

Al-Ghazali's Contribution to Islamic Scientific Ethics: Integration of Moral Values in Science Development

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Abstract

Abu Hamid Al-Ghazali's thought has a significant role in forming a conceptual foundation that integrates science and Islamic ethics. Through his works such as *Ihya Ulumuddin*, Al-Ghazali emphasized the importance of practicing moral values such as sincerity of intention, honesty, responsibility, and gentleness in scientific practice. For him, science not only serves as a rational tool, but also a spiritual medium to get closer to the Creator. This research seeks to examine Al-Ghazali's views on scientific ethics and how they are relevant in the context of the development of science today, which faces ethical challenges and degradation of spiritual values due to secularization. Using a qualitative approach based on literature review, this study finds that Al-Ghazali's thought offers a conceptual solution to unite reason, faith, and morals in the scientific process. This is crucial in shaping the practice of modern science that is not only technologically superior, but also noble in human values.

Keywords: Scientific Ethics; Al-Ghazali; Modern Science

Abstrak

Pemikiran Abu Hamid Al-Ghazali memiliki peran signifikan dalam membentuk landasan konseptual yang memadukan antara ilmu pengetahuan dan etika keislaman. Melalui karyanya seperti *Ihya Ulumuddin*, Al-Ghazali menegaskan pentingnya pengamalan nilai-nilai moral seperti ketulusan niat, kejujuran, tanggung jawab, dan kelembutan dalam praktik ilmiah. Baginya, ilmu tidak hanya berfungsi sebagai sarana rasional, tetapi juga merupakan media spiritual untuk mendekati diri kepada Sang Pencipta. Penelitian ini berupaya mengkaji pandangan Al-Ghazali tentang etika keilmuan serta bagaimana relevansinya dalam konteks perkembangan sains saat ini yang menghadapi tantangan etis dan degradasi nilai spiritual akibat sekularisasi. Dengan pendekatan kualitatif berbasis telaah pustaka, studi ini menemukan bahwa pemikiran Al-Ghazali menawarkan solusi konseptual untuk menyatukan akal, iman, dan moral dalam proses keilmuan. Hal ini menjadi krusial dalam membentuk praktik sains modern yang tidak hanya unggul secara teknologi, namun juga luhur dalam nilai-nilai kemanusiaan.

Kata Kunci: Etika Keilmuan; Al-Ghazali; Sains Modern

Introduction

In the course of the history of Islamic civilization, Muslim scientists not only mastered various scientific fields but also integrated spiritual and moral values in all their scientific activities. One of the great figures who contributed to the development of Islamic thought was Abu Hamid Al-Ghazali (1058-1111 M). He was a leading scholar, philosopher, theologian, and Sufi who contributed a lot to intellectual development combined with spiritual and moral aspects. Al-Ghazali comes as a figure who emphasizes the urgency of ethical values and spirituality in every process of seeking and developing knowledge.

In the development of modern science, there is an urgent need to revitalize ethical values in scientific practice because of the many challenges faced by humans due to scientific and technological advances that are not matched by spiritual and moral awareness. The development of contemporary science faces many challenges related to ethical and moral aspects, such as the secularization between the rational dimension and spiritual values and morality. This phenomenon is evident in cases of misuse of science and technology for improper purposes, such as the development of weapons of destruction and experiments that violate human values. With this, it can be understood that the development of contemporary science and technology not only helps to strengthen Islamic values, but also serves as a way of undermining them.¹

For Al-Ghazali, scientific ethics cannot be separated from the main purpose of human life, which is to get closer to God and form a just and civilized society. He firmly rejected the approach to science that is rational without being accompanied by a spiritual dimension. Through his major works such as *Ihya' Ulum al-Din*, *Tahafut al-Falasifah*, and *al-Munqidh min al-Dalal*, Al-Ghazali emphasized the importance of sincere intentions, honesty in pursuing knowledge, and making knowledge a means to achieve the perfection of good deeds.²

As a Sufi who also studied philosophy, Al-Ghazali directed his educational thinking to the aspect of human nature as a whole, including the inner and outer dimensions. Therefore, the moral education approach he developed is more theological and spiritual. In his view, the source of human morality comes from within the individual himself, and the process of moral education must be directed as a spiritual journey that guides the soul to always seek salvation and happiness in the afterlife.³

The idea of scientific ethics put forward by Al-Ghazali becomes very relevant to be reviewed in the context of the development of contemporary science which is often detached from moral and spiritual values. Therefore, re-examining the legacy of Al-Ghazali's thought is a strategic step to revive a comprehensive and valuable Islamic scientific tradition.

¹ Muhammad Yalqa Rayyandhiya Azka dan Jenuri, "Urgensi Nilai Islam dalam Menghadapi Tantangan Teknologi Kontemporer", (*Muttaqien*, volume 5 nomor 2 (Juli 2024), 191.

² Moh. Hasrul Shuhari dan Moh. Fauzi Hamat, "The Important Values of Muslim Individuals According Al-Ghazali", *Jurnal Islam dan Masyarakat Kontemporer* (Januari 2015), 36.

³ Muhammad Farid Wajdi, Siti Soliyah, "Pendidikan Moral Menurut Imam Al Ghazali dan Emile Durkheim serta Relevansinya terhadap Pendidikan Islam", (*Lencana: Jurnal Inovasi Ilmu Pendidikan*, Vol.2, No.3 Juli 2024), 64.

Al-Ghazali's thoughts on the ethics of science provide an important offer in answering this challenge. His intellectual legacy presents a scientific ethic that unites reason, heart and faith. Thus, reviewing Al-Ghazali's views is not only an effort to preserve the Islamic scientific tradition, but also a basis for reconstructing the direction of modern science so that it remains rooted in human values and spirituality.

Methods

This research approach uses an abductive approach by developing theories and data for the most possible explanation, with qualitative methods that analyze documents and literature to understand the phenomena and topics being studied.⁴ This method focuses on collecting and analyzing information from secondary sources, such as books and scientific journals. By reviewing relevant literature, the author seeks to identify concepts, theories and previous findings that can strengthen the understanding of the topic under study. Through the analysis of these sources, it is hoped that this research can provide a strong and thorough foundation for further discussion of the issues raised.

Results and Discussion

The Concept of Ethics and Science in Al-Ghazali's Thought

Long before the arrival of Islam, the discussion of ethics has been the main concern of philosophers, especially in ancient Greece. Both ethical thinking in Islam and in the Greek tradition have their own arguments and defenses.⁵ Ethics itself can be understood as an assessment of human behavior, which is related to the moral aspect of whether the action is classified as good or bad. One of the great figures in classical Greek philosophy, Aristotle, viewed that good action is the path to happiness. For Aristotle, happiness is the result of mental activity, both rational and irrational. Therefore, human motivation in doing good is not because of commands from God or sacred texts, but because of the urge to achieve happiness itself.

Meanwhile, Al-Ghazali through his monumental work *Ihya' Ulumuddin*, views ethics as a part that is closely attached to one's faith. He asserts that noble morals are the hallmark of a true believer, while despicable morals are a sign of hypocrisy. In Al-Ghazali's view, ethics is not just a social norm, but a reflection of one's spiritual condition and faith.⁶ The ethical values he describes are not only contained in *Ihya' Ulumuddin*, but are also clearly illustrated in his Sufism thought, which aims to guide humans to emulate the qualities loved by Allah.⁷

Al-Ghazali formulated three main principles of ethics in *Ihya' Ulumuddin*, namely:

1. *Tasfiyat al-Nafs* (purification of the soul), which is the process of cleansing oneself of bad traits and getting closer to Allah.

⁴ Degdo Suprayitno, dkk, *METODOLOGI PENELITIAN KUALITATIF: Teori Komprehensif dan Referensi Wajib bagi Peneliti*, (Jambi: PT. Sonpedia Publishing Indonesia, 2024), 5

⁵ Wiza Atholla Andriansyah, dkk, "Pemikiran Al-Ghazali (1058-1111 M) Tentang Etika dalam *Ihya Ulumuddin* dan Implikasi bagi Masyarakat Modern", (*Jurnal Filsafat Indonesia*, Vol 6 No 3 Tahun 2023), 397.

⁶ *Ibid.*

⁷ M. Amin Abdullah, *Antara Al-Ghazali Dan Kant: Filsafat Etika Islam*, (Yogyakarta: IRCISOD, Agustus 2020), 26.

2. Balance between reason, lust, and anger, which means ethics is able to direct these three elements so that one of them is not dominant.
3. Ethics as human nature, meaning that ethical behavior can arise naturally, but can also be formed and trained through habits.⁸

In accordance with the core of the issue, al-Ghazali named his ethics science towards the afterlife (*ilm thariq al-akhirah*) or the path traveled by the prophets and pious ancestors (*al-salaf al-shalih*). He also named it the science of religious practice (*ilm al-muamalah*).⁹

Furthermore, Al-Ghazali explained that knowledge is a representation of a truth reflected in the heart (*qalb*), like a reflection in a mirror. Knowledge is not just a product of logic, but has spiritual depth. According to him, knowledge does not reside in the human physique, but in the spirit, *nafs*, and *qalb* which are equipped with the potential of reason. In this sense, knowledge is not just an accident, but has its own essence.

He defines knowledge as a description that is certain and in accordance with the reality of the object, which is embedded in the human mind through a methodologically valid process. Knowledge, according to Al-Ghazali, occupies the most important position in human life because it is the main path to happiness, both in this world and in the hereafter. However, this knowledge must be realized in charity, because charity without the basis of knowledge will not be meaningful. Therefore, knowledge has a higher virtue than charity itself. The result of useful knowledge is the closer man is to Allah SWT.¹⁰

In discussing the object of knowledge that will later develop into various scientific branches that can be studied, developed, and taught, Al-Ghazali compiled a classification that has its own uniqueness compared to previous thinkers. He had a broad view of science and categorized it to make it easier to understand and learn.

Al-Ghazali saw that knowledge is a broad thing and is divided into various disciplines. So, to make it easier to learn various sciences, Al-Ghazali has made a classification of knowledge both based on its type and the virtue of learning it. According to Al-Ghazali, knowledge when viewed from its type is divided into two, namely:

1. *Sharī* (textual) knowledge, which is knowledge that is directly related to religion, such as the science of *tawheed*, *fiqh*, stories of the Prophets and Messengers, *tafsir*, *hadith*, and so on.
2. *Aqlī* (rational) sciences, are sciences that are not directly related to religion, such as medical science, mathematics, logic, and so on.¹¹

In addition, he also categorized knowledge based on its primacy in religious practice, namely:

1. Science *fardhu 'ain*, which is knowledge that must be learned by every individual Muslim because it is directly related to religious obligations, such as prayer, fasting, and *zakat*, as well as other basic matters in religion.

⁸ *Ibid.*

⁹ R. Roza Prantika, "Konsep Etika dalam Revolusi Pemikiran Al-Ghazali", (*JURNAL KELOLA: Jurnal Ilmu Sosial*, Vol. 6 No. 1 Tahun 2023), 45.

¹⁰ Asep Ahmad Sobari, dkk, "Konsep Ilmu Menurut Imam Al-Ghazali dan Implikasinya terhadap Etika Menuntut Ilmu", (*Prosiding Pendidikan Agama Islam*, Volume 3, No. 2, Tahun 2017), 150-151.

¹¹ *Ibid.*

2. Science fardhu kifayah, which is knowledge that is sufficient to be learned by some people in the community, because it is related to public interest and social life, such as medicine, engineering, or computer science.¹²

As Al-Ghazali has explained in Ihya 'Ulumuddin:

فهذا هو الحق في العلم الذي هو فرض عين، ومعناه : العلم بكيفية العمل الواجب، فمن علم العمل الواجب ووقت وجوبه .. علم العلم الذي هو فرض عين ان الفرض لا يتميز عن غيره إلا بذكر أقسام العلوم ، والعلوم بالإضافة إلى الفرض الذي نحن بصدده تنقسم إلى شرعية وغير شرعية

" Sciences related to aqidah and worship are obligatory, everyone is obliged to study these sciences (fardu ain) Sciences related to the public sphere, for example medical science sociology computer science and others. Not everyone is obliged to study these sciences, a few people who study them are enough (fardlu kifayah)"¹³

In this framework, Al-Ghazali makes ethics the moral foundation of knowledge, which not only shapes the personal character of a knowledge seeker, but also directs the use of knowledge for noble purposes: getting closer to God and benefiting the people. He also places knowledge not as an end in itself, but as a means to achieve ultimate happiness through an ethical and religious approach.

MORAL VALUES IN SCIENTIFIC ACTIVITY ACCORDING TO AL-GHAZALI

For Al-Ghazali, knowledge is not only a rational pursuit, but also a spiritual one. It should be based on sincere intentions, guided by ethics, and aimed at getting closer to God and improving human life. Here are some key moral values in scientific activity according to Al-Ghazali:

1. *Al-Ikhlās*: The intention in all actions is solely for the sake of Allah and not to be a slave to oneself and one's lusts. In academic activities such as studying, researching, and discussing, it is done solely to seek the pleasure of Allah SWT. by optimizing one's potential.¹⁴ The purpose of these activities is not to gain praise or worldly benefits, but rather as a form of devotion and an effort to develop one's potential to the fullest in order to achieve divine pleasure.
2. *As-Shidqu*: Instilling an honest attitude in conducting research, not committing plagiarism, respecting the intellectual work of others, and providing original work.¹⁵ Al-Ghazali taught that every seeker of knowledge must avoid plagiarism, respect the copyright of other people's thoughts, and uphold originality in his scientific work. By being honest, knowledge will grow in an atmosphere that is free from falsehoods.
3. *Al-Amanah*: Become a person who can be trusted in the process of seeking and disseminating knowledge. This is a commitment to uphold academic integrity in every aspect.¹⁶ This point implies that a scientist or student must be a trustworthy person in the process of acquiring and disseminating knowledge. This requires a

¹² Muhammad Bahruddin Yusuf, "Konsep Ilmu Menurut Pemikiran Al-Ghazali", (Berkala Ilmiah Pendidikan, Volume 4 Nomor 3, November 2024), 683.

¹³ Ahsanul Anam, "Komsep Ilmu Menurut Al-Ghazali Perspektif Filosofis: Aspek Ontologi, Epistemologi, Aksiologi", (PROGRESSA, Volume 6, Nomor 2, Agustus 2022), 25.

¹⁴ *Ibid.*

¹⁵ *Ibid.*

¹⁶ Ahmad Busroli, "Pendidikan Akhlak Ibnu Miskawaih dan Imam Al-Ghazali dalam Pendidikan Karakter di Indonesia," (ATTHULAB: Islamic Religion Teaching & Learning Journal, volume 4 nomor 2, 2019), 238.

strong commitment to moral responsibility, maintaining the authenticity of information, and not misusing knowledge for the benefit of others.

4. *Al-Afwu*: Being tolerant of other people's shortcomings and not easily judging others negatively in the scientific process. Al-Ghazali rejects a quick attitude of judgment and prioritizes an attitude of understanding human limitations, because each individual has different stages and backgrounds of understanding.
5. *Ar-Rifqu*: Having a gentle nature in interacting and conveying knowledge to others, so that it becomes an example and adds blessings to scientific activities.¹⁷ A wise teacher or researcher is required to be polite, not arrogant, and able to convey knowledge in a way that can be accepted and emulated by others. This attitude is believed to pave the way for blessings in scientific activity.

Furthermore, Al-Ghazali also proposes a standard of truth in science that is not only rooted in rationality, but must also give birth to a firm belief and lead to the truth that comes from Allah SWT. He emphasized that “the truth of science must bring conviction and knowledge ... not just hypothetical and speculative results.” This means that true knowledge is knowledge that is able to reveal the nature of reality through rational and spiritual approaches simultaneously.

In exploring the truth, according to Al-Ghazali, it is not enough to rely on the opinions of great figures blindly (*taklid*), but must dig and investigate critically until the true truth is found. He warned that allowing oneself to be trapped in an attitude of *taklid* could lead to intellectual stagnation and make great figures seem untouched by criticism. Ultimately, true truth belongs only to God, and any knowledge that leads to Him is a manifestation of absolute truth.

Al-Ghazali's view emphasizes that science is not only a means to understand the world, but also a way to get closer to God. Therefore, scientific activity must be accompanied by spiritual awareness and moral responsibility, through the internalization of values such as sincerity, honesty, responsibility, tolerance, and gentleness in the whole process.¹⁸

The Relevance of Al-Ghazali's Thought to the Development of Modern Science

Islam obliges every believer to continue learning and seeking knowledge in order to become an educated person. Knowledge and education according to Islam have a noble position, not only as a tool in understanding worldly matters but also as a means of getting closer to Allah. This does not escape the thought of Imam Ghazali who views that education is a process of character building and noble morals, not just the transmission of knowledge.¹⁹ According to Al-Ghazali, knowledge should be an alternative to get closer to Allah. In the process of seeking knowledge, there are ethics that must be owned by knowledge seekers. In his book “*Ihya' ulumuddin*” Al-Ghazali emphasizes the adab of seeking knowledge must be based on straight intentions, filled with a sense of sincerity, humility and not making knowledge a pillar to gain popularity and wealth. Knowledge

¹⁷ *Ibid.*

¹⁸ Agus Salim, “DIKOTOMI ILMU PERSPEKTIF IMAM GHAZALI DAN PENGARUHNYA TERHADAP KEBIJAKAN PENDIDIKAN DI INDONESIA”, (*Kariman*, Volume 10, Nomor 01, Juni 2022), 10.

¹⁹ Irawan, Edo Feri; Rohman, Fathur. Rekonstruksi Konsep Pendidikan Agama Islam Berbasis Etika Spiritual: Studi Kritis atas Pemikiran Pendidikan al-Ghazali, (*IQRO: Journal of Islamic Education*, 8 no.1, Juni 2025), 165

should be directed for the benefit of society and spiritual improvement, not for exploitation or destruction.²⁰

In the midst of the rapid development of modern science and technology such as artificial intelligence and genetic engineering, the scientific ethics asserted by Al-Ghazali become very relevant to be reviewed and applied. The challenge of science today lies not only in its sophistication, but also in the demand to ensure its ethical and responsible use. Al-Ghazali himself did not reject science or modern knowledge absolutely. Instead, he invited Muslims to filter and develop knowledge with a strong foundation of Islamic values, especially in terms of spirituality and morality.

Al-Ghazali's concept has significant relevance in facing global challenges in modern society. The integration of religious and worldly sciences proposed by Al-Ghazali can help overcome the conflict between science and religion that often arises in this era. It offers a balanced approach in which science and religion complement each other, contributing to a holistic understanding of the world and human life.²¹

Thus, the integration of science, ethics and faith is a very important principle. Science that is developed without ethics and spiritual values is feared to lose its way and actually bring damage. On the contrary, science rooted in faith and morality will be able to develop not only technically, but also provide true benefits to humanity and maintain harmony with the universe.

Conclusion

Al-Ghazali offers a scientific ethical framework that unites intellectual and spiritual aspects, making science a path that leads humans to truth and closeness to God. He views that knowledge is not enough to be a rational activity, but must be based on morality and worship. Ethical values such as sincerity, honesty, moral responsibility, tolerance, and gentleness are important elements in carrying out the process of seeking and disseminating knowledge.

In the context of the development of science and technology today, which is often detached from the moral and spiritual dimensions, Al-Ghazali's approach becomes very relevant. He reminded us that science that is free from religious values can lead to damage, while science that is guided by faith and ethics can bring benefits to the people and harmony to the universe.

Therefore, Al-Ghazali's ethical ideas need to be revived so that modern science can develop in a balanced technological as well as humanist and transcendental way.

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²⁰ Aldi Chandra Pradana, "Nilai-nilai Pendidikan Kepercayaan Moral dalam Kitab Terjemahan Sabilul 'Abid Ala Jauharah At-Tauhid Karya Kh. Sholeh Darat" (Skripsi, Universitas Islam Sultan Agung Semarang, 2021), 22

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²¹ Noor Liyana Selvia, "KONSEP PENGEMBANGAN ILMU MENURUT IMAM AL-GHAZALI: PERSPEKTIF EPISTEMOLOGI DAN EKSPLORASI KONTEMPORER", (*SERUMPUN : Journal of Education, Politic, and Social Humaniora* Vol. 2, No. 1, Januari - Juni 2024), 14.

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