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Islam And Science: The Legacy Of Muslim Scientists

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Abstract

The study of the relationship between Islam and science is an important topic in understanding the role of Islamic civilization in the advancement of world science. In the Islamic perspective, science is a fundamental part of human life, used not only to understand empirical phenomena but also as a means of drawing closer to Allah SWT. This study aims to analyze the concept of science from an Islamic perspective, examine the development of science during the Islamic Golden Age, examine the contributions of Muslim scientists such as Ibn Sina, Al-Khwarizmi, and Al-Farabi, and identify the relevance of their intellectual heritage in the present context. This study uses a qualitative method with a library research approach. A historical approach is used to trace the development of science in the history of Islamic civilization, while a philosophical approach is used to understand the nature of science in Islamic teachings. Data collection was conducted through documentary studies from various relevant literature sources, then analyzed using descriptive analytical methods and content analysis. The results show that Islam views science and religion as two interrelated and inseparable elements. Science is positioned as a means of intellectual development as well as spiritual guidance. During the Islamic Golden Age, the scientific tradition developed significantly through the support of educational institutions, a culture of research, and a blend of revelation and reason. The contributions of Muslim scientists in medicine, mathematics, and philosophy had a significant impact on the development of global science, even becoming one of the foundations of scientific progress in Europe during the Renaissance. Furthermore, the intellectual legacy of Muslim scientists remains relevant in facing modern challenges, particularly in developing a scientific paradigm that integrates rationality, ethics, and spirituality. Therefore, efforts to revive the Islamic scientific tradition are a crucial step in realizing a civilization that is advanced, just, and oriented towards the welfare of humanity.

Keywords: Islam, Science, Scientific Heritage, Muslim Scientists, Contemporary Scientists

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INTRODUCTION

Islam is a religion with a comprehensive scope of teachings, which not only regulates the spiritual and worship dimensions but also places great emphasis on the development of science as part of the development of human civilization. In the Islamic perspective, knowledge serves not only as a means of understanding reality but also as a path to drawing closer to Allah SWT. This is evident since the first revelation to the Prophet Muhammad in Surah Al-'Alaq, which begins with the command to read (iqra'), emphasizing the importance of literacy, study, and the pursuit of knowledge as the

primary foundation of human life. Thus, the activity of seeking knowledge in Islam is not only intellectual but also has a spiritual dimension closely linked to faith.

Throughout the history of world civilization, Muslims have achieved a golden age in the field of science, particularly during the Islamic Golden Age. During this period, the scientific tradition flourished, with the emergence of Muslim scientists who made significant contributions to various disciplines. Figures such as Ibn Sina in medicine, Al-Khwarizmi as a pioneer of algebra, and Al-Farabi in philosophy are evidence that Islamic civilization possessed a strong, rational, and open intellectual tradition to the development of science.

The contributions of Muslim scientists were not only felt within the Islamic world but also had a significant influence on the development of global science. Many of their works were translated into Latin and became primary references in the development of science in Europe, particularly during the Renaissance. This demonstrates the strategic role of Islamic civilization in building the foundations of modern scientific knowledge.
However, compared to this golden age, the state of Muslim science in the contemporary era shows a downward trend. Contributions in research, scientific publications, and technological innovation remain relatively low compared to developed countries. This situation indicates a gap between the legacy of Islamic science in the past and contemporary realities.

On the other hand, various studies indicate that discussions regarding the legacy of Muslim scientists still tend to be historical and have not been closely linked to the needs and challenges of today's science. Furthermore, the concept of integration between science and Islamic values remains dominant at the normative level and has not been widely implemented in practice in education. This indicates a research gap that requires further study.

Based on this description, the study "Islam and Science: The Legacy of Muslim Scientists" is highly relevant. This study aims to re-examine the relationship between Islamic teachings and the development of science, while also uncovering the significant contributions of Muslim scientists to world civilization and linking them to current scientific challenges.

METHOD

This research uses a qualitative approach, one based on a deep contextual understanding of phenomena through the interpretation of meaning and analysis of various related concepts. The type of research employed is library research, which utilizes written sources as the primary data in the assessment process.

The approaches applied in this research include historical and philosophical approaches. The historical approach is used to trace and understand the development of science in Islamic civilization chronologically. Meanwhile, the philosophical approach is used to in-depth examine the concept of science from an Islamic perspective, including its foundations of values and thought.

Data collection techniques were carried out through documentation, namely by collecting, reading, and analyzing various literature relevant to the research topic. Furthermore, the obtained data were analyzed using descriptive-analytical techniques, utilizing content analysis to identify, categorize, and interpret the meaning contained within the data.

RESULT AND DISCUSSION

The Concept of Knowledge from an Islamic Perspective

From the perspective of Islamic teachings, knowledge holds a very essential position and cannot be separated from aspects of faith. Islam views knowledge as the primary instrument for understanding truth, whether derived from revelation or

empirical reality. Since the first revelation to the Prophet Muhammad in Surah Al-'Alaq, which begins with the command to read (iqra'), Islam has emphasized the importance of intellectual activities such as reading, thinking, and studying as part of worship. The meaning of this command is not limited to the ability to read texts, but also encompasses efforts to understand natural and social phenomena as a reflection of the greatness of Allah SWT.

From the Islamic perspective, knowledge is not merely understood as rational or empirical knowledge, but also as an effort to deepen divine knowledge and increase faith. Knowledge serves as a link between humans and the Creator through understanding the qauliyah (revelation) and kauniyah (natural phenomena) verses. Therefore, Islam does not strictly distinguish between religious knowledge and general knowledge, but rather views both as a complementary whole, building a civilization that balances the spiritual and intellectual dimensions.

This view of the unity of knowledge is the foundation for the development of intellectual traditions in Islamic civilization. The pursuit of knowledge is seen as a form of devotion to God, thus encouraging Muslims to continuously develop their thinking and engage in scientific exploration. This is reflected in history, where Muslim scientists not only studied religious knowledge but also mastered various rational and empirical disciplines such as medicine, mathematics, and philosophy. This situation demonstrates that Islam provides ample space for the development of knowledge oriented towards the benefit of humanity.

In the contemporary context, the concept of knowledge in Islam also emphasizes the importance of integrating knowledge with ethical values. Knowledge should not develop freely without direction, but should be directed towards achieving humanitarian goals and justice. This becomes increasingly relevant amidst the development of modern science, which (Fadillah, et.al 2026).in some cases tends to be detached from moral values. Therefore, reinforcing the concept of knowledge from an Islamic perspective is crucial as an effort to build a scientific paradigm that is not only technologically advanced but also grounded in spiritual and ethical values.

Thus, the concept of knowledge in Islam is oriented not only toward mastery of knowledge but also toward fostering individuals with faith, insight, and noble character. This concept serves as a crucial foundation for reviving the Islamic scientific tradition that is integrative and relevant to current developments.

The Development of Science during the Islamic Golden Age

The Islamic Golden Age was a crucial stage in the history of the development of world science. From approximately the 8th to 14th centuries CE, Islamic civilization emerged as a global intellectual center, successfully combining revelation and reason in the development of science. Muslims at that time not only maintained religious traditions but also actively developed various disciplines through rational and empirical approaches. This synergy between spiritual and intellectual aspects gave birth to a holistic scientific paradigm, where knowledge was viewed as a means of understanding reality and drawing closer to God.

The advancement of science during this period was inseparable from the role of educational institutions and rapidly developing centers of scientific study. One of the most influential was the Bayt al-Hikmah in Baghdad, which served as a center for the translation, research, and development of knowledge from various civilizations, including Greece, Persia, and India. Through an intensive translation movement, Muslims not only adopted foreign knowledge but also refined and developed it, resulting in various innovations in the scientific field.

The scientific tradition during this period also demonstrated a character that was not merely theoretical, but also placed a strong emphasis on empirical aspects. Muslim

scientists developed scientific methods through observation, experimentation, and systematic logical reasoning. This reflects that Islam encourages an open, critical, and objective scientific attitude in understanding natural phenomena (Fajri, et.al 2026). The application of these methods is evident in the works of scientists such as Ibn Sina in medicine, who emphasized clinical observation, and Al-Khwarizmi in mathematics, who developed a systematic approach to algebra.

Furthermore, the development of science during the Islamic Golden Age was also supported by an intellectual culture that upheld freedom of thought and scientific dialogue. Scientists not only studied religious sciences but also actively developed various other disciplines such as philosophy, astronomy, and chemistry. This demonstrates that Islamic civilization possessed an inclusive scientific character and was open to various sources of knowledge. In the contemporary context, studying the Islamic Golden Age is crucial as a source of inspiration for rebuilding an integrative scientific tradition. Various studies have shown that the success of Islamic civilization in the past was underpinned by its ability to harmonize spiritual values and scientific rationality. Therefore, efforts to revive the Islamic scientific tradition in the modern era must adhere to these principles to meet the challenges of current scientific and technological developments.

Contribution of Muslim Scientists in Various Disciplines

a. Ibn Sina in the Field of Medicine

Ibn Sina is one of the most influential scientists in the history of world medicine. This figure is not only known as a doctor, but also as a philosopher, scientist and very productive writer. His contributions spanned various scientific fields, but his greatest influence was seen in the world of medicine. His monumental work, Al-Qanun fi al-Tibb (The Canon of Medicine), became the main reference in medical practice for centuries, both in the Islamic world and in Europe until around the 17th century. This work contains disease classification, diagnostic techniques, and therapeutic principles which are arranged systematically and based on a scientific approach.

Ibn Sina was born in 980 AD in Afshana, a region near Bukhara (now including Uzbekistan). Since childhood, he has shown extraordinary intelligence. At the age of around ten, he had memorized the Koran, and as a teenager he had mastered various branches of science such as logic, philosophy, mathematics and medicine. His outstanding abilities made him widely known as a reliable young healer. In fact, at the age of around 18, he managed to heal a local ruler, who then gave him access to the royal library—an important opportunity that enriched his intellectual horizons.

In his medical practice, Ibnu Sina emphasized the importance of a scientific approach which includes clinical observation, experimentation, and systematic analysis of disease symptoms. He was a pioneer in developing scientific methods in the medical field by integrating theory and practice in a balanced manner. Apart from that, he also provides explanations about infectious diseases, the importance of maintaining cleanliness, and the use of medicines that have been tested through empirical experience. This approach shows that the medical tradition in Islamic civilization had developed rationally and based on research long before the emergence of the modern medical system.

Ibn Sina's life journey also reflects his high dedication to science. In the midst of political dynamics and frequent changes of location, he remains active in writing and teaching. It is recorded that he produced more than 276 works in various scientific disciplines, among Ibn Sina's works are the book Al-Qanun Fith Thip (Canon of Medicine), the Book of Arjunah Ibn Sina Ath-thibbiyah, Maussu'ah. His scientific enthusiasm shows that in Islam, the search for knowledge is not only of intellectual value, but is also part of spiritual devotion to Allah.

Ibn Sina's influence was not limited to the Islamic world, but also extended to the West. His works were translated into Latin and used as teaching materials in European

universities for centuries. This confirms that the contribution of Muslim scientists has a strategic role in shaping the foundations of modern science.

Thus, Ibn Sina is not only a symbol of the glory of medical science in Islamic civilization, but also clear evidence that the integration of reason, science and spiritual values is capable of giving birth to innovations that provide broad benefits for humanity.

b. Al-Khwarizmi and his Contributions to Mathematics

Al-Khwarizmi is known as one of the important figures in the history of the development of mathematics, especially as a pioneer of algebra. His contribution was not only significant to Islamic civilization, but also became the basis for the development of modern mathematics globally. His main work, Al-Kitab al-Mukhtasar fi Hisab al-Jabr wa al-Muqabalah, was the initial milestone in the birth of algebra as an independent scientific discipline. The term "algebra" itself comes from the word al-jabr in the title of the work, which refers to a systematic method of solving equations.

From a conceptual perspective, Al-Khwarizmi succeeded in changing mathematics from just a practical calculation tool into a science that has a clear logical and methodological structure. He formulated a way to solve linear and quadratic equations through orderly and systematic stages. In contrast to the modern symbolic approach, he uses rhetorical methods in explaining the steps for solving problems. This approach shows that mathematics in Islamic civilization has developed rationally, systematically and applicatively, especially to meet practical needs such as trade, division of inheritance and measurement.

Apart from that, another important contribution lies in the development of number systems. Al-Khwarizmi played a role in spreading the use of the Hindu-Arabic numeral system, including the concept of zero, which later became the foundation of the modern numerical system. From his name also emerged the term "algorithm", which refers to a step-by-step procedure in solving mathematical problems. This concept later developed into a major basis in computer science and digital technology today

Integration of Science and Religion in the Tradition of Muslim Scholars

In the Islamic scientific tradition, science and religion are not viewed as separate entities, but as a complementary whole. Classical Muslim scholars believed that all knowledge originates from Allah SWT, whether obtained through revelation (the verses of qauliyah) or through observation of natural phenomena (the verses of kauniyah). Therefore, scientific activity is not merely an intellectual activity, but also a form of worship and spiritual devotion aimed at benefiting humanity.

This integrative concept is reflected in the thoughts and works of figures such as Ibn Sina, Al-Khwarizmi, and Al-Farabi. They not only developed science rationally and empirically but also linked it to ethical dimensions and spiritual goals. Ibn Sina, for example, emphasized the importance of accurate clinical observation while upholding ethics in medical practice (Suwarno, & Setiyatna,2026). Meanwhile, Al-Khwarizmi developed mathematics with practical applications to meet social needs, such as in trade and inheritance. Al-Farabi formulated a concept of science aimed at establishing a civilized and moral society. This demonstrates that the development of science in Islamic civilization took place holistically, encompassing intellectual, practical, and ethical aspects.

Furthermore, this integrative approach is a key characteristic of Islamic civilization, where scientific advancement goes hand in hand with the strengthening of spiritual values. Science is not considered value-free but must be directed towards broader humanitarian goals, such as justice, prosperity, and happiness. Thus, science serves not only to understand reality but also as a means to recognize the greatness of God and build a civilization that...

When compared with the modern paradigm, there is a tendency to separate science and religion, which often leads to scientific development without a strong moral foundation. This condition has the potential to give rise to various problems, such as the misuse of technology and a crisis of values in society. In this context, the integrative approach developed by Muslim scholars is relevant to reexamine as an alternative in building a scientific paradigm that balances rationality and spirituality.

Furthermore, the integration of science and religion also has important implications for education. An education system that adopts this approach emphasizes not only the mastery of knowledge but also the development of character and moral values in students. Thus, education is expected to produce individuals who are not only intellectually intelligent but also possess social and spiritual responsibility in implementing their knowledge. This approach aligns with the concept of Islamic education, which emphasizes a balance between cognitive, affective, and spiritual aspects.

Analystically, the integration of science and religion in the Muslim scholarly tradition demonstrates that the progress of civilization is not solely determined by the development of science, but also by the values that underlie it. Therefore, efforts to revive this integrative paradigm are crucial in facing increasingly complex global challenges, ensuring that science contributes not only to technological progress but also to the creation of a more just, meaningful, and sustainable life.

Factors Causing the Dichotomy Between Science and Religion in the Development of Islamic Civilization

The dichotomy between science and religion is a crucial issue in the development of modern Islamic education and civilization. The term "dichotomy of science" refers to the separation between religious and general knowledge, causing the two to develop separately, both within the educational system, academic orientation, and social practices. However, in the classical Islamic intellectual tradition, all forms of knowledge are understood to originate from Allah SWT and are directed towards the benefit of humanity (Sappe, 2020). Therefore, in the early development of Islam, there was no clear separation between religious and general knowledge, as both were seen as complementary in building civilization. However, over the course of history, a paradigm shift occurred, giving rise to a dualism of knowledge, with religious knowledge being more focused on normative and ritualistic aspects, while general knowledge developed within a rational, empirical, and secular framework.

One of the dominant factors behind the emergence of the dichotomy between science and religion was the influence of Western colonialism on the Islamic world. Colonialism not only brought political and economic domination but also introduced a modern Western educational system based on secularism and positivism. This educational system separated religion from science and social life, thus viewing science as neutral and value-free. Consequently, Islamic educational institutions experienced a dualistic educational system, with religious education taught in madrasas or Islamic boarding schools, while modern science and technology were developed in public schools that adopted Western paradigms. This situation led to the fragmentation of knowledge and the weakening of the integration of the spiritual, moral, and intellectual dimensions within Islamic education.

In addition to the influence of colonialism, the decline of the Islamic intellectual tradition was also a significant factor in the development of this scientific dichotomy. During the golden age of Islamic civilization, Muslim scholars such as Ibn Sina, Al-Farabi, and Al-Ghazali successfully integrated religious knowledge, philosophy, medicine, astronomy, mathematics, and various other disciplines within a unified Islamic epistemological framework. However, the weakening of the Islamic scientific tradition due to political conflict, social disintegration, and intellectual stagnation led to the decline of

scientific development in the Islamic world. Under these conditions, some Muslims began to view religious knowledge and general knowledge as two distinct entities lacking a strong epistemological connection.

Another factor reinforcing the dichotomy of knowledge was the development of an overly textual and normative paradigm in Islamic education. In practice, religious education often places greater emphasis on the study of Islamic jurisprudence (fiqh), monotheism (tawhid), and religious rituals, while discussions of science, technology, and social sciences have not received proportional attention. This overly normative approach has rendered Islamic education incapable of responding contextually to scientific developments and the challenges of modern society. On the other hand, general education, developed through the modern paradigm, tends to emphasize rationality and pragmatism, but often neglects the dimensions of ethics, spirituality, and morality. As a result, the education system creates an imbalance between intellectual intelligence and character development.

The development of positivist philosophy and modern secularism also contributed to the emergence of a dualism between science and religion. The positivistic paradigm positions empirical rationality as the sole source of scientifically valid knowledge. Consequently, the metaphysical, divine, intuitive, and spiritual dimensions are marginalized from the development of modern science. In this context, religion is positioned as a private matter separate from the public sphere and the development of science. Contemporary research shows that the dominance of the secular paradigm in modern education contributes to the emergence of a moral crisis, ethical degradation, and a weakening of the humanitarian orientation in the development of science (Khamdani et al., 2025).

Furthermore, the weak integration of the curriculum in Islamic educational institutions is also a contributing factor to the dichotomy of knowledge. Many educational institutions still structurally separate religious and general subjects without establishing an integrative epistemological relationship between the two. This condition causes students to perceive religious and general knowledge as two separate fields. However, from an Islamic perspective, all knowledge is interconnected because they all aim to understand the verses of God, both those of a qauliyah and kauniyah nature.

According to Imam Suprayogo, the dichotomy of knowledge arises from a misunderstanding of the essence of science itself. He emphasized that all knowledge fundamentally originates from Allah SWT, so there should be no separation between religious and general knowledge (Arif, 2023). Through the concept of the "tree of knowledge" (syajarat al-'ilm), Imam Suprayogo illustrates that all branches of knowledge must be rooted in the values of monotheism and spirituality. Thus, knowledge is directed not only at technological mastery and intellectual development, but also at the formation of human morals, moral awareness, and social responsibility.

Meanwhile, M. Amin Abdullah explained that the dichotomy of knowledge is caused by the development of a sectoral and exclusive scientific mindset. According to him, religious knowledge, social sciences, humanities, and modern science must interact through an integration-interconnection paradigm. Multidisciplinary, interdisciplinary, and transdisciplinary approaches are necessary for science to provide more comprehensive and humane solutions to the various problems of modern society. Recent studies show that the integration-interconnection paradigm plays a significant role in developing moderate, inclusive, and adaptive Islamic education (Fauzan & Karim, 2024).

In the context of modern society, the dichotomy between science and religion is further reinforced by the development of digital technology and a global culture of pragmatism. Technological advancements are often oriented toward economic interests, industrialization, and material efficiency, without considering moral and humanitarian aspects. Consequently, various problems arise, such as the misuse of technology, a digital

ethics crisis, individualism, and dehumanization. This phenomenon demonstrates that the development of science without the integration of religious values has the potential to create moral and social inequality in modern society.

Analytically, the factors causing the dichotomy between science and religion stem not only from external influences such as colonialism and Western secularism, but also from internal factors such as the stagnation of Islamic thought, the weakening of intellectual traditions, and a fragmented education system. Therefore, a reconstruction of the Islamic education paradigm through the integration of science and spiritual values is necessary to create an education system that is holistic, humanistic, and relevant to contemporary societal developments. In this context, the idea of integrating knowledge developed by Imam Suprayogo and M. Amin Abdullah is important as an alternative paradigm for Islamic education that is able to combine rational, empirical, moral and spiritual dimensions in a balanced manner.

The Relevance of the Legacy of Muslim Scientists in the Contemporary Era

The intellectual legacy of Muslim scientists remains strategically positioned in addressing various global challenges in the contemporary era. Amidst the accelerating development of science and technology—from artificial intelligence to biotechnology there is an urgent need to balance these advances with ethical and spiritual values. In this regard, the thoughts of figures such as Ibn Sina, Al-Khwarizmi, and Al-Farabi provide a crucial foundation for the development of a scientific paradigm that is not only rational and empirical, but also oriented toward humanitarian values and morality.

Historically, Muslim scientists developed science within an integrative framework that connects reason, revelation, and ethics. This approach resulted in a holistic scientific tradition, where science is not viewed as neutral but as a means to achieve the benefit of humanity. In the modern context, this approach is highly relevant in responding to various global crises, such as environmental degradation, social inequality, and the misuse of technology, which are often rooted in the separation between science and moral values.

Furthermore, the legacy of Muslim scientists also has important implications for education. Contemporary education systems are required to produce graduates not only academically competent but also possess moral integrity and social responsibility. The concept of integrating knowledge and values developed by Muslim scientists can serve as inspiration for designing a holistic curriculum that combines scientific mastery with character development. This aligns with UNESCO's global agenda, which emphasizes the importance of education oriented toward sustainable development and humanitarian values.

However, reality shows that the contribution of Muslims to science and technology today remains relatively limited compared to the golden age of Islamic civilization. This is due to various factors, such as a weak research culture, lack of institutional support, and the suboptimal integration of knowledge and Islamic values within the education system. This situation indicates a gap between the intellectual heritage of the past and current scientific practices.

Therefore, serious efforts are needed to revitalize the Islamic scientific tradition by utilizing the legacy of Muslim scientists as a foundation for the development of modern science. This revitalization can be achieved through strengthening a culture of literacy and research, developing education based on the integration of knowledge and values, and increasing scientific collaboration at the global level. Thus, science not only advances technologically but is also capable of making a real contribution to social welfare and justice.

Analytically, the relevance of the legacy of Muslim scientists in the contemporary era lies in their ability to offer a scientific paradigm that balances rationality, ethics, and spirituality. This paradigm is crucial in facing the complexity of today's global challenges,

making science not only a tool for progress but also a means to build a more humane, just, and sustainable civilization.

The research findings establish that the concept of knowledge in Islam is fundamentally holistic, viewing science and faith as inseparable dimensions of human civilization. This epistemological framework, rooted in the divine command of *iqra'* (read) in Surah Al-'Alaq, positions knowledge acquisition as both an intellectual pursuit and a spiritual act of worship. The study reveals that classical Muslim scholars operated within a unified paradigm where religious knowledge (*qauliyah*) and empirical knowledge (*kauniyah*) were seen as complementary pathways to understanding divine truth. This finding directly supports the preceding discussion on the integration of science and religion, confirming that the dichotomy between these domains is a modern construct rather than an inherent feature of Islamic intellectual tradition. The research demonstrates that figures like Ibn Sina and Al-Khwarizmi exemplified this integrative approach, developing scientific methodologies while maintaining strong ethical and spiritual orientations. This epistemological foundation provides crucial context for understanding why Islamic civilization achieved such remarkable scientific advancements during its golden age, as the pursuit of knowledge was driven by both intellectual curiosity and religious devotion.

The findings provide compelling evidence that the Islamic Golden Age (8th-14th centuries CE) represented a period of unprecedented scientific flourishing, characterized by sophisticated institutions like Bayt al-Hikmah and a robust culture of translation, research, and innovation. The research documents how Muslim scientists not only preserved and transmitted knowledge from Greek, Persian, and Indian civilizations but also significantly advanced various disciplines through empirical observation and systematic methodology. Ibn Sina's *Al-Qanun fi al-Tibb* exemplifies this scientific rigor, establishing clinical observation and experimentation as foundations of medical practice centuries before the European Renaissance. Similarly, Al-Khwarizmi's development of algebra and the algorithmic method demonstrates how Islamic science transformed mathematics from practical calculation into a structured logical discipline. These contributions align with the preceding analysis of scientific development during the golden age, confirming that Muslim scientists operated within an intellectual culture that valued freedom of thought, scientific dialogue, and the practical application of knowledge for societal benefit. The research validates that these achievements were not isolated phenomena but rather products of a civilization that successfully harmonized spiritual values with scientific rationality.

A critical finding of this research is the identification of multiple factors contributing to the contemporary dichotomy between science and religion in Islamic civilization, a condition that fundamentally differs from the integrated approach of classical scholarship. The study reveals that Western colonialism played a pivotal role in introducing secular educational paradigms that separated religious and general knowledge, creating a dualistic system where Islamic education became increasingly normative and textual while modern science developed within a secular, positivist framework. This fragmentation was further exacerbated by the decline of Islamic intellectual traditions due to political conflicts, social disintegration, and intellectual stagnation, which weakened the epistemological connections between various fields of knowledge. The research confirms Imam Suprayogo's critique that the dichotomy stems from a fundamental misunderstanding of knowledge's essence, while M. Amin Abdullah's integration-interconnection paradigm offers a viable solution through multidisciplinary approaches. These findings substantiate the earlier discussion on dichotomy factors, demonstrating that the separation of science and religion is not an inevitable condition but

a historical development that can be addressed through deliberate educational and intellectual reconstruction.

The research conclusively demonstrates that the legacy of Muslim scientists holds profound relevance for addressing contemporary global challenges, from technological ethics to environmental sustainability. The integrative paradigm developed by classical scholars offers an alternative to the modern tendency toward value-neutral science, providing a framework where scientific advancement is balanced with moral responsibility and humanitarian orientation. The findings indicate a significant gap between the rich intellectual heritage of Islamic civilization and current Muslim contributions to global science, highlighting the urgent need for revitalization through strengthened research culture, institutional support, and educational reform. The research validates that the integration-interconnection approach advocated by contemporary thinkers can serve as a foundation for designing holistic education systems that develop both intellectual competence and moral character. This aligns with UNESCO's sustainable development agenda and addresses the moral crises emerging from technology misuse and value erosion in modern society. The study concludes that revitalizing the Islamic scientific tradition requires not merely historical appreciation but active reconstruction of educational paradigms, research methodologies, and global scientific collaboration, ensuring that science serves not only technological progress but also justice, meaning, and sustainable human civilization.

CONCLUSION

Islam views knowledge as an essential part of life, used not only to understand reality but also as a means of drawing closer to Allah SWT. The concept of knowledge in Islam is comprehensive, combining rational, spiritual, and moral aspects in building a civilization based on human and divine values. During the Islamic Golden Age, the development of knowledge experienced rapid progress through a culture of literacy, research, and support for educational institutions. Many Muslim scientists emerged during this period, such as Ibn Sina in medicine, Al-Khwarizmi in mathematics, and Al-Farabi in philosophy. Their thinking had a significant influence on the development of global science, including in Europe during the Renaissance. To this day, the intellectual legacy of Muslim scientists remains relevant in facing modern challenges. Therefore, strengthening the Islamic scientific tradition through research, education, and the integration of knowledge and ethical values is crucial for building a civilization that is advanced, just, and beneficial to humanity.

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