belantika Pendidikan

ISSN

Vol.8 (1), Juni 2025, pp. 12-23

Philosophical and Sociological Background of the Integration of Religion and Science

Nunung Masruroh, Amril M
UIN Sultan Syarif Kasim Riau

Article Info

Article History:

Accepted: 12-May-2025
Approved: 12-June-2025

Keywords:

Religion and science integration
Postmodernist philosophy
Crisis of meaning
Holistic approach

ABSTRACT

Abstract: This research discusses the philosophical and sociological background behind the integration of religion and science, which have often been viewed as opposing entities. Using a literature review method, the study finds that this integration is driven by postmodernist thought as a response to the failure of modernism, which overly emphasizes positivism and empiricism. Philosophically, the integration is based on a holistic ontological view of reality, pluralistic epistemology, and axiology that promotes values beneficial for both worldly and spiritual life. Sociologically, it arises in response to modernization, secularization, a crisis of meaning, and society's need for comprehensive education. In conclusion, the integration of religion and science is not merely an academic approach but a philosophical and social necessity for building an intellectually and spiritually balanced society.

Abstrak: Penelitian ini membahas latar belakang filosofis dan sosiologis integrasi agama dan sains, yang selama ini sering dipandang berlawanan. Menggunakan metode studi pustaka, penelitian ini menemukan bahwa integrasi tersebut didorong oleh pemikiran postmodernisme sebagai respons terhadap kegagalan modernisme yang terlalu menekankan positivisme dan empirisme. Secara filosofis, integrasi ini didasari oleh pandangan ontologis yang holistik, epistemologi pluralistik, dan aksiologi yang mengedepankan nilai-nilai duniawi dan ukhrawi. Secara sosiologis, integrasi muncul sebagai respons terhadap modernisasi, sekularisasi, krisis makna, dan kebutuhan masyarakat akan pendidikan yang menyeluruh. Kesimpulannya, integrasi agama dan sains merupakan kebutuhan filosofis dan sosial dalam membangun masyarakat yang seimbang secara intelektual dan spiritual.

Correspondence Address:

Nunung Masruroh,
UIN Sultan Syarif Kasim Riau
Jl. HR. Soebrantas No.Km. 15, RW.15, Simpang Baru, Kota Pekanbaru, Riau 28293
E-mail: 22390125390@students.uin-suska.ac.id

INTRODUCTION

The contemporary discourse on integrating religion and science has gained renewed relevance despite growing dissatisfaction with the epistemological fragmentation characterizing modern thought. Rooted in the Enlightenment legacy, modernism, anchored in positivism, empiricism, and rationalism, prioritized objective observation and mathematical predictability, but at the cost of excluding metaphysical, ethical, and transcendental dimensions of reality (George, 2023; Pradoko, 2019). While this paradigm catalyzed scientific progress and technological advancement, it simultaneously fostered a utilitarian worldview that detached scientific inquiry from moral responsibility. The consequences of such a reductionist orientation are increasingly evident in contemporary crises: ecological degradation, artificial intelligence ethics, dehumanizing technocracy, and the erosion of spiritual values in education and public life.

In response, postmodernism emerged as both a critique and a correction of the limitations of modernist epistemology. Rejecting the presumption of value-free objectivity, postmodern thought affirms the legitimacy of multiple knowledge sources, reason, intuition, revelation, and lived experience, and advocates for the deconstruction of dichotomies, including that of religion and science (Bin Che Nordin, 2024; Greco, 2024).

Integrating religion and science is plausible and necessary from this philosophical standpoint, reflecting a holistic view of knowledge and reality Rediehs, (2022). Emphasizes that postmodernism shifts intellectual inquiry toward pluralistic epistemology, allowing metaphysical and spiritual perspectives to be re-centered in scientific discourse. Similarly,Soleh, (2023) advocates a systematic synthesis model in which science and religion exist in dialogical relation within a shared metaphysical structure, enriching the other toward a unified vision of truth.

This integrative impulse is not a new phenomenon. In the Western tradition, Thomas Aquinas endeavored to reconcile Christian theology with Aristotelian philosophy, demonstrating that faith and reason need not be adversaries. In the Islamic intellectual heritage, figures such as Al-Ghazali and Ibn Rushd demonstrated epistemological openness by combining rational demonstration (*burhān*), textual analysis (*bayān*), and intuitive insight (*'irfān*) in pursuit of knowledge. Golshani (1997), a contemporary Muslim scientist, critiques the myth of scientific neutrality, arguing that metaphysical assumptions mediate all scientific inquiry. From an Islamic standpoint, the foundational principle of *tawhid,* the Oneness of God, serves as a theological doctrine and an ontological and epistemological framework that mandates the unity of all forms of knowledge (Ascarya & Tekdogan, 2021).

Despite the normative calls for integration, many contemporary studies remain fragmented, lacking a comprehensive philosophical framework and ignoring the sociological contexts that shape knowledge production. Much literature treats religion and science as parallel domains or narrows on theological justification without addressing broader implications for education, civil society, and public policy. Furthermore, the persistence of secular-religious dichotomies in educational institutions, particularly in Muslim-majority countries, continues to impede the realization of a truly integrated epistemic paradigm. The historical separation of religious and scientific education, exacerbated by colonial educational models and postcolonial secularization, has left a legacy of dualism that undermines holistic human development.

Considering these considerations, the present study examines the philosophical and sociological foundations of integrating religion and science. Philosophically, this research explores the ontological assumptions about reality, the epistemological pluralism underpinning Islamic knowledge traditions, and the axiological imperative to align scientific inquiry with moral and transcendental values. Sociologically, it investigates the historical and cultural dynamics that have shaped the separation and possible reintegration of religion and science, particularly in the context of Islamic education and modernity. By bridging these two dimensions, the study aims to offer a coherent conceptual framework that affirms integration not merely as an ideal, but as a civilizational necessity in an era marked by ethical crises, epistemic uncertainty, and socio-cultural fragmentation.

Ultimately, this study contributes to the growing body of interdisciplinary scholarship that recognizes integration as a transformative paradigm that moves beyond the binary opposition between revelation and reason and instead embraces a unified, ethically grounded vision of knowledge. In doing so, it hopes to inform future educational models, research agendas, and policy formulations that seek to restore the balance between intellectual rigor and spiritual wisdom in religious and secular contexts.

METHODS

This study employs a qualitative library research design grounded in a philosophical and sociological orientation to explore the epistemological, ontological, and axiological foundations of integrating religion and science. Library research, in this context, transcends mere citation of texts; it involves a rigorous, critical, and thematic interrogation of scholarly works that form the backbone of integrative discourse across disciplines (Doucette, 2022; López-Estrada & Elizondo-Mejías, 2024; Scali, 2024). Data collection was conducted purposively through a systematic review of high-quality literature, including academic books, peer-reviewed journal articles, conference proceedings, and verified digital repositories. The inclusion criteria centered on texts authored by renowned scholars such as Ian G. Barbour, M. Golshani, Al-Ghazali, Ibn Rushd, and Ken Wilber, as well as contemporary publications that address the theoretical convergence between religion and

science, particularly about metaphysical worldview, knowledge pluralism, and scientific ethics (Nicoli, 2024; Phoek et al., 2024) . Literature deemed speculative, ideologically biased, or lacking theoretical rigor was excluded to preserve analytical depth and academic validity.

The analytical process was guided by qualitative content analysis, comprising three primary stages: data reduction, thematic categorization, and interpretive synthesis. In the first stage, key conceptual fragments relevant to the research questions were identified and abstracted. These were then organized thematically, highlighting central issues such as the philosophical architecture of integration (ontology, epistemology, axiology), the legacy of science-religion dichotomies, the influence of postmodern thought in deconstructing positivist epistemology, and the sociological imperatives for integrative educational paradigms in Muslim-majority societies. The third stage involved synthesizing patterns of argumentation, cross-verifying multiple sources, and ensuring internal coherence and theoretical resonance (Arizavi et al., 2023, 2025). This method facilitated the extraction of conceptual clarity from diverse sources and enabled the construction of a coherent theoretical framework that aligns with Islamic epistemology and contemporary global knowledge dynamics.

Philosophically, the research is underpinned by a constructivist and pluralist epistemology, acknowledging that knowledge emerges from the dialectical interplay of reason, revelation, intuition, and sensory experience. Methodologically, the study adheres to ethical scholarship through accurate attribution, avoidance of reductionism, and the cultivation of dialogical understanding between scientific and religious worldviews. Thus, the method ensures that integrating religion and science is not merely a theoretical construct, but a coherent, intellectually rigorous, and socially responsive paradigm supported by sound philosophical inquiry.

RESULTS

Based on the qualitative content analysis, the results are classified into two major dimensions: philosophical and sociological foundations of integrating religion and science. Each is further elaborated into sub-dimensions as presented in Table 1.

Table 1. Philosophical Foundations of the Integration of Religion and Science

No	Dimension	Key Findings	Supporting Sources
1	Ontology	Reality is holistic and unified; science and religion are connected through the concept of *tawhid*.	(Ascarya & Tekdogan, 2021; Golshani, 2017; Heritier, 2023)
2	Epistemology	Knowledge comes from multiple valid sources: sense perception (*bayani*), reason (*burhani*), and intuition (*irfani*).	(Soleh, 2023); Q.S. An-Nahl:78
3	Axiology	Science is not value-free. It must be aligned with moral and divine values for the betterment of humanity (*rahmatan lil 'alamin*).	(Alosaimi et al., 2024; Damper, 2024; Golshani, 2017)
4	Integration Models	Barbour's "Systematic Synthesis", Peacocke's "Bridge" metaphor, and Wilber's postmodern integration framework illustrate dialogical approaches between science and religion.	(Damper, 2024; Feser, 2023)

Table 1 presents the key philosophical dimensions underpinning the integration of religion and science. The first dimension ontology highlights the Islamic view that reality is holistic and interconnected, where the physical and metaphysical are not dichotomous but coexistent and hierarchically ordered. This ontological unity is grounded in the principle of *tawhid*, which affirms that all aspects of existence originate from and point toward the same metaphysical source: Allah SWT (Ascarya & Tekdogan, 2021). In this context, science is not merely a neutral tool for describing the material world, but a sacred act of unveiling the divine signs embedded in creation.

The epistemological foundation, the second dimension, acknowledges a pluralistic knowledge system that includes sense perception (*bayani*), rational thought (*burhani*), and spiritual insight (*irfani*). These epistemologies are not antagonistic; they offer complementary routes to understanding reality (Soleh, 2023). The Qur'anic emphasis on hearing, sight, and the heart (Q.S. An-Nahl:78) reinforces this triadic epistemology, offering an integrative framework that bridges empirical science and spiritual wisdom.

In the axiological dimension, the findings emphasize that moral and spiritual values must guide science. Golshani (2017) They criticize the myth of scientific neutrality, asserting that values and assumptions are inherent in all scientific endeavors. This aligns with critiques from contemporary scholars (Damper, 2024) (Alosaimi et al., 2024) who argue that science must serve the broader goals of ethical living and human well-being (*rahmatan lil 'alamin*) rather than functioning as an amoral tool of exploitation or domination.

Lastly, the integration models proposed by Barbour (1998), Peacocke, and Wilber provide theoretical constructs that support this synthesis. These models conceptualize integration not as homogenization, but as dialogue and mutual enrichment between domains long separated by historical and ideological forces. Wilber's postmodern framework, in particular, supports the Islamic notion of epistemic plurality by validating multiple forms of knowing, each within its methodological legitimacy (Feser, 2023; Zwart, 2022).

These philosophical foundations, while conceptually robust, do not exist in isolation. Their application and relevance must be situated within real-world historical, educational, and social contexts, where the relationship between religion and science has evolved through tension, cooperation, and institutional development. This brings us to the sociological dimension elaborated in Table 2.

Table 2. Sociological Foundations of the Integration of Religion and Science

No	Theme	Key Findings	Supporting Sources
1	Historical Integration	Classical Islamic scholars integrated rationalism and spirituality; Islam's golden age showed harmonious science-religion synergy.	(Farida & Setiawan, 2022)
2	Emergence of Dichotomy	The separation of science and religion emerged due to colonial education systems, stagnation of *ijtihad*, and the rise of positivist modernism.	(Hariono & Chanifuddin, 2021; Haryono & Sunhaji, 2020)
3	Secularization and Westernization	The Western scientific model emphasized empiricism and rationalism, marginalizing spiritual values and influencing Muslim societies through colonial policies.	(George, 2023; Pradoko, 2019).
4	Indonesian Context	The legacy of dual education systems (religious vs secular) has contributed to epistemological fragmentation in Indonesia.	(Azizah & Roqib, 2024)
5	Social Implications	Disconnected worldviews hinder ethical reflection and cross-cultural understanding; integration can mitigate prejudice and foster holistic human development.	c

Table 2 outlines the sociological forces and historical developments that have shaped, disrupted, and now demand the reintegration of religion and science. The first theme, historical integration, reminds us that during Islam's golden age (7th–12th centuries), scholars such as Ibn Sina, Al-Ghazali, and Ibn Rushd demonstrated the compatibility between reason and revelation. Scientific pursuits were considered part of one's religious duty to explore and understand God's creation (Farida & Setiawan, 2022).

However, the second theme, the emergence of dichotomy, shows how this integration deteriorated due to colonial invasions, the decline of *ijtihad*, and the rise of conservative literalism, which discouraged intellectual inquiry. This was further aggravated by the Western scientific revolution, which promoted positivism and secularism, ultimately reinforcing a science-religion divide in Muslim societies (George, 2023; Pradoko, 2019).

The third theme, secularization and Westernization, highlights how modern science, shaped mainly by Enlightenment rationalism, was adopted by colonized Muslim societies without the parallel development of religious knowledge. As a result, religious institutions retreated into dogmatism, while secular institutions reproduced a value-free conception of science. (Hariono & Chanifuddin, 2021; Haryono & Sunhaji, 2020)

The fourth theme in the Indonesian context further illustrates how the colonial dualism of religious and secular education persists in Indonesia. Islamic boarding schools and pesantren focus on theology and jurisprudence, while public schools and universities emphasize STEM and social sciences, often without metaphysical or ethical reflection. Azizah and Roqib (2024) emphasize that such bifurcation has led to fragmented knowledge systems and students unequipped for holistic problem-solving.

Lastly, the fifth theme, social implications, demonstrates that the failure to integrate science and religion has significant consequences beyond the academy. These include loss of moral clarity in technological innovation, social prejudice born of scriptural exclusivism, and the inability of education to produce well-rounded individuals who can navigate modern complexity with ethical resilience (Azizah & Roqib, 2024). These

sociological insights emphasize that integration is not merely a theoretical ambition but a social and historical necessity. Any philosophical model will remain abstract and ineffective without addressing the sociological obstacles to integrating educational systems, colonial legacies, and epistemic prejudice.

DISCUSSION

The findings of this study emphasize both the urgency and the practical possibility of integrating religion and science into a unified framework that is not only conceptual but also educational. This integration is rooted in a comprehensive understanding of the philosophical and sociological dimensions that shape the relationship between these two knowledge domains.

Understanding the Integration of Religion and Science

"Integration" is the opposite of "Separation", an attitude that places each area of life in different boxes (Dodevska, 2023). Integration wants to row between the two reefs: opening meaningful contact between religion and science but not getting caught up in conflict. For religious people, integration has become a Religiously Correct attitude that science and religion should indeed be combined (Klaassen, 2021; Kovalenko et al., 2023). Integrating does not have to mean uniting or even mixing. The identity or character of each of these two areas does not have to be lost but must be maintained. The integration of religion and science is interpreted as combining and adjusting the elements of religion and science, resulting in a combination of two harmonious dimensions. Another definition of integration is the unification or combination of two things so that they become a whole and solid unity.

Philosophical Background of the Integration of Religion and Science

A Western thinker named Ian G. Barbour has a significant role as the founder of the discourse on integrating science and religion. This can be seen from his book "When Science Meets Religion"; he makes integration an ideal solution for meeting science and religion. He believes that nature is proof of God's existence, obtained from scientific awareness. In other words, theology is outside of science, but scientific theory can influence the formulation of certain doctrines. In a systematic synthesis, science and religion contribute to developing inclusive metaphysics. Barbour believes a more systematic integration can occur if science and religion contribute to comprehensive metaphysics. According to him, metaphysics is the search for general concepts in which different aspects of reality can be interpreted. In the sense that the concept of metaphysics is the foundation for the building of the integration of science and religion that can bridge the connection between transcendent and immanent knowledge (Ian G. Barbour, 1998). Moreover, Arthur Peacock, a contemporary Christian theologian, sees that meeting religion and science is like building a bridge. After the bridge is completed, it allows both parties to interact with each other, in line and agreement, and to the maximum, both can unite in an integration format. Arthur wants the presence of God's form in all aspects of life, including science. The dialogue between science and technology with God is a rational, consistent, and creative process that gives birth to novelty, diversity, and complexity. This then shows the existence of God in the characteristics of His creation (Damper, 2024; Mistiani et al., 2024).

Meanwhile, Ken Wilber's thinking establishes the postmodern paradigm as the basis for integration, where each science is given the authority to determine its validation method. In addition, if religion and science want to grow and develop together, they must open themselves up. Because the progress of science is determined by the extent to which a theory can interact with other theories, it can strengthen the scientific structure. Scientific dialectics that occur continuously and sustainably are a process of transcendence towards understanding absolute-transcendental truth (Feser, 2023; Zwart, 2022).

Mehdi Golshani, echoing Einstein's philosophical stance, argues that science is never purely empirical, as it inevitably involves preconceptions, assumptions, and metaphysical elements rooted in the scientist's worldview. Scientific theories, he contends, are not direct outcomes of experiments, since data interpretation is always influenced by internal frameworks of thought, making metaphysics an essential, though often overlooked, foundation of scientific inquiry. Golshani highlights that these metaphysical underpinnings, particularly religious worldviews, shape the construction of knowledge, with the Islamic perspective providing a model where science and religion are integrally linked. In Islam, nature is seen as a sign pointing to the divine, and the pursuit of knowledge is aligned with the sacred mission of understanding God's unity, making science a spiritual and rational endeavor. This factor is crucial because it directly or indirectly provides

conceptual implications for the truth of the science believed in (Heritier, 2023). In Islam, nature is not seen as a separate entity, but as an integral part of Islam's holistic view of God, humanity, and the world, so science and nature are continuous with religion and God. This relationship implies a sacred aspect to Muslims' pursuit of scientific knowledge, because nature itself is seen in the Qur'an as a collection of signs pointing to God (Farida & Setiawan, 2022; Munajib, 2023). Normatively, since the beginning of its revelation, the Qur'an, through surah al-Alaq 1-5, has depicted that the construction of knowledge in Islam is built on the values of monotheism. From the first verses revealed, it is seen that there is a command to "read" which is the process of achieving knowledge with the signs "in the name of God". So that the process of attaining knowledge should be equivalent to the process of ma'rifat to God. In Islam, the power of the cosmos is clear evidence of His Oneness. Therefore, the scientific spirit in seeking the truth is not contrary to religion because it is an inseparable part of the spirit of tawhid. With this scientific spirit, science becomes one of the instruments that can lead someone to the Oneness of Transcendent Reality itself.

On the other hand, awareness of the Oneness of God (tawhid) is the source of the scientific spirit in all areas of Islamic knowledge. Thus, the relationship between religion and science in Islam can be likened to two sides of a coin that are different but cannot be separated. In other words, science in Islam pays close attention to religion and vice versa, because science is a way to understand the unity of cosmic reality proclaimed by religion.

So, basically, Islam and science are one. This means that even without being integrated, both have been integrated from the beginning. If there is a separation between Islam and science, as is the case in the Islamic world, it is due to a misunderstanding of the values of universal Islamic teachings (kafaah).

Golshani mentions three elements of the Islamic outlook on life that particularly influence knowledge and science. These elements include:

- The single nature of God (al-Tauhid). This concept impacts the emergence of a view of the unity of creation and the interconnectedness of various creations on earth. Likewise, with knowledge, all forms of knowledge are a unity that becomes a manifestation of creation or everything on earth. Therefore, scientific research must be synthesized to achieve world harmony.
- Faith in the supernatural and the limitations of human knowledge. This view asserts that reality does not consist only of the physical; there is a reality beyond human senses' reach. Faith in the supernatural reality and human limitations will cause understanding at the sensory, non-sensory, and limitless levels.
- Believe in the purposeful nature of the universe. Allah affirmed (al-Qur'an 38:27) that the creation of the heavens, earth, and everything in between is not for play. In the purposeful nature, it is accompanied by the existence of the end (the world of the afterlife). Where everything will find its destiny, without the presence of the afterlife, all forms of creation will be useless.
- Committed to moral values. Science development must be accompanied by knowledge of ethics. Science without ethical considerations will encounter many problems. Ethics education is critical to foster moral concern and responsibility.

The four categories are, in principle, the values held by the Abrahamic religions, which show the similarity of views between Islam, Christianity, and Judaism (Golshani, 1997) (Alosaimi et al., 2024). Golshani's emphasis is on how the Islamic framework can become an inseparable part of science, so that the science produced can prosper humanity, and the focus of religion is not on direct involvement with the structure of scientific methodology but instead on orienting scientific work to be guided by the Islamic perspective.

From the discussion on the paradigm of scientific integration developed by scientists from both Western and Eastern traditions, including the scientific tradition in Indonesia, we want to place the attitude of openness to science and dialogue as something inseparable between religion and science. This is not just proving the failure of positivism in destroying metaphysics or ending the dichotomy of science, but instead finding the significance of Islamic scientific epistemology and awareness of the importance of scientific reconstruction for advancing civilization. With the increasing development of genetics and biotechnology, the role and responsibility of scientists are becoming increasingly crucial; therefore, the function of religious commitment is the best way to avoid the misuse of science and technology. Metaphysical buildings with religious content can provide orientation to the ethical dimension.

Philosophically, integrating religion and science should ideally be at the ontological, epistemological and axiological levels. This aspect becomes an important barometer for dialogue between science and religion, especially Islam. It can be explained more clearly as follows:

From an anthropological nature, it means the study of the essence of existence, of the essence of being. In Western tradition, this ontological problem gives rise to two groups of thoughts: materialism and idealism. First, materialism states that reality in this world is physical quantities that can be measured mathematically.

Science considers reality empirical, quantifiable, and verifiable. Religion, on the other hand, views reality as metaphysical, intuitive, and speculative.

The second is the idealist group of thought. This group believes that the reality of the universe is not only material but consists of or is closely related to ideas, thoughts, or souls. The world has a different meaning than we see. Therefore, it must be understood and interpreted not by objective-empirical methods as done by materialists but by investigations into the laws of mind and consciousness.

Integrating two perspectives in scientific research means placing concrete and abstract realities in the same realm and time. Ontologically, research objects are divided into religious studies and general science. Spiritual science has a goal in the form of revelation, and general science has a goal in the form of the universe and its contents. Science is designed to prove the truth of religion through science or scientific findings, even though scientific studies can lead humans to their God (Azizah & Roqib, 2024).

Regarding the issue of the relationship between the physical and metaphysical worlds above, Islam states that both are one entity and are hierarchical. In Islam, the view is that the objective reality of the universe is a single cosmic entity consisting of not only various physical realities, but also non-physical realities understood to be interrelated and forming a network of unity through the laws of the cosmos as a manifestation of the singleness of its metaphysical source and origin, namely Allah SWT. In Islam, this cosmic unity is clear evidence of His oneness. Thus, in Islam, there is no purely materialistic or idealistic thinking. Islam also does not distinguish between the two realities dichotomously but rather unites them in a complete, hierarchical unity.

From an epistemological perspective, the integration of religion and science faces significant obstacles. The scientific paradigm, which is positivistic, empirical, and rational, is naturally incompatible with the religious paradigm, which is normative, spiritual, metaphysical, and moral. The paradigms vary, but some groups believe that religious teachings from revelation have a much higher status than human reason and science that comes from reason. This assumption gives religion the power to always control achievements in science and technology. Scientific and technological discoveries that are considered contrary to religious teachings must be prevented from being underestimated and damaging the sacred values of religion that are taken for granted. However, true revelations will undoubtedly be based on empirical facts. Thus, normative and empirical approaches are used to build religious sciences and general sciences. Spiritual science is built more with a normative approach than general science with an empirical approach. On the other hand, at this epistemological level, In the Western perspective, there are three sources of knowledge: 1). Sense perception, namely that our knowledge comes from what we see, hear, smell and taste, which then gave birth to empiricism, a school of thought that believes that our knowledge comes from sensory observations obtained from empirical data. 2) Ratio is the belief in ratio as a source of knowledge, giving birth to rationalism. 3) Intuition, namely, direct knowledge that does not result from conscious thought or sense perception. However, in Western philosophy, this intuition is not entirely accepted as a source of knowledge but is only at the "possible" stage.

In contrast to the West, in Islam, there are three epistemologies recognized according to the level or hierarchy of the object: bayâni (observation/text analysis), burhani (rationalism), and irfan (intuitionism), which each originate from the senses, reason, and heart.

*First, t*he bayani method is a method of thinking that emphasizes the text's authority (*nash*) and is justified by the instinct of concluding *(inference).* We as Muslims will believe that the source of all knowledge is Allah, the God we often call the truth (*al-Haqq*), God as the actual truth is undoubtedly the source of all other truths, including the truth or realities of science, such as Q.S. Al-Baqarah verse 148 "The truth comes from Allah,*then don't you ever doubt it*". Thus, the source of knowledge comes from Allah. As stated by Ibn Khaldun, religious sciences (or naqliyah, such as the Qur'an, Hadith, interpretation, kalam science, tasawwuf) are based on "authority", not reason (Khaldun, 1981). And what is meant by authority is the Qur'an and hadith, which act as interpretations of it. As for the source of general sciences (or aqliyah, such as philosophy/metaphysics,

mathematics, physics, and their parts), the universe stretches beyond us from the vast galaxies to the tiny atoms, including ourselves as humans.

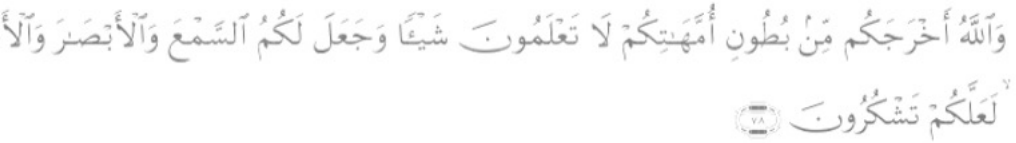
God's statement about viewing both the Qur'an and the universe as signs (verses) of God" hints that both religious sciences and general sciences study the verses of God; only the former studies the *Qur'anic verses*, the latter studies the kauniyah verses. This is where the two types of knowledge find their basis for integration, namely in the verses of Allah in the form of books on the one hand, and the universe on the other.

Second, the irfani method (gnosis) is one form of Islamic epistemology which states that actual knowledge can only be obtained through the illumination of the essence by God to His servants (kasyf) after spiritual practice (riyâdlah), which is carried out based on love. Meanwhile, Irfan is more sourced from intuition or experience (direct experience). This Irfan is direct, not through intermediaries, so it is often called mukasyafah (disclosure) directly by God into the human heart about the secrets of existing realities.

The validity of the truth of irfani epistemology can only be felt and experienced directly (*direct experience*), intuition, or psychognosis (Abdullah, 1995)

Third, the Burhani method is based on natural, social, humanitarian, or religious reality. The science that emerges from the Burhani tradition is called alilm al-husuli, which is conceptualized, arranged, and systematized through logical premises, and then placed through cooperation between abstraction and sensory observation. This method, which is also called the demonstrative method, is seen as a method that is expected to be able to capture the reality of the object being studied accurately."

These three methods are written in the Quran, Surah An-Nahl, verse 78. This has been explained in the Quran, Surah An-Nahl: 78



وَٱللَّهُ أَخۡرَجَكُم مِّنۢ بُطُونِ أُمَّهَٰتِكُمۡ لَا تَعۡلَمُونَ شَيۡـٔٗا وَجَعَلَ لَكُمُ ٱلسَّمۡعَ وَٱلۡأَبۡصَٰرَ وَٱلۡأَفۡـِٔدَةَ

لَعَلَّكُمۡ تَشۡكُرُونَ ٧٨

Translation:

And God brought you out of your mother's womb in a state of ignorance, and he gave you hearing, sight, and heart, so that you may be grateful.

These three methods must be used and must go hand in hand, not separately from each other in responding to the existing reality, so that the reality of truth obtained has a broad and complete perspective, in other words, in this epistemology area, all epistemic tools recognized by Islam must be utilized, hearing, sight, reason and intuition bestowed by Allah, so that the results of the conclusions obtained will penetrate divinity and produce scientific products that do not conflict with His will.

Axiology is related to the purpose of scientific development and its application in oneself and society. In the West, this issue raises two groups of thoughts: first, the group that states that science is value-free, free from good and evil. The task of scientists is only to research, study, and find theories without having to think and be influenced by the fact that the knowledge found will be used for good or evil. Science is value-free or neutral; the values of science are only given by the humans who use it. Inserting values into science, according to secularists, causes science to be "partisan" and thus eliminates its objectivity." The second group states that science is not value-free. So far, intellectuals have been deceived. Secular sciences that claim to be value-free are full of interests. These interests include cultural dominance (such as Orientalism), economic interests (such as the history of the expansion of strong countries in the era of globalization), and military/war interests (such as nuclear science). Science that is born with religious ethics should not be biased or partisan like that. Scientific products must benefit all mankind (rahmatan lil'alamin). In the development of science, it should not only be used in practice, but also to understand the actual existence of nature and humans, as it is known that Allah is the source of all knowledge, because science will lead humans to increased faith. In this axiological area, ethical functions must be applied as a control tool in developing science to stem the negative excesses of science.

Thus, science and technology must provide the most significant possible benefits to human life, not vice versa.This means that science and technology are essential instruments in every development process as an effort to realize the welfare of all human life. General knowledge aims to improve the welfare of life in the world, and religious knowledge aims to improve the welfare of human life in the world and the hereafter.

Therefore, to achieve happiness not only in the world but also happiness in the hereafter, it is necessary to add elements of religious knowledge to general sciences, including mathematics. These two sciences have different appearances; religious knowledge aims to improve human life in the world and the hereafter, and general science seeks to improve human life. To achieve these goals, it is necessary to integrate general sciences with Islamic sciences, so these general sciences are not value-free or secular.

At the application level, Ian G. Barbour in Asyruni Mulatada revealed three approaches to integrating religion and science.

- Natural Theology is a type of integration that maintains religious beliefs or teachings by using scientific discoveries to prove the truth of theology. Nature is used to know the existence of God.
- Theology of Narute is the opposite of natural theology. It starts from religious tradition and historical revelation. Considering current science, this version believes that some traditional religious doctrines contradict scientific findings and must be reformulated.
- Systematic Synthesis is religion and science integrated and elaborated systematically within a comprehensive metaphysical framework. This version provides a framework for further contributions to science and religion, linking scientific and religious worldviews until a thorough and detailed metaphysics is found.

Based on the above description, we can see that the first approach uses scientific data that provides conclusive evidence of religious belief to gain unity and awareness of God's existence. The second approach is to re-examine religious teachings regarding their relevance to scientific theories. In the third approach, religion and science are directly integrated and elaborated in a mutually reinforcing relationship.

Sociological Background of the Integration of Religion and Science

Sociologically, the birth of the integration of religion and science was motivated by the dualism or dichotomy of scientific attitudes between general science and religious science. The dichotomy or separation of science and religion is an issue that is widely discussed during this period. This dichotomy not only occurs in Muslim society but also in the West. Historically, history records that Islamic civilization was once the mecca of world science from the 7th century AD to the 12th century AD. At that time, Islam experienced the supremacy of glory and splendor of civilization, which was marked by the rise of studies on science and philosophy, so Islam became a beacon of the world, both in the East and West. The above phenomenon is realized because science, philosophy, and religion are combined as one totality and integrality of Islam that cannot be separated from each other dichotomously. The position of science and anyone who seeks it religiously is considered high and noble. They conducted exploration and invention of science and philosophy without tending to material issues alone, but because of the spirit of religiosity and motivated by a belief that such activities are an integral part of the manifestation of the application of religion or the commandments of Allah. With the enthusiasm of the atmosphere of science in the Umayyad and Abbasid eras, Muslims practically became a more advanced nation and people, even very advanced compared to other countries in the world at that time, science reached its golden peak marked by the birth of great scientists who succeeded in laying the foundations of modern science which Western scientists are currently developing. Among these Muslim scientists are Ibn Sina (a medical expert), Al-Khawarizmi (an algorithmic mathematician), Jabir bin Hayyan (a chemist), Ibn Khaldun (a historian), and others.

However, around the middle of the 12th century AD, the glory of Muslims in world science began to shift and gradually move away from the Islamic world. This started since the disintegration of the Islamic government, which resulted in the emergence of separate and contradictory political sects, the invasion of the Tartar army from the East and the Crusaders from the West, and Muslim leaders lost their minds and had no confidence in themselves. They thought that their world was experiencing a disaster; they took a very conservative attitude and tried to maintain their identity and most valuable property (Islam) by prohibiting all forms of innovation and expressing fanatical obedience literally to the sharia. At that time, they left the primary source of creativity: ijtihad. After that, the golden age began to decline, stagnate, and even regress until the 21st century AD. After Muslims experienced a decline around the 13th-19th centuries, the West took advantage of this opportunity to develop the knowledge it had learned from Islam to reach the Renaissance. General knowledge (science) developed rapidly while Islamic knowledge declined, eventually leading to a

dichotomy between the two fields of expertise. Not only that, but the secularization of science also emerged. The dichotomy between science and religion was born from the idea of science that began to develop in the Western world in the 16th century AD and continued into the 17th century AD. Westerners claimed that the progress of science achieved over the centuries directly resulted from the separation of religion from practical life, with the separation between church and state. In that century, it was known as the Renaissance, an era of revival of thought that was free from religious dogmas, free from historical trauma due to church domination, and was a transitional era when rationalism and empiricism became prominent schools of thought in science. Meanwhile, the Eastern world (Islam) declined and began to imitate and learn from Europe, which was considered to have experienced rapid progress in science and technology (Azizah & Roqib, 2024).

Al Faruqi stated that dichotomy is a symbol of the fall of Muslims, because every aspect must be able to express the relevance of Islam in the three axes of monotheism. First, the unity of knowledge; second, the unity of life; and third, the unity of history. The dichotomy of science as the cause of the prolonged decline of Muslims has been going on since the 16th century to the 17th century, known as the century of stagnation of Islamic thought. This dichotomy in its continuation hurts the progress of Islam. Based on historical facts, the description above shows a fundamental difference between Islam and the West. In historical records, the glory of Islam occurred when religion and science went hand in hand, but in Western nations, progress was achieved by separating themselves from religious teachings.

In Indonesia, the history of the educational dichotomy began when the Dutch colonized this part of the archipelago. Colonial education was managed by the Dutch government for native children or handed over to Christian missions and zending with financial assistance from the Dutch government. Such education in the early 20th century had spread to several cities, from elementary to higher education levels, consisting of teacher training institutions and vocational schools. Therefore, at this time two models of education were formed, namely: Traditional Islamic education and colonial education on the one hand, there is education that only deepens modern knowledge that is far from Islamic values; on the other hand, there is education that only deepens religious knowledge that is separated from the development of contemporary science. The rapid growth of science and technology on the one hand has led humans to a level of material prosperity, but on the other hand, the paradigm of modern science and technology with its various approaches has dragged humans into aridity and the need for spiritual and moral dimensions. With the entry of Western education, two education systems were born that differentiate between the Islamic education system in terms of madrasahs, and on the other hand, there is a secular education system (Ismail Raji al-Faruqi, 1995). Thus, the trigger for the emergence of the dichotomy between religion and science is the entry of secular Western education into the Islamic world.

In addition, in the current context, sociologically, Indonesian society consists of various ethnicities, cultures, and religions. This diversity often gives rise to multiple conflicts that threaten national integration. Theologically-normatively, no religion or culture justifies aggressive behavior towards others, even emphasizing living in harmony and peace. However, the unity and peace that are desired are threatened by views that constantly feel the most correct (truth claim), which in turn gives rise to social prejudices against other groups. The birth of trust claims or social prejudices that disrupt relations between religious adherents and community groups often begins with religious interpretations that are contextual only so that they are detached from the current context. Scripturalistic religious interpretations usually produce graduates of educational institutions (Madrasah, Schools, PTU/PTAI, and Pesantren/Ma'had) who some people consider unable to resolve societal conflicts. This can happen because educational institutions tend to develop clusters of Islamic subjects or courses that seem separate from the context of the diversity of Indonesian society, the global context, and the development of science and technology. Based on this sociological view, it is necessary to reorganize the structure of science to be more integrative to meet the demands of diversity and the dynamics of society. This paradigm of scientific integration essentially seeks to raise social awareness that the realm of religion, the realm of natural sciences, the realm of social sciences, and the realm of humanities, have their significance, and if each horizon is read in a cohesive and interrelated manner, it will produce a holistic reading that is very useful for civilization. This paradigm implicitly seeks to avoid social narrow-mindedness that feels self-righteous, self-important, blames, belittles, and even denies others (exclusive). Therefore, the dichotomy of science developing in the broader community must be ended immediately, and all parties should strive to integrate religion and science.

Several problems arise from this dichotomy, including:

- There is a very strict dichotomy in the education system. This happened when positivistic secular science was introduced into the Islamic world through Western imperialism, which caused various problems in the education system.
- The gap between the sources of knowledge between religious science and general science. The gap between the two is that supporters of religious science only consider valid divine sources with their books revealed to the Messenger of Allah and prophetic traditions, and reject non-scriptural sources as authoritative sources to explain the existing truth. On the other hand, secular scientists only consider valid information obtained through sensory observation because they believe in empirical knowledge.
- Limitations of Objects of Science. Modern science limits its scope only to sensory matters coupled with a logical process to choose, decide, and provide reasoning, in contrast to Muslim scientists, especially classical scientists, who use not only sensory signs but also spiritual substances. Thus, science can be known not only in the physical realm but also metaphysically, such as God, angels, the grave, and the afterlife, without neglecting the fields of concern of Western scientists, namely the natural sciences (Hariono & Chanifuddin, 2021).

Integration of religion and science (science) needs to be carried out considering:

- Science will significantly impact human welfare if the principles of faith and piety accompany it; conversely, without these principles, science is only a scientific method, but has no meaning for human life.
- Science, the basis of modernism, has given rise to new patterns and lifestyles that are secularistic and hedonistic. If they are not accompanied by values of faith and piety, they will result in fatalistic lives.
- If there is a gap between the two, then life will become crippled and one-sided, going against the wisdom of God, who created humans in unity of body, soul, mind, and body in this world and the hereafter.
- Science will be a strong foundation for achieving worldly happiness. Without science, worldly knowledge will be difficult to create; on the other hand, religion is a guide for science so that science products do not violate religious teachings (Haryono & Sunhaji, 2020).

In addition, from the perspective of Muslims, the integration of religion and science needs to be carried out considering:

- Muslims need a scientific system to fulfill their material and spiritual needs. The current scientific system is unable to fulfill these needs because it contains typical Western values , which are often in conflict with Islamic values.
- Sociologically, Muslims who live in a geographical area and have a culture that is different from the West, where modern science was developed, clearly need a different scientific system, because Western science was created to meet the needs of its society.
- Muslims once had an Islamic civilization in a time when science developed according to the values and needs of Muslims.

Science and religion are two entities that have colored the history of human life. Because both have played an important role in building civilization. So with the birth of religion, not only did humanity have faith, but also another thing that cannot be underestimated is the awakening of ethical, moral, and civilized humans, which becomes a way of life for humans in living life in the world. While science has reached its peak of development, it has also made the world progress with various brilliant discoveries (Abdullah et al., 2022).

CONCLUSION

Responding to the failures of modernism's positivist and pragmatic thinking, postmodernism offers a more holistic worldview by integrating material and immaterial realities, leading to the re-evaluation of the strict dichotomy between religion and science. Rather than viewing them as opposing forces, this perspective sees science, rooted in sensory observation, and religion, grounded in revelation, as complementary paths to truth. The integration is grounded ontologically in a shared reality of the physical and metaphysical,

epistemologically in a synthesis of revelation, intuition, reason, and empiricism, and axiologically in the ethical orientation of science toward human and divine flourishing. In Islam, the unity of the cosmos reflects the Oneness of Allah SWT, making the pursuit of knowledge a sacred endeavor. The balanced collaboration between religion and science is vital for cultivating a just, harmonious civilization that aspires to ultimate happiness in both the worldly and eternal realms.

REFERENCES

Abdullah, A. A., Richardo, R., Rochmadi, T., Wijaya, A., & Nurkhamid, N. (2022). The use of ethnomathematics learning media based on augmented reality for madrasah students. *Al-Ishlah: Jurnal Pendidikan, 14*(1), 877–886. https://doi.org/10.35445/alishlah.v14i1.1140.

Alosaimi, N. R. O., Kadir, F. A. B. A., & Zaidan, A. M. (2024). The concept of values from a Quranic perspective. *Quranica, 16*(2 Suppl. 12), 546–578. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85217013614&partnerID=40&md5=c7db62c01aac1f2915c6f4c816d4728c.

Arizavi, S., Jalilifar, A., & Riazi, A. M. (2023). Analysis of argumentation in the discussion sections of published articles in *ESP Journal*: A diachronic corpus-based approach. *Argumentation, 37*(1), 119–146. https://doi.org/10.1007/s10503-022-09588-0.

Arizavi, S., Jalilifar, A., & Riazi, A. M. (2025). Argument schemes and soundness/strength in published research article discussion sections: A chronological study. *Journal of Argumentation in Context, 14*(1), 61–97. https://doi.org/10.1075/jaic.23004.ari.

Ascarya, A., & Tekdogan, O. F. (2021). Recommended methodology for research in Islamic economics and finance. In *Teaching and research methods for Islamic economics and finance* (pp. 282–302). Taylor & Francis. https://doi.org/10.4324/9781003252764-22.

Azizah, R. L., & Roqib, M. (2024). Landasan filosofi studi integrasi Islam, sains, dan budaya Nusantara. *Innovative: Journal of Social Science, 4*, 998–1011. https://j-innovative.org/index.php/Innovative/article/view/7702

Damper, R. I. (2024). Science and religion in conflict, part 2: Barbour's four models revisited. *Foundations of Science, 29*(3), 703–740. https://doi.org/10.1007/s10699-022-09871-z.

Dodevska, I. (2023). The genealogy of integrationism: Ideational foundations of the politics of immigrant integration. *Frontiers in Political Science, 5*. https://doi.org/10.3389/fpos.2023.1125012.

Doucette, D. (2022). Measuring the impact of conceptual inquiry-based labs. In F. B., J. D., & R. Q. (Eds.), *Physics Education Research Conference Proceedings* (pp. 151–156). American Association of Physics Teachers. https://doi.org/10.1119/perc.2022.pr.Doucette.

Farida, I., & Setiawan, D. (2022). Business strategies and competitive advantage: The role of performance and innovation. *Journal of Open Innovation: Technology, Market, and Complexity, 8*(3). https://doi.org/10.3390/joitmc8030163.

Feser, E. (2023). Truth as a transcendental. In *International Archives of the History of Ideas / Archives Internationales d'Histoire des Idées* (Vol. 242, pp. 185–203). Springer. https://doi.org/10.1007/978-3-031-15026-5_11.

George, K. M. (2023). Evolution of multi-disciplinary philosophies of method: Colonial antecedents and post-colonial paradigm shifts. In *Multidisciplinary knowledge production and research methods in Sub-Saharan Africa: Language, literature and religion* (pp. 201–221). Springer. https://doi.org/10.1007/978-3-031-35531-8_13.

Hariono, T., & Chanifuddin, A. (2021). Monitoring automation system design hydroponics based on chatbot. *Newton: Networking and Information Technology, 1*(2), 88–93. https://doi.org/10.32764/newton.v1i2.1616.

Haryono, H., & Sunhaji, S. (2020). Peran orang tua untuk meningkatkan motivasi belajar anak dalam pembelajaran jarak jauh (PJJ) di musim pandemi Covid-19. *Jurnal Kependidikan, 8*(2), 207–223. https://doi.org/10.24090/jk.v8i2.4711.

Heritier, P. (2023). True God and true man: Some implications. *Phenomenology and Mind, 2023*(24), 76–90. https://doi.org/10.17454/pam-2406.

Klaassen, R. G. (2021). Pedagogies of integration in challenge-based or interdisciplinary education. In H. Hüseyin-Ü., J. H.-M., M. A., & S. A. (Eds.), *Proceedings - SEFI 49th Annual Conference: Blended learning in engineering education: Challenging, enlightening – and lasting?* (pp. 287–296). SEFI. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85122943677&partnerID=40&md5=f95df174c3c88eeed0c51bb825fd35fb.

Kovalenko, O., Koeberlein-Kerler, J., Briukhanova, N., Korolova, N., Bozhko, N., & Lytvyn, O. (2023). Preparation of students of engineering and pedagogical specialties for the development and implementation of interdisciplinary didactic projects using IT-technologies. In A. M. E., P. W., & R. T. (Eds.), *Lecture Notes in Networks and Systems* (Vol. 634, pp. 301–309). Springer. https://doi.org/10.1007/978-3-031-26190-9_31.

López-Estrada, P., & Elizondo-Mejías, J. (2024). Exploring beyond conventional boundaries: Body mapping as a data collection technique in qualitative research. *New Trends in Qualitative Research, 20*(2). https://doi.org/10.36367/ntqr.20.2.2024.e1010.

Mistiani, W., Istiyono, E., Syamsudin, A., & Ghazali, N. H. (2024). Developing a Pancasila students' character instrument: Proof of construct validity and estimation of construct reliability. *Research and Evaluation in Education, 10*(2), 186–198.

Munajib, A. (2023). Environmental education values in the perspective of the Quran: A study of Maudui interpretation. In F. A., F. D. Y., & K. E. (Eds.), *AIP Conference Proceedings* (Vol. 2805, Issue 1). American Institute of Physics. https://doi.org/10.1063/5.0149567.

Nicoli, B. (2024). Expanded view of ultimate questions in public science communication: Qualitative discourse analysis of genetics and neuroscience. *Journal for the Scientific Study of Religion, 63*(2), 468–492. https://doi.org/10.1111/jssr.12904.

Phoek, I., Bhaumik, A., Isaac, O., & Tjilen, A. (2024). How village funds influence economic development in South Papua, Indonesia. *Problems and Perspectives in Management, 22*(1), 310–323. https://doi.org/10.21511/ppm.22(1).2024.26

Pradoko, S. (2019). Positive paradigm as a barrier to art creativity interpretation. *Harmonia: Journal of Arts Research and Education, 19*(2), 133–140. https://doi.org/10.15294/harmonia.v19i2.20667.

Rediehs, L. (2022). The Quaker experiential integration of science and religion. *Theology and Science, 20*(2), 138–155. https://doi.org/10.1080/14746700.2022.2051247.

Scali, G. (2024). Qualitative study on public perception of the library: The Public Library of Empoli case. *AIB Studi, 64*(2), 221–230. https://doi.org/10.2426/aibstudi-14025.

Soleh, A. K. (2023). Quantum integration model for religion and science. *Afkar, 25*(2), 257–290. https://doi.org/10.22452/afkar.vol25no2.8.

Zwart, H. (2022). Dialectics of technoscience. In *Philosophy of Engineering and Technology* (Vol. 38, pp. 17–65). Springer. https://doi.org/10.1007/978-3-030-84570-4_2.