ideas into operational pedagogical frameworks for classroom practice [13]. Moreover, recent studies on Islamic Religious Education have highlighted the persistence of fragmented learning and the limited application of deep learning principles, yet they rarely engage with al-Attas' epistemology as a foundational solution. As a result, there is a clear gap in the literature regarding the development of an instructional model that systematically integrates al-Attas' epistemological framework with contemporary deep learning approaches in Islamic Religious Education. This study addresses this gap by reconstructing al-Attas' integration of religion and science into a practical, deep learning, oriented instructional model applicable to modern Islamic Religious Education contexts.

Based on the identified research gap, this study aims to analyse Syed Muhammad Naquib al-Attas' epistemological framework concerning the integration of religion and science and to reconstruct this framework into a deep learning oriented instructional model for Islamic Religious Education.[14]-[16]. In doing so, the study addresses the following questions: how al-Attas conceptualises the integration of religion and science within his epistemological framework; how these epistemological concepts can be translated into an operational instructional model aligned with deep learning principles; and what pedagogical implications this model offers for addressing knowledge fragmentation and enhancing conceptual coherence in contemporary Islamic Religious Education.

2. RESEARCH METHOD

This study employs a qualitative library research design aimed at examining Syed Muhammad Naquib al-Attas' epistemological framework on the integration of religion and science and reconstructing it into a deep learning oriented instructional model for IRE. A qualitative approach is considered appropriate because the focus of the study lies in conceptual interpretation, epistemological analysis, and theoretical synthesis rather than in empirical measurement or statistical testing. The research is theoretical and interpretive in nature, situated within qualitative educational and philosophical inquiry. It seeks to analyse ideas, concepts, and meanings embedded in authoritative texts and to develop a coherent instructional framework grounded in Islamic epistemology. Therefore, the study does not aim at statistical generalisation but at analytical depth and conceptual clarity.

This research does not involve human participants or experimental subjects; consequently, concepts such as sample size and sampling techniques are not applicable. The data sources consist of written documents that function as units of analysis, including: 1) primary works by Syed Muhammad Naquib al-Attas, such as Islam and Secularism, Prolegomena to the Metaphysics of Islam, and The Concept of Education in Islam; and 2) secondary sources in the form of recent international peer-reviewed journal articles and selected conference proceedings discussing Islamic epistemology, integration of knowledge, and deep learning in education.

Data were collected through systematic document analysis. Relevant texts were carefully selected based on their direct relevance to the research focus and examined in depth to identify key epistemological ideas related to human nature, knowledge, reason, nature, and adab. To support consistency in analysis, a conceptual analysis framework was employed to guide the extraction and organisation of relevant concepts across the examined texts. Data analysis was conducted using qualitative content analysis. The process involved three main stages. First, key epistemological concepts articulated by al-Attas were identified across the primary texts. Second, these concepts were categorised into coherent thematic domains that reflect the Islamic worldview and principles of tawhid. Third, the identified themes were synthesised and reconstructed into an instructional model aligned with deep learning characteristics, including meaning orientation, conceptual coherence, integrative application, and reflective understanding. To strengthen analytical rigour, theoretical triangulation was applied by comparing interpretations derived from al-Attas' primary works with insights from contemporary scholarly literature. This approach ensured internal consistency and enhanced the trustworthiness of the analysis.

This study does not employ statistical analysis, inferential testing, or power calculation, as it is qualitative and conceptual in nature. The strength of the study lies in its epistemological coherence, analytical depth, and theoretical contribution, rather than numerical representativeness. Validity in this research is established through systematic analysis, conceptual consistency, and careful interpretation of authoritative sources. All references and citations were managed using reference management software to ensure accuracy and consistency with the journal's citation standards.

3. RESULTS AND DISCUSSION

3.1. Intellectual Biography of Syed Muhammad Naquib al-Attas

Syed Muhammad Naquib al-Attas is one of the most influential Muslim thinkers of the modern era, particularly in the fields of philosophy of science, Islamic education, and the Islamisation of knowledge. He was born in 1931 in Bogor to a Johor noble family with strong spiritual and intellectual lineage from the Ba Alawi Hadhramaut tradition. A family environment rich in scientific and Sufi traditions shaped al-Attas' intellectual character from an early age. In his autobiography, he describes how his youth was filled with interactions with traditional scholars and classical texts that enriched his understanding of Islamic heritage.

Al-Attas' intellectual journey further developed when he studied at the Royal Military Academy Sandhurst in England, then continued his studies at the University of Malaya, McGill University and the School of Oriental and African Studies in London. At McGill, he studied under Fazlur Rahman and Isma'il al-Faruqi, two great figures in modern Islamic studies. However, al-Attas had a distinctive approach that differed from both of them. He rejected Rahman's secularisation and offered a concept of Islamisation of knowledge that was more epistemological than merely institutional. His dissertation at SOAS on the Sufism of Hamzah Fansuri not only demonstrated his precision as an intellectual historian, but also revealed his methodological depth in understanding the relationship between metaphysics, language and civilisation [17]-[20]

In addition to being known as a scholar, al-Attas was also a pioneer in establishing the International Institute of Islamic Thought and Civilisation in Kuala Lumpur, which became a centre for the development of Islamic civilisation studies in the 1990s. Through this institution, al-Attas succeeded in combining classical Islamic scientific traditions with modern academic approaches, giving rise to important ideas about the Islamic worldview, the concept of adab and the reconstruction of Islamic epistemology. Various recent academic publications show that al-Attas' ideas are increasingly relevant in the context of modern education because they offer a framework that unites religion, reason and science into a single meaning [6].

Al-Attas' intellectual biography shows that his ideas did not arise sporadically, but were rooted in spiritual experience, classical scientific tradition and modern education, which he received in a balanced manner [21]-[23]. The strength of his thinking lies in his ability to read contemporary civilisational problems through the lens of Islamic metaphysics, while offering epistemological solutions that can be implemented in the education system. This makes al-Attas' contribution very important to study in an effort to strengthen the integration of religion and science in Islamic Religious Education learning in the context of modern education.

3.2. Intellectual Biography of Syed Muhammad Naquib al-Attas

Syed Muhammad Naquib al-Attas's thought is based on the framework of Islamic metaphysics, which is discussed in depth in several of his major works, such as Islam and Secularism, Prolegomena to the Metaphysics of Islam, The Concept of Education in Islam, and On Justice and the Nature of Man. These works emphasise that

the core of Islamic education is the formation of civilised individuals through the process of imparting true knowledge and placing everything in its proper position. These concepts are not only philosophical in nature, but also form the basis for the reconstruction of the curriculum and pedagogy in modern Islamic education, as reinterpreted by many contemporary researchers [24].

One of the most fundamental ideas in al-Attas' thinking is the Islamic worldview or Islamic view of nature. In Prolegomena to the Metaphysics of Islam, al-Attas explains that the Islamic worldview is not merely a collection of concepts, but a comprehensive perspective that encompasses an understanding of God, humanity, science, nature and the purpose of life. According to al-Attas [25], this unified perspective stems from the principle of tawhid, which unifies all aspects of existence. In this way, al-Attas rejects the separation between religious knowledge and scientific knowledge because both are branches of knowledge that originate from the same source of truth. This perspective then became the basis for the concept of knowledge integration developed in several other writings such as Islam and Secularism and Risalah untuk Kaum Muslimin (A Treatise for Muslims).

The concept of adab is another important pillar in al-Attas's thinking. In The Concept of Education in Islam, he asserts that the ultimate goal of Islamic education is to produce people who have adab, which is the ability to place things in their proper place based on the hierarchy of existence and knowledge [25]. For al-Attas, adab includes true knowledge about God, the self, science and reality. Therefore, adab is not merely ethical behaviour, but also an epistemological foundation that shapes the correct way of thinking. In this view, the loss of adab will lead to a condition of confusion of knowledge, characterised by an inability to understand the essence of things and the relationships between concepts in a proportional manner [26].

In addition to worldview and adab, al-Attas strongly emphasises the importance of Islamising knowledge. He does not position this idea as a rejection of modern science, but rather as an effort to place knowledge within the correct framework of meaning [27]. For al-Attas, Islamisation means removing secular philosophical elements that contradict tawhid, then refilling knowledge with key Islamic concepts such as spirit, reason, revelation, wisdom and justice. This idea is systematically presented in Islam and Secularism and several other supporting writings such as The Intuition of Existence and On Justice and the Nature of Man. In the context of education, the idea of Islamisation of knowledge is aimed at ensuring that the entire learning process is based on the principles of manners, does not get caught up in the fragmentation of knowledge, and does not neglect the spiritual dimension of human beings [28].

Al-Attas' works demonstrate a strong coherence between metaphysics, epistemology and the direction of education. He not only offers concepts but also builds a framework of thinking that can be applied in integrated religious and scientific learning [29]. This thinking is an important basis for efforts to reconstruct IRE learning that is oriented towards depth of meaning, integration of knowledge and strengthening of adab character, in line with the demands of deep learning in the modern era.

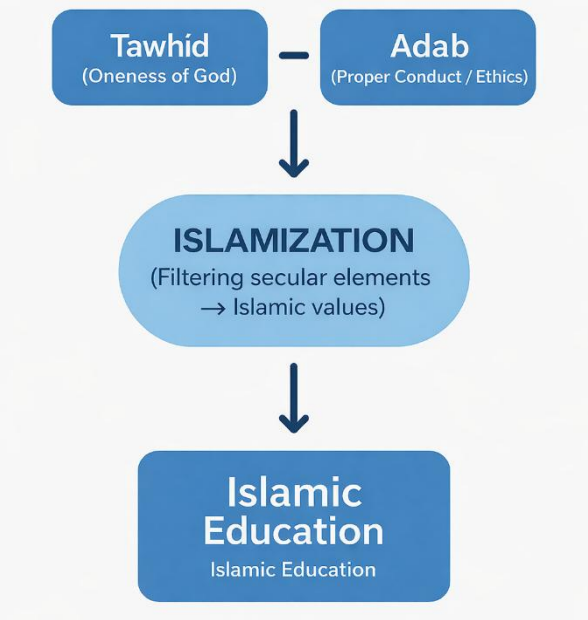

Figure 1. The Main Concepts of Syed Muhammad Naquib al-Attas's Thought

3.3. The Idea of Integrating Religion and Science according to al-Attas and Its Differences from Other Figures

The integration of religion and science in the thinking of Syed Muhammad Naquib al-Attas is an idea rooted in the principle of tawhid as the centre of the entire structure of knowledge. According to al-Attas, the most fundamental error in modern education does not lie in the subject matter of science itself, but in the way humans understand the nature of science. Therefore, the integration of knowledge cannot be achieved simply by adding religious arguments to scientific learning or by inserting moral values into scientific material. Integration, in al-Attas' view, is epistemological and must begin with the correction of fundamental concepts such as humanity, knowledge, reason and nature [8].

The concept of humanity in al-Attas's thinking is not merely a rational or biological being, but a civilised being with spiritual responsibilities. Humans are seekers of truth who must submit their reason to divine guidance. Without a proper understanding of humanity, education will lose its direction and become trapped in pragmatic goals. The concept of knowledge must also be cleansed of modern understandings that view information and empirical data as the only forms of knowledge. In al-Attas' view, knowledge is the arrival of meaning in the human soul. Therefore, knowledge always contains ethical and spiritual dimensions.

The concept of reason according to al-Attas also does not stand alone. Reason must be positioned in a harmonious relationship with revelation and true intuition. Reason without the guidance of revelation can lead to deviation, while revelation without reason weakens humanity's ability to understand the signs of God. The concept of nature is understood as ayat kauniyah, or signs of God's power that must be read within the framework of tawhid. Nature is not merely an empirical object, but a reflection of divine order and wisdom. By correcting these basic concepts, the integration of religion and science can be built comprehensively so as to avoid the confusion of knowledge that al-Attas has often criticised [30], [31].

Based on this epistemological framework, al-Attas emphasises that the integration of religion and science is not merely a matter of attaching verses from the Qur'an to scientific topics, but rather directing the entire process of knowledge towards the right goals. Religion provides the metaphysical and ethical foundations that guide the goals of science, while science helps humans understand natural phenomena as manifestations of God's greatness. Therefore, al-Attas rejects the idea that modern science is neutral. According to him, all knowledge is bound to a particular worldview. This view is in line with contemporary research which states that the separation of religion and science in modern education has led to a loss of depth of meaning in the learning process [32], [33].

To understand al-Attas's position more comprehensively, it is important to compare him with other figures who have also discussed the Islamisation of science, namely Ismail Raji al-Faruqi, Ziauddin Sardar and Seyyed Hossein Nasr. Although these four figures share the same vision regarding the importance of epistemological reconstruction in Islamic education, each has a different approach. Al-Faruqi emphasises Islamisation in the reconstruction of the curriculum and academic disciplines. Sardar offers an in-depth critique of modern science and encourages the development of alternative sciences that are more ethical and humanistic. Meanwhile, Nasr bases the integration of science on a spiritual framework and perennial philosophy that places nature as a sacred entity [34].

Al-Attas, on the other hand, has a different focus. He works at the most basic epistemological level by correcting fundamental concepts so that the integration of religion and science does not only occur in the curriculum structure, but also in the structure of meaning that shapes human thinking [35]. These differences in approach can be seen in the following Table 1.

Table 1. Comparison of the Integration of Knowledge between al-Attas, al-Faruqi, Sardar and Nasr

Figure	Primary Focus of Integration	Method of Islamisation or Integration	Criticism of Modern Science	Advantages of the Approach
Syed Muhammad Naquib al-Attas	Correction of basic scientific concepts based on the worldview of tawhid and adab	Islamisation at the epistemological level and key concepts	Rejecting neutral science, modern science is laden with a secular worldview	Most robust epistemologically, integration is comprehensive
Ismail Raji al-Faruqi	Reconstruction of academic disciplines and curricula	Rewriting all academic disciplines	Science can be "Islamised" through curriculum reconstruction	Practical in higher education institutions
Ziauddin Sardar	The development of a new Islamic science	Reconstruction of scientific methods based on ethics and social considerations	Colonial, hegemonic and non-neutral modern science	Highly critical of the socio-political dimensions of science

Figure	Primary Focus of Integration	Method of Islamisation or Integration	Criticism of Modern Science	Advantages of the Approach
Seyyed Hossein Nasr	The return of science to the sacredness of nature and Sufi metaphysics	The perennial approach and spiritual cosmology	Modern science distances humans from the spiritual cosmos	Emphasising the sacredness and spirituality of science

This comparison shows that al-Attas' thinking is fundamentally different. While al-Faruqi works at the curriculum level, Ziauddin Sardar at the level of scientific practice, and Nasr at the spiritual-perennial level, al-Attas works at the deepest epistemological level, namely the correction of meanings and basic concepts before science is developed further. This makes al-Attas the most relevant figure for the development of a model of science integration in Islamic Religious Education, as learning requires a correct framework of thought before it can proceed to the reconstruction of material [34].

Al-Attas's integration of knowledge is also in line with the deep learning approach. Deep learning requires students to connect concepts in a meaningful way, understand the structure of knowledge as a whole, and be able to place knowledge in the right context. These principles are in line with the concepts of adab and unity of meaning that form the basis of integration according to al-Attas, so that his thinking has the power to improve learners' perspectives on the relationship between religion, nature and science.

3.4. Challenges of Modern IRE Learning and the Relevance of Science Integration

Islamic Religious Education in the context of modern education faces epistemological challenges in the form of a disconnect between religious knowledge sources and students' understanding of empirical reality. This challenge arises because the curriculum structure and teaching patterns still inherit the paradigm of separate disciplines between religious studies and science. Hussin's research shows that many students understand religion only as normative doctrine while science as independent objective knowledge. This epistemological disconnect results in fragmented thinking, making it difficult for students to see the connection between religious commands, moral values, and the natural phenomena they encounter in their daily lives [36].

In addition to epistemological challenges, IRE learning also faces pedagogical obstacles, especially in developing higher-order thinking skills. Many teachers are still stuck in an information-oriented learning pattern, limiting the space for students to process meaning, analyse problems, and integrate various forms of knowledge [37]. A learning model is insufficient to meet the needs of students living in a knowledge-based society. As a result, their understanding of IRE is often superficial and not contextual.

Furthermore, changes in the digital technology landscape demand IRE learning that is able to assist students in reading reality more critically [38], [39]. Religious, social and scientific information disseminated in digital media is often fragmented, unverified and lacks a clear structure of meaning. Nasution's 2022 research found that students need to have meaning literacy skills, not just information literacy, so that they do not get caught up in misleading instant understanding. This condition requires a learning approach that can connect texts, contexts and learning experiences in depth. This perspective is in line with the findings of Rahman and Jalal in 2023, which emphasise the importance of deep learning in Islamic education to overcome the shallow mindset produced by digital culture. It is at this point that the relevance of the integration of knowledge according to al-Attas becomes very significant [40]. By placing all knowledge within the framework of the tauhid worldview, al-Attas' concept of integration can help students build an integrated understanding between religious teachings and empirical phenomena. This framework provides a clear epistemological direction so that IRE learning does not only teach texts but also guides students to read the meaning behind the realities of life. This integration also addresses pedagogical challenges by encouraging students to connect concepts in depth, rather than simply receiving information. Thus, the integration of knowledge in al-Attas' perspective can be an important foundation for the development of IRE learning that is relevant, reflective and meaning-oriented in the digital age.

3.5. Synthesis of the Model of Integration of Religion and Science in IRE Learning

Based on Syed Muhammad Naquib al-Attas' epistemological framework and pedagogical needs in modern education, the synthesis of the model of integration of religion and science in Islamic Religious Education learning can be formulated through four main interrelated components.[41] This synthesis is constructed to address the fragmentation of knowledge, strengthen the structure of meaning, and facilitate deep learning that is relevant to the context of learners' lives. This approach is in line with contemporary Islamic education ideas that emphasise the relationship between values, knowledge and learning experiences, as discussed by Hashim in 2020 and Saeed in 2021 [42], [43].

The first component is meaning orientation, which is the initial stage of learning that guides students to understand the spiritual and intellectual objectives of the material being studied [44]. This orientation draws inspiration from al-Attas' concept of adab, in which knowledge must be placed within the correct value framework before being studied further. In this way, students can understand that religious knowledge and science have a meeting point in the principle of tawhid, rather than being two separate fields of knowledge. This approach also helps students develop epistemological awareness, which is the basis for deep learning.

The second component is the dialogue between qauliyah verses and kauniyah verses, namely the integration between revelatory texts and empirical phenomena. At this stage, teachers guide students to see how religious concepts are relevant to natural phenomena as explained by science. For example, the study of creation can be linked to the orderliness of the cosmos, or the study of purification can be linked to scientific knowledge about hygiene and health. This dialogical approach has been shown to increase depth of understanding because students practise connecting cross-disciplinary concepts, an important element in integrative learning [26].

The third component is integrative application, which is the stage where students combine religious and scientific knowledge to understand real-life issues [45]. At this stage, teachers facilitate activities such as case studies, thematic projects or contemporary problem analysis. Through this method, students learn to see how Islamic values guide the use of science in environmental, technological, health or social issues. Such integrative applications not only strengthen the relevance of IRE learning but also foster higher-order thinking skills.

The fourth component is meaning reflection, which is the process of reorganising learning experiences through critical reflection. This reflection is important to ensure that the integration of knowledge is not only understood as an intellectual exercise but also leads to changes in attitude and behaviour. In the context of al-Attas' thinking, reflection is a space for students to assess whether the understanding they have gained has led to good manners and strengthened their knowledge structure. This stage is increasingly important in the context of modern education because deep reflection helps students avoid superficial understanding, as found in research on digital learning [46].

These four components form a learning cycle that integrates Islamic epistemology with modern pedagogical practices. Meaning orientation builds a value framework, concept dialogue connects disciplines, integrative application places knowledge in real life, and meaning reflection strengthens the knowledge structure of learners. Thus, the integration model developed from al-Attas's thinking is able to address the needs of Islamic education in the 21st century while maintaining the basic principles of Islamic education, which is oriented towards the formation of civilised individuals.

3.6. Implications of the Integration Model for Contemporary Islamic Education

The synthesis of the integration model demonstrates that Syed Muhammad Naquib al Attas' epistemological framework functions not merely as a philosophical foundation but as an operational pedagogical guide for addressing knowledge fragmentation in contemporary Islamic Religious Education [47]. The four component model consisting of meaning orientation, dialogue between qauliyah and kauniyah knowledge, integrative application, and reflective meaning consolidation shows that the integration of religion and science is fundamentally an epistemological process rooted in a tawhidic worldview. This finding reinforces the view that meaningful learning in Islamic education must prioritise the construction of meaning rather than the transmission of disconnected information, which corresponds directly with the principles of deep learning.

From a theoretical perspective, the model confirms the internal coherence of al Attas' key epistemological concepts when translated into pedagogical practice. Meaning orientation reflects al Attas' emphasis on adab as the proper placement of knowledge within a moral and metaphysical hierarchy [48]. The dialogue between revelatory and empirical knowledge embodies the unity of knowledge and rejects the modern dichotomy between religion and science [49]. Integrative application situates knowledge within real life contexts and aligns intellectual understanding with ethical responsibility, while reflective meaning consolidation ensures that learning culminates in the internalisation of meaning. This process is consistent with al Attas' conception of knowledge as the arrival of meaning in the soul. This alignment indicates that deep learning in Islamic education cannot be separated from epistemological clarity and moral orientation.

In comparison with previous studies, this research offers a distinct contribution to the literature on the integration of religion and science. Earlier approaches such as al Faruqi's curriculum oriented Islamisation and Nasr's spiritually oriented perennial philosophy provide important insights but remain either institutional or metaphysical in focus. Similarly, many studies in Islamic Religious Education emphasise pedagogical techniques without a strong epistemological grounding [50]-[51]. In contrast, this study bridges epistemology and pedagogy by reconstructing al Attas' philosophical ideas into an instructional model that is both conceptually coherent and pedagogically applicable. This positions the proposed model as an intermediary framework that connects classical Islamic epistemology with contemporary educational demands.

The novelty of this study lies in its translation of al Attas' epistemological framework into a structured instructional model that supports deep learning in Islamic Religious Education. Unlike previous research that remains at the level of conceptual discourse, this study provides an operational framework that can guide

curriculum development, instructional design, and teacher practice [52], [53]. Practically, the model encourages educators to move beyond symbolic integration such as merely attaching Qur'anic verses to scientific topics and towards meaningful engagement between religious values and empirical understanding [54], [55]. This has important implications for curriculum reform, teacher professional development, and the cultivation of higher order thinking skills grounded in Islamic ethical principles.

Despite its contributions, this study is limited by its conceptual and library based research design and does not include empirical implementation or measurement of learning outcomes. Future research is therefore recommended to empirically test the proposed instructional model in classroom settings, to examine its effectiveness in enhancing deep learning and character formation, and to explore its adaptability across different educational levels and socio cultural contexts. Such empirical validation would further strengthen the relevance of al Attas' epistemological integration for contemporary Islamic education.

4. CONCLUSION

This study concludes that the integration of religion and science in the thought of Syed Muhammad Naquib al Attas is fundamentally epistemological in nature and cannot be reduced to curricular arrangement or instructional technique alone. By grounding knowledge within a tawhid based worldview and orienting education toward the formation of adab, al Attas provides a coherent foundation for addressing the problem of knowledge fragmentation in contemporary Islamic Religious Education. This conclusion directly answers the research objective of analysing al Attas epistemological framework and its relevance for contemporary learning contexts. Beyond responding to the research problem, this study also produces a qualitative conceptual contribution in the form of an instructional model for Islamic Religious Education. The proposed model consists of four interconnected components, namely meaning orientation, dialogue between revelatory and empirical knowledge, integrative application, and reflective consolidation of meaning. This model represents a synthesis between classical Islamic epistemology and contemporary deep learning principles. It demonstrates that al Attas philosophical ideas can be translated into an operational framework that guides teaching and learning processes in a meaningful and systematic manner. From a theoretical perspective, the findings of this study affirm that meaningful learning in Islamic education depends on epistemological clarity and moral orientation. Knowledge integration is not merely a matter of combining subject content, but of placing knowledge within a coherent structure of meaning that unites intellectual understanding with ethical responsibility. This reinforces al Attas conception of knowledge as the arrival of meaning in the human soul and contributes to ongoing discussions on epistemology and learning theory in Islamic education. From a pedagogical perspective, the proposed model offers practical implications for educators. It encourages teachers to move beyond symbolic integration of religious texts and scientific content toward learning practices that foster conceptual coherence, critical reflection, and contextual application of knowledge. Through this approach, Islamic Religious Education can better support the development of deep understanding and meaningful engagement with both religious values and empirical reality. At the institutional and policy level, the findings suggest that curriculum development and teacher professional preparation should prioritise epistemological understanding and integrative pedagogy. Educational institutions are encouraged to cultivate an academic culture that emphasises unity of knowledge, ethical orientation, and reflective learning as central principles of Islamic education.

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AUTHOR CONTRIBUTIONS

Conceptualization was carried out by Nini Nursima. Methodology, formal analysis, investigation, data curation, and project administration were conducted by Nini Nursima. Writing of the original draft and subsequent revisions were undertaken by Nini Nursima, with Amril contributing through review and editorial input. Validation of the conceptual framework and overall supervision of the research process were provided by Amril.

CONFLICTS OF INTEREST

The author(s) declare no conflict of interest.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

The authors declare that no artificial intelligence (AI) tools were used in the generation, analysis, or writing of this manuscript. All aspects of the research, including data collection, interpretation, and manuscript preparation, were carried out entirely by the authors without the assistance of AI-based technologies.

REFERENCES

[1] D. Dill and M. Beerkens, *Public Policy for Academic Quality: Analyses of Innovative Policy Instruments*. 2010. doi: 10.1007/978-90-481-3754-1.

[2] X.-Y. Wu, "Exploring the effects of digital technology on deep learning: a meta-analysis," *Educ. Inf. Technol.*, vol. 29, pp. 425–458, 2024, doi: 10.1007/s10639-023-12307-1.

[3] M. Kosim, "Syed Muhammad Naquib al-Attas' ideas on the Islamization of knowledge and its relevance to Islamic education in Indonesia," *MIQOT J. Islam. Stud.*, vol. 44, no. 2, pp. 123–145, 2021, doi: 10.30821/miqot.v44i2.724.

[4] M. Fullan, J. Quinn, and J. McEachen, *Deep Learning: Engage the World, Change the World*. Thousand Oaks, CA: Corwin, 2020.

[5] M. Fitrah *et al.*, "Are teachers ready to adopt deep learning pedagogy? the role of technology and 21st-century competencies amid educational policy reform," *Educ. Sci.*, vol. 15, no. 10, p. 1344, 2025, doi: 10.3390/educsci15101344.

[6] I. Yunita, A. Saidah, and M. Fahmi, "The imperative of integrating knowledge and adab in reconstructing islamic education in the digital era: A study of Al-Attas's thought," *J-PAI: Jurnal Pendidikan Agama Islam*, vol. 11, no. 2, 2025, doi: 10.18860/jpai.v11i2.32660.

[7] J. Arroisi, H. F. Zarkasyi, and W. Roini, "The relevance of contemporary epistemology on existing knowledge: A critical analysis of western scientific worldview according to al-Attas perspective," *Afkar: Jurnal Akidah dan Pemikiran Islam*, vol. 25, no. 2, pp. 225-256, 2023, doi: 10.22452/afkar.vol25no2.7.

[8] M. Mahamood and S. Ismail, "Worldview education framework based on al-Attas' conception of adab," *J. Islam. Contemp. Soc.*, vol. 4, no. 2, pp. 45–59, 2022, doi: 10.33102/jics.v4i2.376.

[9] M. Jannah, "The islamization process by syed muhammad naquib Al-Attas and its relevance on islamic science," *Kawanua International Journal of Multicultural Studies*, vol. 3, no. 2, 57-65, 2022, doi: 10.30984/KIJMS.v3i2.61.

[10] F. Rahman and M. Jalal, "Deep learning approaches in Islamic pedagogy: Strengthening value-based reasoning," *Int. J. Instr.*, vol. 16, no. 1, pp. 112–130, 2023, doi: 10.29333/iji.2023.1617a.

[11] Q. Zhou, H. Zhang, and F. Li, "The impact of online interactive teaching on university students' deep learning—the perspective of self-determination," *Educ. Sci.*, vol. 14, no. 6, p. 664, 2024, doi: 10.3390/educsci14060664.

[12] Z. H. Hasan and M. Yusof, "Teaching for understanding in Islamic education classrooms," *Teach. Teach. Educ.*, vol. 98, p. 103245, 2021, doi: 10.1016/j.tate.2020.103245.

[13] H. Nasrullah and F. Abdullah, "Knowledge fragmentation among Muslim students: A contemporary analysis," *Int. J. Islam. Thought*, vol. 20, pp. 1–10, 2021, doi: 10.24035/ijit.20.2021.253.

[14] R. W. Hefner, "Islam and institutional religious freedom in Indonesia," *Religions*, vol. 12, no. 6, p. 415, 2021, doi: 10.3390/rel12060415.

[15] S. M. N. al-Attas, *Islam and Secularism*. Kuala Lumpur: ISTAC, 2018.

[16] S. M. N. al-Attas, *Prolegomena to the Metaphysics of Islam*. Kuala Lumpur: ISTAC, 2019.

[17] T. B. Chuan, "The malay epistemological background in the islamic writings of hamzah fansūrī," *Al-Shajarah: Journal of the International Institute of Islamic Thought and Civilisation (ISTAC)*, vol. 29, no. 1, pp. 153-179, 2024, doi: 10.20871/kpjipm.v9i2.267.

[18] A. Yaacob, "Revisiting al-Attas' Islamisation of knowledge in the twenty-first century," *Stud. Islam. Civilis.*, vol. 5, no. 2, pp. 50–68, 2023.

[19] A. Niyozov and M. Memon, "Islamic education philosophy and contemporary pedagogical reform," *Comp. Educ. Rev.*, vol. 64, no. 1, pp. 98–117, 2020, doi: 10.1086/706140.

[20] A. Amaral and M. J. Rosa, "Quality assurance models and institutional learning," *Eur. J. Educ.*, vol. 55, no. 1, pp. 8–23, 2020, doi: 10.1111/ejed.12378.

[21] J. Brennan, "Quality assurance as institutional learning," *Stud. High. Educ.*, vol. 45, no. 7, pp. 1341–1354, 2020, doi: 10.1080/03075079.2019.1659762.

[22] P. Trowler, *Academic Tribes and Territories*. London: Bloomsbury, 2021.

[23] S. H. Nasr, *Man and Nature: The Spiritual Crisis of Modern Man BT - Man and Nature: The Spiritual Crisis of Modern Man*. London, United Kingdom: Routledge, 2019.

[24] S. M. N. al-Attas, *Prolegomena to the Metaphysics of Islam BT - Prolegomena to the Metaphysics of Islam*. Kuala Lumpur, Malaysia: ISTAC, 2020.

[25] S. M. N. al-Attas, *The Concept of Education in Islam: A Framework for an Islamic Philosophy of Education BT - The Concept of Education in Islam: A Framework for an Islamic Philosophy of Education*. Kuala Lumpur, Malaysia: Ta'dib International, 2019.

[26] R. Omar, "Integrative knowledge frameworks in contemporary Islamic pedagogy," *Int. J. Islam. Educ.*, vol. 14, no. 2, pp. 221–239, 2022.

[27] O. Filippakou and G. Williams, "Quality assurance as governance," *High. Educ. Q.*, vol. 75, no. 2, pp. 179–194, 2021, doi: 10.1111/hequ.12277.

[28] F. Rahman and M. Jalal, "Deep learning approaches in Islamic pedagogy," *Int. J. Instr.*, vol. 16, no. 1, pp. 112–130, 2023, doi: 10.29333/iji.2023.1617a.

[29] G. Nadia, "The Concept of Ta'dib Syed Muhammad Naquib al-Attas in Children's Moral Education," *Al-Ishlah J.*

Pendidik. Islam, vol. 23, no. 2, pp. 82–92, 2025, doi: 10.35905/alishlah.v23i2.14708.
[30] F. Khalid and M. M. Idris, "Holistic learning and character formation in Islamic pedagogy," *J. Educ. Sci.*, vol. 19, no. 2, pp. 122–136, 2020.
[31] M. Kosim, "Islamization of knowledge and its educational implications," *J. Islam. Educ. Stud.*, vol. 5, no. 1, pp. 45–60, 2020, doi: 10.24235/educasia.v5i1.6104.
[32] S. Sururin, Y. L. Ramadhan, and F. Syauqii, "Building national character through religion-based educational sciences," *Integr. Sci. Educ. J.*, vol. 6, no. 3, 2025, doi: 10.37251/isej.v6i3.2144.
[33] N. Arif et al., "Digital literacy dimensions in secondary education," *Integr. Sci. Educ. J.*, vol. 6, no. 3, 2025, doi: 10.37251/isej.v6i3.2112.
[34] I. H. Bimastari and et al., "Energy literacy measurement using the Rasch model," *Integr. Sci. Educ. J.*, vol. 6, no. 3, 2025, doi: 10.37251/isej.v6i3.2025.
[35] A. Nasution, "Syed Muhammad Naquib al-Attas: Islamization of Knowledge by Developing Genuine Islamic Paradigm," *J. Islam.*, vol. 4, no. 2, pp. 73–87, 2022, doi: 10.37859/jsi.v4i2.3077.
[36] Z. Lokmic-Tomkins and et al., "Digital literacy in higher education," *Nurse Educ. Today*, vol. 111, p. 105308, 2022, doi: 10.1016/j.nedt.2022.105308.
[37] I. Mudin, M. Ali, and A. Hidayat, "Critical analysis of the application of deep learning in islamic religious education," *Intiqad J. Agama dan Pendidik. Islam*, vol. 17, no. 1, pp. 167–184, 2025.
[38] A. Fasya, N. Darmayanti, and J. Arsyad, "The Influence of Learning Motivation and Discipline on Learning Achievement of Islamic Religious Education," *Nazhruna J. Pendidik. Islam*, vol. 6, no. 1, pp. 1–12, 2023, doi: 10.31538/nzh.v6i1.2711.
[39] H. Haryani, E. Astriyani, and V. T. Devana, "Exploration of Islamic Religious Learning Innovation Technology with the iLearning Approach," *APTISI Trans. Technopreneursh.*, vol. 3, no. 2, pp. 75–86, 2021, doi: 10.34306/att.v3i2.211.
[40] A. Ahmad, "Konsep Ta'dib Syed Muhammad Naquib Al-Attas dan Implikasinya dalam Pendidikan Islam," *An-Nur J. Stud. Islam*, vol. 13, no. 1, 2021.
[41] M. Fullan and J. Quinn, "Coherence making and meaning-centred learning," *Educ. Leadersh.*, vol. 77, no. 6, pp. 36–43, 2020.
[42] T. Tanti, D. Darmaji, A. Astalini, D. A. Kurniawan, and M. Iqbal, "Analysis of user responses to the application of web-based assessment on character assessment," *Journal of education technology*, vol. 5, no. 3, pp. 356-364, 2021, doi: 10.23887/jet.v5i3.33590.
[43] S. Saridudin, "Deep learning dalam pendidikan agama islam: Mengoptimalkan proses pembelajaran yang lebih mendalam [Deep learning in Islamic religious education: Optimizing a deeper learning process]," *AL-AFKAR : Journal for Islamic Studies*, vol. 8, no. 2, pp. 2103–2118, 2025, doi: 10.31943/afkarjournal.v8i2.2243.Deep.
[44] M. N. Al-attas, "Character Foundations in the Perspective of Syed Ta'dib: Fondasi Karakter dalam Perspektif Syed Muhammad Naquib Al-Attas," *Ta'dib*, vol. 1, no. 2, pp. 70–80, 2023.
[45] T. N. Wiyatno, M. Z. El Wahyu, A. Rahman, and S. Edy, "Integrating stem into religious education: exploring the role of university lecturers in merging science, technology, engineering, and mathematics with faith-based pedagogy," *AL-ISHLAH: Jurnal Pendidikan*, vol. 16, no. 4, pp. 4450-4461, 2024 doi: 10.35445/alishlah.v16i4.5231.
[46] S. Rahimi *et al.*, "Timing of learning supports in educational games can impact students' outcomes," *Comput. Educ.*, vol. 190, p. 104600, 2022, doi: https://doi.org/10.1016/j.compedu.2022.104600.
[47] M. F. Hasim, A. J. Al Mubarak, M. A. Taufiq, A. P. Ramadhani, A. G. Z. Al-Hakim, D. N. Masitho, D. Hariadi, A. Wahid, M. N. Q. Arif, A. S. Utama & Azhari, S. (2025). the concept of islamization of science: A study of the educational philosophy of Syed Muhammad Naquib Al-Attas. *Al-Mabsut: Jurnal Studi Islam Dan Sosial*, *19*(2), 241-263, 2025, doi: 10.56997/almabsut.v19i2.2323.
[48] A. A. Mohamed, M. A., Rozaq, M. Ndow, and M. Rabe, "Adab as the epistemological foundation of Islamic education: A study of Syed Naquib al-Attas," *Journal of World Thinkers*, vol. 2, no. 1, pp. 47-62, 2025, doi: 10.61455/jwt.v2i01.503.
[49] M. F. M. Zacky, and Md. Moniruzzaman, "'Islamic epistemology'in a modern context: Anatomy of an evolving debate," *Social Epistemology*, vol. 38, no. 4, pp. 511-525, 2024, doi: 10.1080/02691728.2023.2227945.
[50] M. Mahmudulhassan, M. Abuzar, S. U. A. Khondoker, and J. Khanom, "The integration of islamic epistemology in ethical and multicultural education: Pedagogical strategies and challenges," *Multicultural Islamic Education Review*, vol. 2, no. 2, pp. 123-135, 2024, doi: 10.23917/mier.v2i2.7612.
[51] H. Habibi, "Revitalization of the Islamic education paradigm: An Islamic epistemological perspective," *Bestari| Jurnal Studi Pendidikan Islam*, vol. 21, no. 2, 2024, doi: 10.36667/bestari.v21i2.1532.
[52] E. Mahmoud, "Practical technology integration into mathematics teaching in elementary education: Instructional design model, teaching strategies, and assessment techniques," *Remittances Review*, vol. 8, no. 4, pp. 2912-2932, 2023, doi: 10.33182/rr.v8i4.202.
[53] L. Li, F. Yu, and E. Zhang, "A systematic review of learning task design for K-12 AI education: Trends, challenges, and opportunities," *Computers and Education: Artificial Intelligence*, vol. 6, pp. 100217, 2024, doi: 10.1016/j.caeai.2024.100217.
[54] F. Sugiarto, "Integration of Qur'an and Hadith values as pedagogical innovation to improve the quality of Islamic education," *QALAMUNA: Jurnal Pendidikan, Sosial, dan Agama*, vol. 17, no. 1, pp. 171-184, 2025, doi: 10.37680/qalamuna.v17i1.6817.
[55] M. R. Nasucha, K. Khozin, and I. A. Thoifah, "Synergizing islamic religious education and scientific learning in the 21st century: A systematic review of literature," *Jurnal Pendidikan Agama Islam (Journal of Islamic Education Studies),* vol. 11, no. 1, pp. 109-130, 2023, doi: 10.15642/jpai.2023.11.1.109-130.