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Integration of Religion and Science from Abdus Salam's Perspective

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ABSTRACT
This article examines Abdus Salam's thoughts on the integration of religion and science in the context of the development of modern Islamic science. This study aims to describe the philosophical foundations, integration models, and the relevance of Salam's ideas in responding to the challenges of contemporary science. The study uses qualitative methods through literature review using documentation techniques on Salam's primary works, scientific books, and recent journal articles. Data analysis was conducted using content analysis to identify key concepts and link them to Islamic scientific discourse. The results show that Salam built the integration of religion and science based on the principle of monotheism, which views the order of nature as a manifestation of God's will. His integration model encompasses epistemological, axiological, and educational dimensions, emphasizing that scientific activity must have a moral and welfare orientation. These findings contribute to the strengthening of the Islamic scientific paradigm that harmoniously combines revelation and empiricism. This study concludes that Salam's thoughts remain relevant in addressing contemporary issues such as artificial intelligence, biotechnology, and the revitalization of science in the Muslim world, and offers a conceptual framework for the development of character-based Islamic education.

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ABSTRAK
Artikel ini membahas pemikiran Abdus Salam mengenai integrasi agama dan sains dalam konteks perkembangan keilmuan Islam modern. Penelitian ini bertujuan menggambarkan landasan filosofis, model integrasi, dan relevansi gagasan Salam dalam merespons tantangan sains kontemporer. Penelitian menggunakan metode kualitatif melalui studi kepustakaan dengan teknik dokumentasi terhadap karya primer Salam, buku ilmiah, dan artikel jurnal mutakhir. Analisis data dilakukan dengan analisis isi untuk mengidentifikasi konsep kunci dan menghubungkannya dengan diskursus keilmuan Islam. Hasil penelitian menunjukkan bahwa Salam membangun integrasi agama dan sains berdasarkan prinsip tauhid, yang memandang keteraturan alam sebagai manifestasi kehendak Tuhan. Model integrasinya meliputi dimensi epistemologis, aksiologis, dan pendidikan, yang menegaskan bahwa aktivitas ilmiah harus memiliki orientasi moral dan kemaslahatan. Temuan ini berkontribusi pada penguatan paradigma keilmuan Islam yang memadukan wahyu dan empirisme secara harmonis. Studi ini menyimpulkan bahwa pemikiran Salam tetap relevan dalam menghadapi isu kontemporer seperti kecerdasan buatan, bioteknologi, dan revitalisasi sains di dunia Muslim, serta menawarkan kerangka konseptual bagi pengembangan pendidikan Islam yang berkarakter.

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A. INTRODUCTION

The development of modern science and technology has brought about major changes in human life. Science has advanced rapidly, with various discoveries impacting health,

education, economics, and society. However, religion remains a moral guideline that guides human behavior. Throughout history, the relationship between religion and science has often been debated, particularly regarding whether the two can coexist. Abdus Salam, a Nobel Prize-winning Muslim physicist, argued that religion and science should be integrated.[1]

The main problem that arises in contemporary education and modern life is the persistent dichotomy between religion and science. Science is often perceived as neutral and value-free, while religion is confined to the spiritual domain. This separation creates a gap between rationality and morality, causing scientific development to lose ethical direction when it is detached from religious values.[2] Abdus Salam strongly criticized this dichotomy and argued that the integration of religion and science is essential to overcoming the spiritual and ethical crisis of modern scientific progress. According to Salam, scientific activity must be guided by moral responsibility and oriented toward human welfare rather than mere technological advancement. Empirical evidence from various studies demonstrates that technological development lacking ethical foundations has contributed to serious global problems, including environmental degradation caused by excessive exploitation of nature. These conditions reinforce Salam's view that science should not stand independently from moral and religious values, but must be directed toward justice, sustainability, and the welfare of humanity.[3]

Many researchers have studied Abdus Salam's thought, particularly regarding the integration of religion and science. Rezki, Amril, and Dewi emphasize that Salam views science as a form of worship that connects humans with God. Sofia and Dinata emphasize that Salam rejects the secular paradigm in modern science because it is considered to ignore moral values. Alwi and Amril outline the concept of Islamic Science, initiated by Salam, as a new paradigm in Islamic education that emphasizes the integration of revelation and reason. Multahada also emphasizes the relevance of Salam's thought in addressing global issues such as the environmental crisis and the development of digital technology. Thus, previous research indicates that Salam's thought has made an important contribution to building an integrative paradigm between religion and science.

In addition to studies on Abdus Salam, other scholars have discussed the integration of religion and science within Islamic thought and education. For example, integration discourse in Islamic education emphasizes that science and religion should not be separated but harmonized within a *tawhidic* framework, which rejects secular compartmentalization and seeks holistic educational models that combine spiritual and rational dimensions. Studies have shown that an integrated science–religion approach can enrich educational curricula by linking scientific inquiry with ethical and religious values, enhancing students' moral and cognitive development.

Moreover, research on other Muslim thinkers such as Ismail Raji al-Faruqi highlights the Islamization of knowledge, a related integrative paradigm in which revelation and modern science are synthesized to produce a cohesive epistemology that serves both religious and

[1] Simamora, Hotma Ida Br., Amril Amril & Eva Dewi, *Integrasi Agama dan Sains dalam Perspektif Abdussalam* (2024).

[2] Zakaria Virk, *Dr Abdus Salam: His Faith and His Science* (Canada: Kingston, n.d.).

[3] Umayyatun, "Revitalisasi Nilai-Nilai Tauhid Dalam Pendidikan Islam Digital : Telaah Teoritis Dan Praktis Melalui Kecerdasan Buatan," *Isedu: Islamic Eduaction Journal* 3, no. 1 (2025): 68, https://doi.org/10.59966/isedu.v3i1.1758.

worldly objectives. Al-Faruqi's work emphasizes that monotheism (*tawhid*) provides the foundation for integrating religious and scientific knowledge, thereby challenging secular dichotomies and creating intellectual frameworks that address contemporary global problems. These studies from both specific examinations of Salam's thought and wider investigations into the integration of religion and science demonstrate that the discourse is not isolated but part of a broader scholarly effort within Islamic education and epistemology to reconcile rational inquiry with ethical and spiritual commitments.[4]

Several previous studies have examined Abdus Salam's thought on the integration of religion and science. Generally, these studies share a common perspective in viewing Salam as a Muslim scientist who rejects the dichotomy between religion and science and emphasizes *tawhid* as the ethical and epistemological foundation of scientific activity. Research by Rezki, Amril, and Dewi, for example, highlights Salam's view of science as a form of worship that connects human rationality with divine consciousness. Similarly, Sofia and Dinata emphasize Salam's criticism of secularism in modern science, arguing that value-free science neglects moral responsibility. Other studies, such as those by Alwi and Amril, focus on Salam's contribution to Islamic education by framing Islamic Science as an educational paradigm that integrates revelation and reason. Multahada further extends this discussion by underlining the relevance of Salam's ideas in responding to global challenges such as environmental crises and digital technological development.

Despite these valuable contributions, most existing studies tend to approach Abdus Salam's thought in a descriptive and thematic manner, emphasizing ethical values, educational implications, or general critiques of secular science. They often discuss Salam's ideas in isolation or limit their analysis to a single dimension, such as moral orientation or educational reform, without systematically mapping the philosophical structure underlying his integrative framework. Moreover, comparative engagement with other Muslim thinkers who addressed the integration of religion and knowledge—such as Ibn Rushd, al-Ghazali, or contemporary integration theorists—is still relatively limited.

This study differs from previous research in several important aspects. First, it offers a systematic analytical framework by examining Abdus Salam's integration of religion and science through three interconnected dimensions: epistemological, axiological, and educational. Second, this article situates Salam's thought within the broader tradition of Islamic intellectual history by implicitly contrasting his approach with classical figures such as Ibn Rushd, who emphasized the harmony between revelation and rational philosophy, yet did not explicitly address modern scientific and technological challenges. Third, unlike earlier studies, this research explicitly explores the contemporary relevance of Salam's ideas in responding to current issues such as artificial intelligence, biotechnology, and environmental ethics.[5]

The novelty of this study lies in its comprehensive mapping of Abdus Salam's integrative model as a coherent philosophical framework that bridges classical Islamic epistemology and modern scientific practice. By articulating how epistemological integration (unity of

[4] Ayu Savana Humairoh dan Ahmad Mustafidin Ayu, "Integrasi Ilmu Agama Dan Sains Dalam Pendidikan Islam Kontemporer," *Naafi: Jurnal Ilmiah Mahasiswa* 2, no. 3 (2025): 532.

[5] Sheikh Mohd Saleem dan Shah Sumaya Jan Sheikh, "Islam , Ethics and Modern Medicine from Theory to Medical Practice : A Narrative Review," *Studi Agama* 21, no. 2 (2022): 465–90, https://doi.org/10.20885/millah.vol21.iss2.art6.

revelation and reason), axiological integration (ethical orientation of science), and educational integration (character-based scientific education) function as a unified system, this article contributes a more holistic understanding of Salam's thought. Consequently, this study not only enriches the discourse on the integration of religion and science but also offers a conceptual framework that is relevant for the development of Islamic education and ethical scientific practice in the contemporary world.

After reviewing various studies highlighting Abdus Salam's thought, it is important to emphasize the theoretical framework that underpins this study. In Islamic tradition, knowledge is understood as a unity between revelation and reason, and thus the two cannot be separated. Abdus Salam emphasized that knowledge detached from spiritual values will lose its direction and potentially lead to a moral crisis. Therefore, he argued that every scientific activity must be viewed as part of devotion to God, not merely an academic achievement. Based on this foundation, Salam's thought can be understood as an attempt to build an integrative paradigm relevant to Islamic education and the development of civilization.

This article attempts to address this gap by critically analyzing Abdus Salam's integrationist ideas based on primary literature and recent research. The aims of this study are: (1) to explain the foundations of Salam's thinking on the integration of religion and science, (2) to analyze Salam's integration model, and (3) to demonstrate its relevance to Islamic education and contemporary scientific developments. The novelty of this article lies in its comprehensive mapping of Salam's three dimensions of integration and its relevance to modern technological issues.

B. METHODS

This study employed a qualitative library research method with a normative–philosophical approach. The primary data sources consisted of Abdus Salam's key works that explicitly discuss the relationship between religion, science, and ethics, particularly *Islam and Science: Concordance or Conflict?* (1984), *Ideals and Realities* (1987), and several public lectures and essays compiled in *The Renaissance of Sciences in Islamic Countries*. These works were selected because they directly articulate Salam's views on *tawhid*, scientific responsibility, and the moral purpose of scientific activity. Secondary data sources included peer-reviewed journal articles, scholarly books, and international publications that analyze Abdus Salam's thought or discuss broader discourses on the integration of religion and science in Islamic intellectual traditions.

Data collection was conducted through a systematic documentation process. First, the researcher identified relevant texts by Abdus Salam that address science, religion, ethics, and education. Second, these texts were read closely to extract key statements, arguments, and conceptual terms related to the integration of religion and science. Third, the extracted data were categorized into thematic units, such as epistemological foundations, ethical orientation of science, and educational implications. In addition, relevant secondary literature was reviewed to contextualize Salam's ideas within contemporary academic debates and to identify similarities and differences with other scholars' perspectives.

Data analysis was carried out using qualitative content analysis. The collected textual data were analyzed by interpreting recurring concepts, arguments, and normative assumptions in Salam's writings. These concepts were then mapped into three analytical dimensions—

epistemological, axiological, and educational—to construct a coherent model of integration. Furthermore, the findings from Salam's primary texts were compared with interpretations from contemporary researchers to assess the relevance and originality of his ideas in addressing current scientific and technological challenges. Through this analytical process, the study aimed to produce an in-depth and systematic understanding of Abdus Salam's integrative framework rather than a merely descriptive summary of his thought.

C. RESULTS AND DISCUSSION

1. Biography of Abdus Salam

Abdus Salam was born on January 29, 1926, in Jhang, Punjab, a region of British India now part of Pakistan, to a modest and religious family. From an early age, he displayed exceptional intelligence, particularly in mathematics, and by the age of 14 had already produced a paper on number theory. His early secondary education was at Government College University, Lahore, where he earned a BA and MA in mathematics, before proceeding to St John's College, Cambridge, England, where he obtained a PhD in theoretical physics in 1951. At Cambridge, he began his studies in quantum theory and particle physics, fields that would make him one of the most influential scientists of the 20th century. After completing his studies, Salam returned to Pakistan and taught at the University of the Punjab, but limited research facilities forced him back to England. There, he was appointed professor at Imperial College London and established a reputation as a world-class theoretical physicist. Salam's greatest contribution was the development of electroweak theory, the unification of electromagnetic and weak interactions in particle physics, which became a key part of the Standard Model of Particle Physics. For this contribution, in 1979 he was awarded the Nobel Prize in Physics together with Sheldon Glashow and Steven Weinberg.[6]

Beyond his scientific achievements, Abdus Salam's life was also influenced by a complex socio-religious context. Salam was a member of the Ahmadiyya community, a minority group officially designated as non-Muslim by the Pakistani state since 1974. This situation impacted Salam's relationship with the Pakistani government and prevented his contributions to science from receiving official recognition in his own country. Even after his death on November 21, 1996, in Oxford, England, his religious identity remained controversial, as evidenced by the removal of the word "Muslim" from his tombstone in Rabwah, Pakistan. Socio-religiously, Salam found himself in a paradoxical position: he was globally revered as a Nobel Prize-winning Muslim scientist, yet he experienced symbolic marginalization at the national level.[7]

These socio-religious experiences shaped Salam's inclusive and humanistic outlook. He did not view religion as an exclusive identity, but rather as a source of universal moral values that should guide the development of science. From this perspective, science cannot be separated from ethical values and social responsibility. Salam believed that the regularity of natural laws discovered through science is a manifestation of the principle of tawhid, namely the unity and order of God's creation. Therefore, for him, scientific activity is not merely a search for empirical truth, but also a form of spiritual appreciation of God's greatness.

[6] Olof G. Tandberg, "Abdus Salam (1926–1996): More Than a Nobel Laureate,"
[7] Zakaria Virk, *Dr Abdus Salam: His Faith and His Science* (Canada: Kingston, n.d.).

Salam explicitly expressed the idea of integrating religion and science in his work, "Islam and Science: Concordance or Conflict?" (1984). In this work, Salam asserts that Islam theologically encourages the pursuit of knowledge and rejects the dichotomy between revelation and reason. He views the conflict between religion and science as a product of Western history that is irrelevant to the Islamic intellectual tradition. For Salam, science is a sacred duty that must be directed towards the welfare of humanity and social justice.

In addition to his writings, Salam also practically implemented the integration of religion and science through the establishment of the International Centre for Theoretical Physics (ICTP) in Trieste in 1964. This institution was designed to provide access to research and training for scientists from developing countries. The ICTP reflected Islamic scientific ethics, which emphasized justice, the equitable distribution of knowledge, and social responsibility. Through this institution, Salam demonstrated that science should be a means of human empowerment, not merely a symbol of technological superiority.

Thus, Abdus Salam's biography not only chronicles the journey of a great scientist but also illustrates how the socio-religious context of his life shaped integrative thinking between religion and science. Salam symbolizes the ability of a Muslim scientist to contribute significantly to modern science without abandoning his spiritual roots. The integration of religion and science, from Abdus Salam's perspective, is not merely a theoretical concept, but a scientific practice oriented toward faith, ethics, and the welfare of the community.

2. The Concept of Integration of Religion and Science

The concept of integrating religion and science in Abdus Salam's thought cannot be understood solely through a single work, but rather through a constellation of his writings, lectures, and public reflections on science, ethics, and Islamic civilization. In *Islam and Science: Concordance or Conflict?* (1984), Salam explicitly rejects the assumption that religion and science are inherently contradictory. He argues that scientific inquiry, when properly understood, is a continuation of humanity's obligation to read and reflect upon the signs of God (*ayat kauniyah*) embedded in nature. This position is further reinforced in his collection of essays *Ideals and Realities* (1987), where Salam emphasizes that scientific activity must be grounded in moral responsibility and directed toward the welfare of humankind rather than mere technological domination.[8]

Beyond these works, Salam's integrationist perspective is also articulated in his speeches at UNESCO and the International Centre for Theoretical Physics (ICTP), particularly in his reflections on the revival of science in Muslim societies. In these contexts, Salam consistently highlights *tawhid* (the oneness of God) as the foundational worldview that unifies all forms of knowledge. For Salam, the coherence and harmony found in the laws of physics are not value-neutral phenomena but manifestations of divine order. Thus, scientific laws become epistemic bridges connecting empirical investigation with spiritual meaning. This view positions science as a morally charged enterprise, inseparable from ethical accountability and social responsibility.

Salam's emphasis on ethics is also evident in his repeated concern over the misuse of scientific advancement. In various lectures compiled in *The Renaissance of Sciences in Islamic*

[8] Umayyatun, "Revitalisasi Nilai-Nilai Tauhid Dalam Pendidikan Islam Digital : Telaah Teoritis Dan Praktis Melalui Kecerdasan Buatan," *Isedu: Islamic Eduaction Journal* 3, no. 1 (2025): 68, https://doi.org/10.59966/isedu.v3i1.1758.

Countries, he warns that scientific progress devoid of moral guidance risks producing destruction, environmental degradation, and social injustice. Therefore, integration for Salam is not merely epistemological but also axiological: science must serve justice, sustainability, and human dignity. This ethical orientation distinguishes Salam from secular scientific paradigms that treat science as an autonomous and value-free domain.

When compared with other Muslim thinkers who addressed the relationship between religion and knowledge, Abdus Salam's thought demonstrates a distinctive character. Classical figures such as Ibn Rushd emphasized the harmony between revelation and rational philosophy, arguing that true reason cannot contradict divine revelation. However, Ibn Rushd's framework primarily operated within the discourse of philosophy and theology and did not directly engage with modern empirical science or technological challenges. Similarly, contemporary thinkers such as Ismail Raji al-Faruqi proposed the Islamization of knowledge as a methodological project to reconstruct modern disciplines based on Islamic principles. While al-Faruqi focused on curricular and institutional reform, Salam approached integration from within the practice of modern science itself.

The distinctiveness of Abdus Salam's integration model lies in the fact that it emerges from his lived experience as a Nobel Prize–winning physicist deeply committed to Islamic faith. Unlike many integration theorists who operate mainly at the philosophical or educational level, Salam articulates integration from the standpoint of active scientific engagement. His integration is not an external synthesis imposed upon science, but an internal moral orientation arising from within scientific practice. In this sense, Salam does not seek to "Islamize" science in a formal or doctrinal manner, but to reorient scientific consciousness toward *tawhid*, ethical responsibility, and service to humanity.

Thus, Abdus Salam's concept of integrating religion and science can be understood as a *tawhidic–ethical integration* grounded in empirical science, moral accountability, and civilizational concern. By drawing on multiple works and contexts of Salam's thought, this study demonstrates that his integration model offers a unique contribution distinct from both classical philosophical harmonization and modern institutional Islamization projects. His approach provides a framework in which scientific excellence, spiritual awareness, and ethical commitment coexist as inseparable dimensions of human knowledge. During the golden age of Islam, the dichotomy between general knowledge (ilm) and religion (din) was unknown to Muslim scholars; they combined rationality, empirical observation, and spirituality within a single scientific approach.[9] Every scientific discovery is seen as an act of worship to gain a deeper understanding of the Creator, with the Quran being the primary inspiration for their spirit of scientific inquiry. This tradition establishes Islam as a civilization that harmonizes revelation and reason. Al-Biruni, for example, calculated the Earth's radius (6,339.9 km, accurate to 0.26%) using trigonometry from Mount Nandana, and cited Quranic verses about the extent of the heavens and the earth as his methodological inspiration. This approach combines empirical mathematics with Quranic spiritual reflection, demonstrating the harmony between natural observation and divine revelation, making Al-Biruni a model for the integration of science as a form of devotion to God.[10]

[9] Ayu Savana Humairoh dan Ahmad Mustafidin Ayu, "Integrasi Ilmu Agama Dan Sains Dalam Pendidikan Islam Kontemporer," *Naafi: Jurnal Ilmiah Mahasiswa* 2, no. 3 (2025): 532.

[10] "Kisah Al-Biruni, Ilmuwan Muslim yang Mengukur Bumi Bulat," Detik News, 2017.

Ibn Sina (Avicenna) integrated Islamic ethics such as justice, sincerity, and mercy in The Canon of Medicine, emphasizing that medicine for him is inseparable from Islamic moral and spiritual values. He combined surgical science with the principles of prophetic morality in his medical practice, a holistic approach that affirms the harmony of science and morality, and proves science as a service to humanity based on monotheism.[11]

This strong tradition of integration becomes relevant when reading the modern-day thinking of Abdus Salam, a Nobel Prize-winning physicist who remained steadfast in his religious beliefs. Abdus Salam firmly stated that the primary motivation behind his scientific studies was religion. For him, science is a "sacred duty" commanded by the Qur'an to uncover the secrets of the universe as proof of the oneness of God. He rejected the view that science should lead to extreme rationalism or secularism that distances it from religion. Salam believed that if science achieves internal consistency, it will further affirm the greatness of the Creator in the eyes of a believer. The integration of religion and science has significant implications for providing a more comprehensive and meaningful education. This approach allows for the understanding that physics lessons can begin with reflection on verses about light, or biology lessons with discussions of the balance of ecosystems as a divine law. This type of education is expected to foster students who are not only academically intelligent but also possess a strong spiritual and moral foundation. Thus, integration avoids the "science vs. religion" conflict often seen in the West, as in Islam the two are two sides of the same coin.

Islamic education and its curriculum have undergone significant transformation. Many State Islamic Religious Higher Education institutions (PTKIN) have evolved into State Islamic Universities (UIN), with the primary mission of integrating religious and secular knowledge. Modern pesantren such as Gontor and Trensains Tebuireng are also actively combining science curricula with Islamic studies. This model aims to produce graduates who are competent in the sciences while possessing a deep understanding of religion. Such integration serves as a strategic step to harmonize Islamic values with the national education standards required today. Moreover, this integration now extends into modern technological fields such as Artificial Intelligence (AI), ensuring that technological advancements are utilized for the benefit of the Muslim community. AI is increasingly incorporated into Islamic education, for instance through religious-learning chatbots or interactive platforms for Qur'an memorization. Collaboration with Islamic scholars in developing AI content is essential to ensure alignment with Islamic principles. Regular ethical audits of AI systems are also conducted to comply with Islamic guidelines, preventing technology from becoming a moral threat. This integration aims to enhance the understanding of complex Islamic concepts as well as the ethical use of technology.[12]

Ultimately, the concept of integrating religion and science is key to building a strong Muslim intellectual civilization in the 21st century. It represents an effort to reconstruct a scientific and civilizational framework grounded in faith and professional expertise. By understanding that all knowledge comes from God, Muslims are encouraged to actively explore the universe and modern technology. This approach promotes a comprehensive worldview, improves the quality of education, and encourages innovative research rooted in

[11] Sheikh Mohd Saleem dan Shah Sumaya Jan Sheikh, "Islam , Ethics and Modern Medicine from Theory to Medical Practice : A Narrative Review," *Studi Agama* 21, no. 2 (2022): 465–90, https://doi.org/10.20885/millah.vol21.iss2.art6.

[12] A. Priyanto dkk., "Pendidikan Islam dalam Era Revolusi Industri 4.0," *Tarbawiyah* (2020).

moral values. It is a way of life that enables Muslims to excel in global science while remaining firmly committed to their religious teachings.[13]

3. Abdussalam's thoughts on the integration of religion and science

Abdussalam views science as a religious mandate that must be carried out with full moral and ethical responsibility in accordance with Islamic teachings. He emphasized that science is not merely a matter of technical discovery, but also an obligation to reveal God's creation with the aim of improving the welfare of humanity. Science should be used as a means of carrying out this mandate for the benefit of mankind, not merely for power or exploitation. Through its religious dimension, science becomes a form of worship that strengthens faith and devotion to God. Therefore, every Muslim scientist is required to integrate religious values into every scientific activity they undertake.[14]

In Abdussalam's view, the universe is a manifestation of the principle of Tawhid, demonstrating the oneness of God as the Creator of all things. Every natural phenomenon studied by science reflects the greatness of God, who regulates and maintains the universe with structured and consistent rules. This Tawhid teaches that everything in existence originates from one undivided divine power, so science must be directed toward recognizing and appreciating this greatness. The regularities and laws of nature discovered by science are truly empirical evidence of God's oneness. Therefore, scientific research becomes a form of spiritual appreciation and strengthening of faith.[15]

Abdussalam strongly emphasized the importance of ethics and morality in the development of science. He believed that without a moral foundation, science could be misused for purposes detrimental to humans and the environment. Scientific ethics must be the primary guideline to ensure that the knowledge produced is not only accurate but also beneficial and does not violate human values. Morality derived from religion strengthens the integrity of scientists and guides the responsible use of technology. This encourages Muslim scientists to place scientific activities within an Islamic ethical framework that balances progress and social good.[16] One of Abdussalam's main criticisms concerns the stagnation of science in the Muslim world, which he believes is caused by a lack of integration between religious and modern science. He believes that the strict separation between the two has hampered intellectual development and scientific innovation in Muslim societies. This situation has resulted in a backwardness in science, technology, and sustainable education. Abdussalam calls for a new paradigm that aligns science and religion so that Muslims are willing and able to contribute to the advancement of global science. This integration will not only improve the quality of research but also strengthen scientific identity and ethics.[17]

Abdussalam saw the urgent need to integrate religion and science for the development of a more advanced and prosperous Muslim civilization. He encouraged the Islamic education

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[13] Ayu Savana Humairoh dan Ahmad Mustafidin, *"Integrasi Ilmu Agama dan Sains dalam Pendidikan Islam Kontemporer," NAAFI: Jurnal Ilmiah Mahasiswa* 2, no. 3 (2025): 529–531.

[14] Hotma Ida, Amril, dan Eva Dewi"Integrasi Agama Dan Sains Dalam Perspektif Abdussalam," *Jurnal Ilmiah Nusantara* 1, no. 4 (2024): 480–81.

[15] Sri Rezki, "*Integrasi Nilai-Nilai Tauhid dalam Pendidikan Sains*," Prosiding Seminar Nasional 2023, hlm. 10682–10683.

[16] Abdus Salam, *Islam and Science: Concordance or Conflict?,* (Paris: UNESCO, 1984), 1, 7, 11–12.

[17] Sri Rezki, M Amril, and dan Eva dewi, "Integrasi Agama Dan Sains Dalam Wawasan Abdus Salam," *Journal Of Innovative and Creativity* 5, no. 2 (2025): 10681–88.

system to adopt a curriculum that balanced the teaching of religious knowledge with natural sciences. This approach was expected to produce a generation of scientists with a solid understanding of religion and high academic competence. Based on universal Islamic principles and relevant science, Muslims can achieve technological and moral progress. This integrative educational model will prepare individuals with integrity capable of wisely facing the challenges of the times. Therefore, Abdussalam's thinking on the integration of religion and science emphasizes the importance of viewing science as part of religious responsibility, embracing the principle of Tawhid in viewing nature, applying ethics and morality in research, and constructively criticizing the stagnant scientific conditions of Muslims. He believed that only through a harmonious integration of religion and science can scientific progress be achieved without sacrificing spiritual and humanitarian values. This approach can serve as an ideal foundation for the development of a civilization with a balance between science and faith. Therefore, this integration must be seriously implemented in education, research, and scientific policy. This is the answer to global challenges and the needs of modern humanity.

4. The Integration Model of Religion and Science According to Abdussalam

Abdus Salam, a Nobel Prize-winning physicist from Pakistan, emphasized the importance of integrating religion and science as a coherent epistemological framework. Salam viewed religious revelation and scientific observation as not contradictory but rather complementary in understanding the essence of truth.[18] He emphasized that science must be enriched by spiritual values so that it does not lose its moral direction. This integration also serves as an effort to overcome the long-standing dichotomy between religious and modern science. Salam views this approach as the foundation for the development of harmonious and civilized science. Thus, integrative epistemology is the main foundation of his model of thought. Within an axiological framework, Abdus Salam emphasized that scientific activity must be based on ethics and moral values. Salam believes that science without spiritual values has the potential to lead to the misuse of knowledge. Therefore, the integration of religion into scientific practice is necessary to direct scientific goals towards the welfare of humanity. This includes social responsibility and concern for the environment. Salam emphasized that Muslim scientists need to instill religious values in all research. This concept demonstrates that science is not merely the accumulation of data, but also a means of worship and morality.

The educational aspect is a concrete implementation of the epistemological and axiological integration envisioned by Abdus Salam. A curriculum that combines science and religion can shape a generation of intellectuals with character. This integrative education encompasses the simultaneous teaching of scientific principles and moral values. Salam views education as a strategic tool for nurturing individuals who are aware of the relationship between faith and knowledge. This educational model is expected to produce Muslim scientists who excel academically and spiritually. Thus, education becomes a key medium for realizing the integration of religion and science. According to Salam, epistemological integration also emphasizes the importance of a scientific methodology aligned with religious principles. Salam encourages the use of empirical methods that adhere to the values of

[18] Hotma Ida, Amril, dan Eva Dewi"Integrasi Agama Dan Sains Dalam Perspektif Abdussalam."

revelation. This prevents science from being reduced to a purely materialistic approach. By integrating revelation and scientific observation, knowledge becomes more comprehensive. Salam believes that this understanding enriches the intellectual well-being of Muslims. This approach allows the development of modern science to remain relevant to Islamic values.

Axiological integration is also related to scientists' moral responsibility to society. Salam emphasized the use of science for humanitarian purposes. For example, research and technology should be directed towards social good and reducing environmental damage. Salam emphasized the importance of scientific ethics in every innovation. By integrating religious values, science can become a means of strengthening justice and prosperity. This integration emphasizes that science is not only about technical skills but also about social service. Thus, Abdussalam's integration model encompasses interrelated epistemological, axiological, and educational aspects. This integration allows Muslim scientists to maintain scientific excellence without losing spiritual values. This model serves as a guideline for building a character-based education and research system. Salam emphasized that science and religion should exist together, not separately. The integration of religion and science is not merely a theoretical concept, but a practice that can be applied in education and research. This approach demonstrates the relevance of Salam's thinking in the context of the development of modern Muslim civilization.

5. Philosophical Basis for the Integration of Religion and Science According to Abdus Salam's

Abdus Salam's integration of religion and science rests on a solid philosophical foundation, encompassing ontological, epistemological, and axiological dimensions as a whole. The ontological dimension stems from the principle of monotheism, the belief that all reality in the universe is God's creation and subject to His established laws. The order of the cosmos, the harmony of natural phenomena, and the consistency of the laws of physics are direct manifestations of God's oneness. Therefore, studying nature means examining the signs of His greatness. This ontological foundation positions science as an activity aligned with faith, not as a stand-alone discipline.[19]

From an epistemological perspective, Abdus Salam views revelation and reason as not separate sources of knowledge, but as complementary in the search for truth. Revelation provides the framework of values, orientation, and goals of knowledge, while reason and empirical methods are used to systematically examine physical reality. Thus, scientific methodology remains valued as a vital instrument, yet is not divorced from spiritual awareness. This epistemological integration demonstrates that authentic scientific knowledge does not lose its transcendent dimension but rather broadens understanding of the Creator through natural phenomena.[20]

Meanwhile, the axiological dimension provides value guidelines for the use of science. Salam emphasized that science must be conducted based on ethics, responsibility, and a focus on the welfare of the people. Research and technological innovation must not damage the environment, threaten humankind, or conflict with Islamic moral principles. Science must be directed toward upholding the values of justice, goodness, and sustainability, so that scientific

[19] Abdul Hakim. et.al, "Integrasi Ilmu Dan Agama: Perspektif Islam Dalam Ontologi, Epistimologi, Dan Aksiologi Ilmu Pengetahuan," *Pendas: Jurnal Ilmiah Pendidikan Dasar* 10, no. 1 (2025): 197–213.

[20] Irawan, "Integrasi Sains Dan Agama: Suatu Tinjauan Epistemologi," *Tawshiyah* 11, no. 1 (2016): 124.

contributions become part of human devotion to God and others. Thus, axiological integration makes science not merely a collection of theories, but a means of building a dignified civilization.[21]

These three philosophical dimensions explain that Abdus Salam's integration of religion and science is not merely a normative idea but has a strong theoretical basis. The ontology of monotheism explains the nature of reality, the integrative epistemology explains the means of acquiring knowledge, and the ethical axiology explains the purpose and value of using knowledge. This philosophical model makes Salam's concept of integration comprehensive and relevant for application in education, research, and the development of modern scientific policy. With this comprehensive philosophical foundation, Salam's contribution is an important reference in the discourse on scientific integration in the contemporary era.

6. The Relevance of Abdusslam's Thought in a Contemporary Context

Abdus Salam's thoughts on the integration of religion and science are highly relevant in the modern era, when technological advances often pose ethical dilemmas and moral challenges. Salam emphasized the need to unite religious revelation with scientific knowledge so that science does not lose its moral direction and religion retains its influence on the perspectives of Muslim scientists.[22] This approach builds an integrative framework encompassing epistemological, axiological, and educational aspects, so that science and religion can complement each other. This concept is crucial for educational and research institutions to ensure that scientific activities are based on moral and spiritual values. In this way, education, research, and innovation can be carried out in a balanced manner, balancing intellectual intelligence and character development. Salam's approach demonstrates that science can develop modernly without eliminating religious values. In addressing modern technologies such as artificial intelligence, biotechnology, and quantum computing, Salam emphasizes the application of moral values in science. These technologies pose ethical challenges, such as privacy, genetic manipulation, and the use of automated weapons that have the potential to harm humanity. Through axiological integration, Islamic principles of monotheism and justice serve as guidelines for scientific practice and technological development. This approach also encourages collaboration between scientists and religious leaders to maintain a balance between innovation and morality. These values guide the use of technology to remain responsible and beneficial to society. Thus, science and technology are implemented not only for technical progress but also for the benefit of humanity.

Revitalizing science in the Islamic world is crucial given the low scientific contribution of Muslim countries globally. Salam emphasized epistemological integration so that Muslims could embrace modern science without losing their religious identity.[23] With an integrative education that combines scientific and spiritual principles, a generation of Muslim scientists can develop academically and morally. A curriculum that aligns science and faith enables educational institutions to prepare scientists who are adaptable to the latest scientific

[21] Syafrudin, "Integrasi Agama Dan Ilmu Pengetahuan (Sains) (Berdasarkan Kajian Epistemologi Bayani, Irfani Dan Burhani)," *Jurnal Ilmiah Falsafah Jurnal Kajian Filsafat, Teologi Dan Humaniora* 6, no. 1 (2020): 1–15.

[22] Hotma Ida Br. Simamora, Amril Amril, dan Eva Dewi, *Integrasi Agama dan Sains dalam Perspektif Abdus Salam*, *Joecy: Journal of Early Childhood Education* 3, no. 3 (2024): 45–59.

[23] Ayu Savana Humairoh & Ahmad Mustafidin, *Integrasi Ilmu Agama dan Sains dalam Pendidikan Islam Kontemporer*, *Jurnal Studi Pendidikan Islam* 7, no. 2 (2025): 33–50

developments. This integration also lays the foundation for ensuring that STEM innovations in the Islamic world do not conflict with religious values. Salam's thinking encourages the development of holistic and ethical scientific capacity. According to Salam, the paradigm of a future Muslim scientist is one who masters cutting-edge science while adhering to the principles of the Quran and Islamic ethics. The integrative education he proposes prepares scientists who are visionary, ethical, and capable of leading green technology or bioethics research.[24] Salam envisions scientists who can combine modern physics and spiritual values to produce beneficial innovations. This paradigm is relevant for addressing the scientific leadership vacuum in the Muslim world and shaping scientists who serve as ambassadors of civilization. Implementing this model strengthens the harmony between science, morality, and faith in research practice.

Overall, Abdus Salam's thinking provides a solution to the challenges of modernization and technological disruption, with an adaptive and flexible integration model. Epistemological, axiological, and educational integration form the basis for systemic reform in higher education, research, and science policy. This model encourages collaboration among Islamic universities to build centers of scientific excellence based on Islamic values. Salam's approach strengthens Islamic soft power through the ethical and productive contributions of scientists. With this model, Muslims can pursue scientific progress while maintaining their spiritual identity. Salam's thinking provides a practical blueprint for developing science, education, and morality in the 21st century. By applying these three dimensions of integration, Muslims can develop modern science while remaining grounded in ethics and morals. Salam's concept serves as a guide for education, research, and scientific practice that aligns with religious values. The integration of religion and science is a crucial strategy for building a sustainable scientific civilization. Applying this model allows Muslim scientists to contribute globally without losing their spiritual identity. Salam emphasizes that science and religion are not separate entities but can coexist. Therefore, Salam's thinking remains relevant in the contemporary context.

D. CONCLUSION

This study concludes that Abdus Salam's concept of integrating religion and science offers a distinctive and coherent framework that addresses the dichotomy between rationality and morality in modern scientific development. Responding to the research questions posed in the introduction, this study demonstrates that Salam does not view science as a value-neutral activity detached from religion. Instead, he positions scientific inquiry as an integral part of humanity's religious and ethical responsibility grounded in the principle of *tawhid*. Through this perspective, science becomes a means of understanding divine order in nature (*ayat kauniyah*) and must be directed toward the welfare of humanity. Furthermore, this research finds that Abdus Salam's integration model operates across three interconnected dimensions. Epistemologically, Salam emphasizes the unity of revelation and reason, rejecting the assumption that scientific truth and religious truth are inherently contradictory. Axiologically, he stresses that science must be guided by ethical values to prevent misuse, environmental destruction, and social injustice. Educationally, Salam's thought implies the need for an

[24] Hotma Ida Br. Simamora, Amril Amril, dan Eva Dewi, Integrasi Agama dan Sains dalam Perspektif Abdus Salam, Joecy: Journal of Early Childhood Education 3, no. 3 (2024): 45–59.

integrative scientific education that cultivates both intellectual excellence and moral consciousness. In this sense, Salam's approach differs from other integration models, such as classical philosophical harmonization or the Islamization of knowledge project, by emerging directly from scientific practice rather than purely theoretical or institutional reform. Thus, this study answers the central research question by affirming that Abdus Salam's thought provides a unique form of *tawhidic–ethical integration*, in which scientific activity, spiritual awareness, and moral responsibility are inseparable. His ideas remain relevant in addressing contemporary challenges, including technological advancement, environmental crises, and the ethical implications of modern science.

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