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Scientific Literacy as a Catalyst for Bridging Islamic Beliefs and Scientific Rationality

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Abstrak:

Artikel ini mengeksplorasi peran literasi ilmiah sebagai katalis dalam menjembatani keyakinan Islam dan rasionalitas ilmiah. Literasi ilmiah memungkinkan individu untuk memahami dan mengintegrasikan konsep-konsep ilmiah dengan ajaran Islam, mengurangi konflik antara sains dan agama. Dengan mengembangkan keterampilan berpikir kritis dan analitis, literasi ilmiah memperkuat keyakinan agama melalui interpretasi rasional. Studi kasus dari sejarah ilmuwan Muslim menunjukkan bahwa harmoni antara sains dan keyakinan agama dapat dicapai. Pendidikan terpadu yang memadukan kurikulum ilmiah dan agama dianjurkan untuk membentuk generasi yang seimbang, kritis, dan siap berkontribusi bagi masyarakat. Artikel ini menekankan pentingnya literasi ilmiah untuk menghadapi tantangan global dan mendorong partisipasi komunitas Muslim dalam diskusi dan inovasi global, menciptakan keseimbangan antara iman dan sains.

Kata Kunci: Rasionalitas, Literasi Ilmiah, Keyakinan Islam

Abstract:

This article explores the role of scientific literacy as a catalyst in bridging Islamic belief and scientific rationality. Scientific literacy enables individuals to understand and integrate scientific concepts with Islamic teachings, reducing conflicts between science and religion. By developing critical and analytical thinking skills, scientific literacy reinforces religious belief through rational interpretation. Case studies from the history of Muslim scientists show that harmony between science and religious belief can be achieved. Integrated education that combines scientific and religious curricula is recommended to form a generation that is balanced, critical, and ready to contribute to society. This article emphasizes the importance of scientific literacy to face global challenges and encourages the participation of Muslim communities in global discussions and innovations, creating a balance between faith and science.

Keywords: Rationality, Scientific Literacy, Islamic Beliefs

Introduction

In a modern era dominated by scientific and technological advancement, there is a tendency to regard religion and science as two sharply separate domains.[1] However, a deeper understanding of the interplay between faith and scientific literacy can offer valuable new insights. Studies have shown that there is much common ground between religious belief and deep scientific understanding.

From an Islamic perspective, religion is not in conflict with science, but rather complements and supports each other.[2] The Qur'an, the holy book of Muslims, has posed many philosophical and scientific questions that encourage critical thinking and in-depth research. For example, the concept of tawhid (belief in one God) encourages humans to explore the wonders of the universe and deepen their understanding of the laws of nature created by Allah.

In addition, understanding the Islamic perspective on the relationship between faith and scientific literacy is also important in social and educational contexts. With significant Muslim populations around the world, including in countries with diverse levels of scientific literacy, understanding how religious beliefs can motivate or hinder the development of scientific literacy is key to promoting inclusive and sustainable education.[3]

The main objective of this research is to investigate the complex interplay between faith and scientific literacy from an Islamic perspective, focusing on the processes of inquiry and understanding. Our research aims to understand how religious beliefs in Islam can influence attitudes and practices towards science and, conversely, how scientific understanding can deepen religious understanding. This research not only aims to map the intersection of faith and scientific literacy but also to explore how these two dimensions mutually enrich and reinforce each other in an Islamic context.

This research will enrich our understanding of the relationship between faith and scientific literacy by broadening our horizons on how Islam views this relationship. Utilizing a multidisciplinary approach and proper methodologies, we will explore classical Islamic texts, philosophical thought, and related empirical

[1] Andika, "The Existence of Religion Within Technological Progress in Modern Society," *Al'Adalah* 25, no. 1 (19 April 2022): 11–20.

[2] Chief Executive Officer - Founder of Skilik Robo Advisory dan Ahmed Mabrouk, "Towards a Scientific Approach for Integrating Science's Outputs and Islamic Concepts – Part 1," *TAFHIM: IKIM Journal of Islam and the Contemporary World* 16, no. 1 (28 Juni 2023): 1–29.

[3] Resty Rahmatika dkk., "Scientific Literacy Refinement at Islamic Junior High Schools Using Socio-Science Spirituality Learning Model," *JPBI (Jurnal Pendidikan Biologi Indonesia)* 8, no. 1 (26 Maret 2022): 40–50.

research results to gain a deeper understanding of the complex dynamics between faith and scientific literacy in the Islamic tradition.

Method

This research is a qualitative study with descriptive analysis approach qualitative research with a descriptive analysis approach allows researchers to understand in depth how scientific literacy can bridge Islamic beliefs and scientific rationality. Through a systematic process of data collection and analysis, this research can offer valuable insights into how to integrate science and religion in the context of education and daily life.[4]

In this study, the researcher used data collection techniques by reviewing teaching materials, educational policies, earlier research, and religious literature to understand how scientific literacy and Islamic beliefs are conveyed in writing. Literature collection involves searching for and collecting relevant documents from various sources, including libraries, academic databases, and online sources.

Results and Discussion

Science Literacy Concept

Science literacy refers to an individual's ability to understand, evaluate, and use scientific information to make informed and evidence-based decisions. It includes an understanding of scientific concepts, the scientific method, as well as the ability to interpret scientific data and arguments. In the context of integration between Islamic belief and scientific rationality, scientific literacy forms the foundation for bringing together Islamic principles with modern scientific knowledge and practice.

According to Immanuel Kant, science literacy is not only about collecting facts or passively seeing the phenomena of the universe but also about using reason to understand the structure and laws of the universe.[5] In Kant's view, reason is the unique ability for humans to organize their sensory experiences through a priori categories or concepts such as space, time, and causality. By using this intellect, humans can develop meaningful and systematic knowledge about the universe.

[4] Nicky Hayes, "Qualitative Analysis," dalam *The Cambridge Handbook of Research Methods and Statistics for the Social and Behavioral Sciences*, ed. oleh Austin Lee Nichols dan John Edlund, 1 ed. (Cambridge University Press, 2023), 606–26.

[5] Jeff Elhai, "Science Literacy: A More Fundamental Meaning," ed. oleh Nicole C. Kelp, *Journal of Microbiology & Biology Education* 24, no. 1 (20 April 2023): 212-22.

Kant also recognized that there are limits to human knowledge. He distinguished between two types of propositions, analytical and synthetic.[6] Analytical propositions are propositions where their truth depends on the definition of the words involved in the proposition itself, while synthetic propositions are propositions where their truth cannot be found by mere analysis of the concepts involved but require empirical experience.[7]

A study titled "Defining and Measuring Scientific Literacy" by Jon D. Miller (2010) explores that the dimensions of scientific literacy include conceptual knowledge, understanding of the scientific method, appreciation of the nature of science, and skills in using scientific information to make decisions.[8] This research offers deep insight into the complexity of science literacy and the challenges of evaluating it empirically. Miller highlights the importance of developing an appreciation of the intellectual and epistemological values that underpin scientific practice. These include an appreciation of uncertainty, skepticism of claims without evidence, and openness to revision of concepts based on new evidence. He also highlighted that science literacy is not a simple concept but involves various interrelated dimensions.

Science literacy enables individuals to understand the relationship between the principles of science and Islamic values, helping in identifying points of harmony and complementarity between the two.[9] Moreover, with a strong understanding of scientific concepts, individuals can avoid misconceptions or conflicts that may arise between religious beliefs and scientific knowledge. Science literacy provides a strong framework for analyzing complex problems, seeking solutions that are based on scientific evidence and knowledge, and considering ethical and moral perspectives in an Islamic context.

The concept of science literacy involves a deep understanding of scientific concepts, the scientific method, an appreciation of the nature of science, and skills in using scientific information to make informed and evidence-based decisions. In other words, science literacy is not just about knowledge of scientific facts, but also about the ability to think critically, understand the scientific process and appreciate the values that underlie scientific practice.

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[6] Cassandra Basile, "The Role of Limitation and the Language of the Intelligence in Kant," ed. oleh N.A. Dmitrieva, R. Hanna, dan V.A. Chaly, *SHS Web of Conferences* 161 (2023): 6003.

[7] Jan-Erik Lane, "The Analytic-Synthetic Distinction and the Social Sciences," *Philosophy Study* 12, no. 10 (28 Oktober 2022): 540-43.

[8] Chen Yi, "Research on the Development Status of Features and Evaluation Model of Scientific Literacy," *Education Research and Development* 2 (25 April 2023): 63–69.

[9] Ahmad Zainuri, Miftachul Huda, dan Sukarno, "Understanding Scientific Literacy and Pedagogy Competence: A Critical Insight into Religious Integration Thinking Skills," *Journal of Educational and Social Research* 12, no. 1 (3 Januari 2022): 273.

By thoroughly understanding the concept of science literacy, individuals can develop the skills and knowledge necessary to actively take part in a science-driven society. Science literacy provides a solid foundation for informed decision-making, the development of critical thinking, and effective participation in scientific and public dialog about complex and meaningful issues.

The Urgency of Science Literacy

The urgency of science literacy in the modern era is undeniable. In a modern era full of technological and information advances, science literacy is becoming increasingly essential. Science literacy equips individuals with adequate knowledge and understanding of natural phenomena, technology, and various other aspects of science.[10] This enables them to interpret information more critically and make more informed decisions in their daily lives. A good understanding of science can help individuals to improve their quality of life.[11] For example, by understanding the principles of science in health, individuals can take better care of themselves and their families.

In a modern era full of technological and information advances, scientific literacy has become a fundamental need. Mastery of scientific literacy is no longer a luxury, but a necessity for individuals who want to live in harmony with the times. The reasons for the urgency of science literacy are rooted in various aspects of life. First, understanding science is the key to interpreting information clearly and making the right decisions amidst the onslaught of fast-paced information. Science literacy empowers individuals to think critically and analyze various information so that they are not easily trapped in hoaxes or misdirection.

Second, global challenges such as climate change, health crises, and environmental pollution, demand science-based solutions. Science literacy equips individuals with adequate knowledge and understanding to contribute to finding solutions to these global problems. Science-literate individuals can become agents of change that encourage a more sustainable and healthy life for all of humanity.[12]

Third, improving quality of life is closely related to understanding science. Science literacy provides individuals with tools to maintain their health, use technology wisely, and make the right choices in various aspects of life. By

[10] Eun Hee Cho, "Cultivating Science Literacy Through the General Education Curriculum," *The Korean Association of General Education* 16, no. 5 (31 Oktober 2022): 203–16.

[11] Nahed Abdel-Radi, "Natural Sciences Curricula and Their Role in Improving the Quality of Life: Reality and Ambitions," *Journal of Research in Curriculum Instruction and Educational Technology* 7, no. 1 (1 Januari 2021): 15–32.

[12] Adinda Arlin Husniyyah dkk., "Scientific Literacy Improvement Using Socio-Scientific Issues Learning," *IJORER : International Journal of Recent Educational Research* 4, no. 4 (7 Juli 2023): 447–56.

understanding science, individuals can improve their lives and achieve true happiness. Fourth, the progress of a nation depends on the quality of its human resources. Science literacy is one of the important pillars in building superior human resources, who can innovate and compete in the global arena. Science-literate individuals are valuable assets for the nation, which can encourage progress in various fields and lead the nation to glory.[13]

Fifth, the digital era presents an infinite sea of information. Amidst this onslaught of information, science literacy becomes a bulwark for individuals to filter accurate information and assess the credibility of sources. This ability is essential to avoid[14] misinformation and participate responsibly in the digital space. Sixth, curiosity and passion for learning are the keys to progress. Studying science can arouse curiosity and motivate individuals to keep learning. This encourages innovation and discoveries that benefit human life.

Seventh, science is not only about facts and theories but also about moral and ethical values. Science literacy helps individuals to understand the impact of science on society and the environment so that they can act responsibly and maintain a balance between scientific progress and human values. Eighth, for Muslims, studying science can strengthen faith and belief in Allah SWT. The majesty and complexity of Allah SWT's creation can be explored through scientific studies, thus fostering a sense of awe and gratitude in individuals.[15]

A study conducted by the *World Economic Forum* (WEF) in 2020 underlined the crucial role of science literacy in improving the nation's competitiveness in the era of globalization.[16] The results of this study show that science literacy is one of the essential 21st-century skills for individuals and societies to adapt and thrive during rapid change.

Research on the urgency of science literacy in Islam highlights the importance of understanding and applying the principles of science in the context

[13] Nicole C. Kelp dkk., "Developing Science Literacy in Students and Society: Theory, Research, and Practice," *Journal of Microbiology & Biology Education* 24, no. 2 (22 August 2023): 58-23.

[14] Ayuni W. Ratnayake dan Aarthi Ashok, "Investigating Anti-Vaccination Stances on Social Media: An Assignment to Promote Science Literacy," ed. oleh Mark A. Sarvary, *Journal of Microbiology & Biology Education* 24, no. 2 (22 Agustus 2023): 171–22.

[15] António Costa, Manuel Loureiro, dan Maria Eduarda Ferreira, "Scientific Literacy: The Conceptual Framework Prevailing over the First Decade of the Twenty-First Century," *Revista Colombiana de Educación* 1, no. 81 (1 Januari 2021): 198–228.

[16] Ústav experimentálnej psychológie SAV Slovakia Bratislava, Jakub Lieskovský, dan Viktória Sunyík, "How to Enhance Scientific Literacy? Review of Interventions Focused on Improving High School Students' Scientific Reasoning Skills and Attitudes Toward Science," *Ceskoslovenska psychologie* 66, no. 1 (27 Februari 2022): 30–45.

of religious and spiritual life.[17] In general, science literacy in Islam involves not only understanding natural phenomena and science but also considering the moral and ethical implications of such knowledge. In Islam, there is a drive to acquire knowledge and understand the universe as a sign of Allah's greatness. Science literacy in Islam encourages Muslims to study and understand the works of God through scientific methods, to explore His wisdom.

The importance of scientific literacy in Islam is also reflected in the concepts of *ijtihad* (thought effort) and *tajdid* (renewal).[18] Islam emphasizes the importance of adapting to developments in science and technology, while still maintaining religious principles. Therefore, a strong understanding of science is an integral part of religious practice that is in line with Islamic teachings.

In addition, science literacy in Islam can also provide Muslims with the tools to better interpret and understand religious teachings, so that they can be applied in the context of everyday life in a relevant and beneficial way for society.

Ibn Khaldun, a leading Muslim historian, sociologist, and philosopher of the 14th century, gave significant attention to the importance of scientific literacy in his monumental work, *Muqaddimah.*[19] Ibn Khaldun believed that science is a valuable tool for understanding the universe and the phenomena that occur in it. He encouraged humanity to study various branches of science, such as astronomy, physics, and mathematics, to expand their knowledge of the world. Ibn Khaldun argued that science has a significant role in the progress of civilization. He observed that civilizations that advanced in science and technology were generally more prosperous and stable.

Ibn Khaldun was a critical thinker who dared to question the dogmas and superstitions circulating in his time. He encouraged humanity to use reason and reason in assessing the truth of information, including in science. Ibn Khaldun emphasized the importance of scientific method in conducting research and discovery. He encouraged scientists to use systematic and measurable methods in the search for truth.[20]

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[17] Nur Asyiah Bulqist Rahman, Ani Khoitotun Nisa, dan Sedya Santosa, "Analisis Pembelajaran Saintifik dalam Pendidikan Islam," *Didaktik : Jurnal Ilmiah PGSD STKIP Subang* 9, no. 2 (2 Juni 2023): 1664–72.

[18] Suudin Aziz, Mundzar Fahman, dan M. Amruddin Latif, "Pendekatan Pragmatis dalam Pendidikan Islam: Kajian Terhadap Teori Al-Dzara'i' dalam Filsafat Pendidikan Islam," *Al-Aufa: Jurnal Pendidikan Dan Kajian Keislaman* 3, no. 1 (30 November 2022): 58–79.

[19] Ahmad Habib Akramullah Abd. Rahim, Susmihara, dan Ahmad Yani, "Muqaddimah Ibnu Khaldun: Study of Islamic Historiography: Historiografi Islam," *Jurnal al-Hikmah* 23, no. 2 (3 Juli 2023): 51–60.

[20] Ikhsan Kamil dan Khoirul Anam, "Ibn Khaldun's Thoughts on Islamic Education (Instrumental Pragmatist) and Their Relevance to Contemporary Islamic Education," *Intiqad: Jurnal Agama dan Pendidikan Islam* 15, no. 1 (12 Juni 2023): 26–39.

Science literacy is like a compass that guides individuals to navigate this complex world with wisdom and courage. By continuously improving science literacy, individuals and society can reap the benefits and create a brighter future.

The Concept of Faith in Islamic Perspective

Faith is a fundamental concept in many spiritual and religious traditions, including Islam.[21] Understanding its meaning deeply opens the door to firm conviction and meaningful practice. Linguistically, faith comes from the Arabic word "*aamana*" which means to believe or trust.[22]

Faith in Islam is defined as a firm and comprehensive belief in Allah SWT, along with all His Angels, His Book, His Messenger, the Last Day, and Qada and Qadar. This belief is not only believed in the heart but also proven by words and deeds.[23]

Faith in Islam in several surahs in the Qur'an, including surah Al-Hujurat verse 14

قَالَتِ الْاَعْرَابُ اٰمَنَّا ۗ قُلْ لَّمْ تُؤْمِنُوْا وَلٰكِنْ قُوْلُوْٓا اَسْلَمْنَا وَلَمَّا يَدْخُلِ الْاِيْمَانُ فِيْ قُلُوْبِكُمْ ۗ وَاِنْ تُطِيْعُوا اللّٰهَ وَرَسُوْلَهٗ لَا يَلِتْكُمْ مِّنْ اَعْمَالِكُمْ شَيْـًٔا ۗ اِنَّ اللّٰهَ غَفُوْرٌ رَّحِيْمٌ

Meaning: The Bedouin Arabs say, "We have believed." Say, "You have not believed, but say, 'We have just converted to Islam' because faith has not yet entered your heart. If you obey Allah and His Messenger, He will not diminish one iota of your deeds." Indeed, Allah is Forgiving, Merciful.

Faith in the perspective of Al-Hujurat verse 14 is not only limited to verbal recognition but must be proven by deeds and good deeds. Obedience to Allah

[21] Sergei Nizhnikov, "Concept of Faith: Its Ontological and Gnoseological Aspects," dalam *Proceedings of the 3rd International Conference on Contemporary Education, Social Sciences and Humanities (ICCESSH 2018)*, vol. 233 (3rd International Conference on Contemporary Education, Social Sciences and Humanities (ICCESSH 2018), Moscow, Russia: Atlantis Press, 2018), 12–16

[22] Michael Von Brück, "The Contribution of Religious Studies to the Dialogue of the World Religions," dalam *Philosophy Bridging the World Religions*, ed. oleh Peter Koslowski, vol. 5, A Discourse of the World Religions (Dordrecht: Springer Netherlands, 2003), 123–54.

[23] Kasiono, Muhammad Amri, dan Indo Santalia, "Islam Ditinjau dari Berbagai Aspeknya," *Mushaf Journal: Jurnal Ilmu Al Quran dan Hadis* 2, no. 3 (12 November 2022): 324–40.

SWT and His Messenger, studying the Qur'an, and believing in the earlier prophets and apostles are some of the initial evidences of a Muslim's faith.[24] This verse reminds Muslims to continue to strengthen their faith by learning and practicing the teachings of Islam with full confidence and obedience.

According to Ibn Taymiyyah (1263-1328), faith has a comprehensive and integral definition, which includes three main elements, namely, belief in the heart, confession with the tongue, and action with the limbs.[25] Faith is not just a static belief but a dynamic one, which can increase and decrease depending on one's deeds and obedience. Ibn Taymiyyah's view emphasizes the importance of integrity between belief, confession, and charity in achieving perfect faith.

Faith in Islam is not just about belief, but also about the feelings and actions that flow from that belief. This includes obeying Allah's commands and avoiding His prohibitions, as well as striving to improve oneself and do good to others as a manifestation of true faith.

Implications of Faith with Science

Faith and science are two fundamental pillars of human life. They are intertwined and have significant implications for the progress of humanity. Faith is the foundation of belief and morality, encouraging individuals to act ethically and responsibly. Faith leads humans to understand the purpose of life and their role in the universe.

Science, on the other hand, opens gates to understanding the world and its natural laws. Science enables humans to solve problems, find innovative solutions, and improve the quality of life.

Many scientists and theologians argue that faith and science can complement each other. Faith often gives deeper meaning and purpose to scientific discoveries. For example, many scientists believe that the study of the universe is a way to better understand God's creation.

Al-Ghazali, a great philosopher and theologian, argued that science and faith are not contradictory. In his work *Tahafut al-Falasifa* (The Confusion of Philosophers), he criticized some aspects of philosophy that contradict Islamic teachings but still valued science that is by religious teachings.[26] Al-Ghazali

[24] Nunung Nursyamsiah dkk., "Stylistic Study of Surah Al-Hujurat : Acquiring the Meaning of Truth," *Alsuniyat: Jurnal Penelitian Bahasa, Sastra, dan Budaya Arab* 5, no. 2 (31 Oktober 2022): 130–45.

[25] Jamie B. Turner, "Ibn Taymiyya's 'Common-Sense' Philosophy," dalam *Pluralizing Philosophy's Past*, ed. oleh Amber L. Griffioen dan Marius Backmann (Cham: Springer International Publishing, 2023), 197–212.

[26] Kurniawan Dwi Saputra, "Memahami Al-Ghazzali: Jawaban atas Kritik Skeptisisme dan Inkonsistensi," *Al-Adabiya: Jurnal Kebudayaan dan Keagamaan* 17, no. 2 (14 Desember 2022): 167–85

argued that true science will bring one closer to God. Al-Ghazali argued that true science would not contradict faith but would bring one closer to God.[27] In his view, science that is under religious teachings has spiritual value and can strengthen one's faith. True science is knowledge that helps understand Allah's creation and His laws, thus strengthening belief in His greatness and power.

Another figure who argues that faith and science do not conflict is Ibn Sina. According to Ibn Sina in his work Kitab Al-Shifa, the study of nature and science can strengthen one's faith in God. He believed that science is a way to understand God's creation and in doing so, strengthen faith.[28]

By viewing science to understand God's creation, Ibn Sina reinforced the view that scientific knowledge can enhance one's faith. When one understands the complexity and beauty of the universe, one can better appreciate the greatness and wisdom of the Creator. This view encourages Muslims to be active in science and research, in the belief that their endeavors are a form of worship and homage to God.[29]

Ibn Sina is another example of an Islamic tradition that sees science and faith as complementary entities. Through his works, he showed how scientific study can strengthen faith and how faith can offer ethical guidance in the practice of science. His views inspired many Muslim scientists to pursue knowledge with the aim of better understanding and getting closer to God.[30]

Faith often provides the moral and ethical basis for the application of science. Many scientific decisions require ethical considerations, such as in the fields of biotechnology, medicine, and human research. Religious principles can help guide scientists in making ethical and responsible decisions. Dialogue between scientists and religious leaders can bring better understanding and solutions to complex global issues. Cooperation between scientific and religious communities can help address environmental, health, and social justice issues.

Many great scientists in history, such as Isaac Newton and Albert Einstein, had strong spiritual beliefs that inspired them in their scientific work.[31] Faith can

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[27] Ismail Jalili dan Fadillah Ulfa, "An Analysis of Al-Ghazali's Thought on Happiness Through His Book: The Alchemy of Happiness," *Psikis : Jurnal Psikologi Islami* 9, no. 1 (10 Mei 2023): 30–39.

[28] Jarman Arraisi dan Fikri Hidayatul Rukmana, "The Concept of the Senses According to Ibn Sina: (Study on the Improvement of Faith)," *Jurnal Diskursus Islam* 11, no. 1 (30 April 2023): 20–36.

[29] Muh Rifqal Kaylafayza Rizky dkk., "Konsep Pendidikan Islam Perspektif Ibnu Sina," *Journal Ta'limuna* 12, no. 1 (4 April 2023): 61.

[30] Hossein Khodadadi, "Ibn Sina, Divine Simplicity and the Problem of Ineffability," *International Journal of Indonesian Philosophy & Theology* 4, no. 1 (29 Juni 2023): 29–40.

[31] Suzanne Hoogeveen dkk., "The Einstein Effect Provides Global Evidence for Scientific Source Credibility Effects and the Influence of Religiosity," *Nature Human Behaviour*

provide motivation and inspiration for scientists to explore and understand the world more deeply. Scientific discoveries can often strengthen one's faith by showing the wonder and complexity of the universe. Many people feel that a deeper understanding of the universe and human life strengthens their belief in the existence of a higher power.

There are also challenges and conflicts between faith and science, especially when certain religious teachings clash with scientific findings. For example, the theory of evolution is often a point of conflict between scientists and religious groups that support a direct creation view. These conflicts can hinder the progress of science if not faced with open dialog and understanding.[32]

Conflicts between faith and science, such as those between the theory of evolution and the view of direct creation, can indeed hinder the progress of science if not addressed wisely. Through open dialog and understanding, we can create an environment that supports scientific progress while also respecting religious values and beliefs. This is essential to ensure that the relationship between faith and science can be a source of inspiration and a deeper understanding of this complex world.[33]

Through a deep understanding of the relationship between faith and science, we can achieve greater harmony in our lives, as well as harness the full potential of both aspects for the betterment of individuals and society as a whole.

Correlation between Faith and Science Literacy

Several studies have shown that individuals who have strong religious beliefs tend to have positive attitudes toward science. Belief in the wonders of God's creation, as taught in many religions, can motivate individuals to deepen their understanding of science and the universe.[34]

Conversely, there is also research showing that rigid religious beliefs or fundamentalism can be an obstacle to deep scientific understanding. A strict

6, no. 4 (7 Februari 2022): 523–35; Thaís Cyrino De Mello Forato, "Isaac Newton and 'Hidden Forces' in Universal Gravitation: Delimiting an Approach for Teacher Training," dalam *Teaching Science with Context*, ed. oleh Maria Elice De Brzezinski Prestes dan Cibelle Celestino Silva, Science: Philosophy, History and Education (Cham: Springer International Publishing, 2018), 293–311.

[32] Reut Stahi-Hitin dan Anat Yarden, "Scientists' and Teachers' Attitudes toward Relating to Religion When Teaching Evolution," *Evolution: Education and Outreach* 15, no. 1 (Desember 2022): 18.

[33] Natanael Juan Romandya dan Freddy Manurung, "The Conflict Between Reason and Faith: The Formation of the Universe Based on the Theories of Creation and Evolution," *Journal of Scientific Research, Education, and Technology (JSRET)* 3, no. 1 (13 Februari 2024): 399–415.

[34] Kathryn A. Johnson, Morris A. Okun, dan Jordan W. Moon, "The Interaction of Faith and Science Mindsets Predicts Perceptions of the Relationship between Religion and Science," *Current Research in Ecological and Social Psychology* 4 (2023): 100113.

adherence to certain religious doctrines can prevent the recognition of scientific evidence that may contradict these beliefs.[35]

Strong science literacy can deepen one's understanding of the wonders of the universe and the complexity of God's creation. A deeper understanding of the laws of nature and scientific processes can strengthen one's faith by demonstrating the greatness and power of God.[36]

However, there is also an argument that excessive science literacy or a materialistic approach to the world can obscure or diminish the need for spiritual aspects of life. This can lead to a decline in faith or loss of religious values.[37]

Faith is often based on belief without empirical evidence, while scientific literacy relies on the scientific method, empirical evidence, and skepticism. However, some philosophers argue that the two are not completely contradictory and can coexist in one's mind.

Several studies have shown that science literacy is not necessarily associated with decreased religiosity, and in some cases, individuals with high science literacy can integrate scientific knowledge with their religious beliefs.[38]

Ecklund and colleagues' research in 2021 entitled "Secularity and Science: What Scientists Around the World Really Think About Religion", shows that many scientists in various countries still maintain their religious beliefs. In the US, around 30-40% of scientists at elite universities identify themselves as religious. The study also found that scientists in the social sciences and humanities are more likely to be religious compared to scientists in the natural sciences and engineering.[39]

Research conducted by Elaine Howard Ecklund and her colleagues found that scientists' views on religion vary widely around the world. While there is a general trend of secularization among scientists, many are still religious or spiritual. The research revealed that scientists in different countries often balance their religious beliefs with scientific practices. They see science and religion as

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[35] Murtada Jaleel Taher, "The Evidence of Obstruction: A Hermeneutic Approach to Fundamentalist Thought," *Thi Qar Arts Journal* 1, no. 37 (26 Maret 2022): 239–62.

[36] Joko Siswanto dkk., "The Barriers to Developing Students' Scientific Literacy in Learning Physics of Quantities and Measurements," *Jurnal Pendidikan Sains Indonesia* 11, no. 2 (28 April 2023): 206–20.

[37] Paul Tyson, "The Demise of Science and Religion, and the Return of Theology and Magic," *Religion and Theology* 30, no. 3–4 (20 Desember 2023): 220–43.

[38] Syarifuddin dkk., "Analysis of Science Literacy Ability of Junior High School Students with the NOSLiT Method of South Konawe Regency," *Prisma Sains : Jurnal Pengkajian Ilmu dan Pembelajaran Matematika dan IPA IKIP Mataram* 11, no. 1 (30 Januari 2023): 206.

[39] Elaine Howard Ecklund dkk., *Secularity and Science: What Scientists Around the World Really Think About Religion*, 1 ed. (New York: Oxford University Press, 2019), 1–10.

two domains that can be complementary rather than contradictory, demonstrating the complexity of the relationship between the two.[40]

The correlation between faith and science literacy is not simple and linear, but complex and multifaceted. Both can contribute to each other in shaping one's worldview, and the integration or conflict between the two depends largely on the individual and their cultural and educational context.

Conclusion

This article emphasizes the importance of scientific literacy as an essential catalyst in bridging Islamic faith and scientific rationality. Scientific literacy provides a solid foundation for individuals to not only understand scientific concepts in depth but also to see how scientific principles can align with and support Islamic teachings. This approach offers a new perspective that can reduce the misunderstandings and conflicts that often occur between science and religion.

In the context of scientific literacy, a better understanding of the scientific method, the basic principles of science, and their practical application is essential. This article outlines how a good scientific education can help individuals develop critical and analytical thinking skills, which are necessary to objectively evaluate scientific and religious claims. Thus, scientific literacy not only enriches understanding of the universe but also strengthens religious beliefs through more rational and logical interpretation.

Furthermore, this article highlights some case studies and examples where scientific literacy has successfully bridged the gap between Islamic beliefs and scientific knowledge. For example, many Muslim scientists in the past have managed to harmonize their scientific discoveries with their religious beliefs, showing that these two fields do not have to contradict each other. By tracing the history and contributions of Muslim scientists, we can see how the scientific tradition in Islam has long existed and continues to thrive.

The article also emphasizes the importance of integrated education that combines scientific and religious curricula. This kind of education can produce a generation that not only has strong scientific knowledge but also has a solid moral and ethical foundation based on Islamic teachings. This approach is essential for creating individuals who are balanced, capable of critical thinking, and ready to contribute to an ever-evolving society.

In addition, scientific literacy also plays a role in addressing global challenges such as climate change, health, and technology. With a better understanding of these issues, the Muslim community can take an active role in looking for sustainable and equitable solutions. This article suggests that

[40] Shiri Noy, "Varieties of Atheism in Science, by Elaine Howard Ecklund and David R. Johnson," *Sociology of Religion* 83, no. 2 (14 Juli 2022): 287–89.

increased scientific literacy among Muslims will encourage greater participation in global discussions and technological innovation, which in turn can enrich the global community as a whole.

In closing, this article calls on educators, religious leaders, and policymakers to work together to improve scientific literacy among Muslims. This effort is not only to increase scientific knowledge but also to build a strong bridge between religious faith and scientific rationality. Thus, scientific literacy can serve as a powerful tool to create harmony and balance between faith and science, which will ultimately bring great benefits to individuals and society at large.

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