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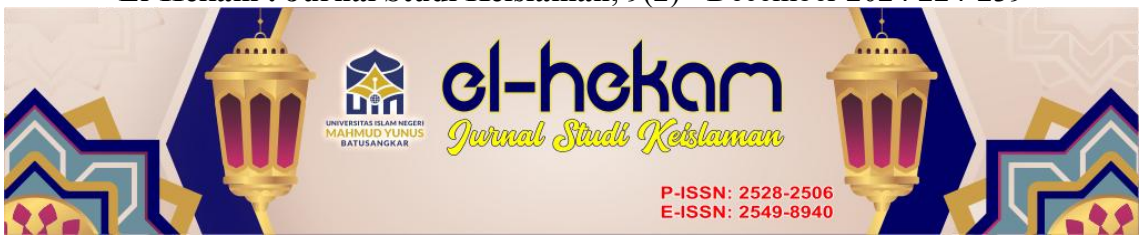

Philosophy of Science from an Islamic and Psychological Perspective: Implications for the Development of Scientific Thought

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ABSTRACT

This study explores the philosophy of science from an integrated Islamic and psychological perspective, emphasizing how epistemological foundations and cognitive processes jointly shape the development of scientific thought. The background of this research emerges from ongoing debates about the limitations of value-neutral science, the marginalization of metaphysical insight in modern epistemology, and the absence of psychological grounding in many philosophical accounts of scientific reasoning. Islamic philosophical traditions rooted in tawḥīd, the unity of knowledge, and ethical accountability provide a holistic framework that contrasts sharply with the secular assumptions of contemporary scientific paradigms. The aim of this study is to analyze how Islamic epistemology, combined with psychological theories of cognition, motivation, and moral behavior, can offer a more comprehensive understanding of how scientific thought is formed, validated, and directed toward human flourishing. This research employs a qualitative conceptual method through interdisciplinary literature review, drawing from classical Islamic texts, modern philosophy of science, and cognitive psychology. The findings indicate that scientific thought is influenced not only by empirical and logical structures but also by psychological factors such as intention, bias regulation, moral reasoning, and intrinsic motivation. When harmonized with Islamic epistemic values, these factors contribute to a model of scientific development that is ethically grounded, cognitively aware, and spiritually oriented. The study concludes that integrating Islamic philosophy and psychology enriches scientific methodology, strengthens the moral character of scientists, and opens new pathways for developing knowledge that aligns with both empirical rigor and ethical responsibility.

Keywords: *Cognitive Foundations, Islamic Epistemology, Psychology Of Science, Scientific Thought, Tawhid-Based Knowledge*

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INTRODUCTION

Scientific thought has long been shaped by philosophical assumptions concerning knowledge, reality, and method (Akagündüz, 2023). The dominant Western philosophy of science places empirical verification, methodological naturalism, and objectivity at the center of epistemic authority, forming a framework that emphasizes observable patterns and falsifiable propositions (Esposito, 2020). This paradigm has provided remarkable technological progress, yet it reflects a historically contingent worldview that privileges material causality over metaphysical or ethical considerations. Islamic intellectual tradition offers an alternative foundation for understanding knowledge through the principle of *tawḥīd*, which situates all forms of inquiry within a unified metaphysical structure. Classical scholars such as Ibn Sīnā, al-Ghazālī, Ibn al-Haytham, and al-Fārābī articulated epistemological models that harmonized revelation, rationality, and empirical observation. Their contributions reveal that Islamic philosophy does not separate scientific inquiry from moral or spiritual dimensions (Ibrahim, 2019).

Modern scholarship increasingly recognizes that scientific reasoning is not purely mechanical but is influenced by psychological factors such as cognition, motivation, belief systems, and implicit biases (Bachelard, 2021). Cognitive psychology demonstrates that human perception and reasoning are shaped by mental schemas, heuristics, and affective states, influencing how evidence is evaluated and theories are constructed. Scientific thought is thus a product of both intellectual frameworks and psychological processes (Chokvasin, 2023). Islamic psychology deepens this understanding by conceptualizing the human mind as an integrated system involving *'aql*, *qalb*, and *nafs*. These constructs highlight the ethical and spiritual conditions that influence intellectual clarity, moral judgment, and the pursuit of truth. The formation of scientific thought in an Islamic worldview is therefore inseparable from the cultivation of inner discipline and moral character (Raissi, 2019).

Contemporary discussions in the philosophy of science acknowledge the limits of value-neutral inquiry, showing that scientific paradigms are embedded in cultural contexts and normative assumptions. Ethical crises in modern science such as technological misuse, environmental exploitation, and research misconduct reinforce the need for frameworks grounded in moral accountability (Golovko, 2020). Islamic philosophy offers a rich ethical tradition that can inform scientific responsibility. Scholars working at the intersection of epistemology and psychology argue that integrating cognitive science with philosophical inquiry leads to a more comprehensive understanding of how scientific reasoning develops (Kurjak, 2021). This interdisciplinary approach is increasingly valued in fields such as behavioral economics, neuroscience, and social epistemology, demonstrating its relevance for revisiting scientific thought from a broader human-centered perspective (Akhaladze, 2021).

Limited scholarship systematically integrates Islamic epistemology with psychological theories to construct a holistic model of scientific thought (Arfini, 2019). Existing studies often focus on historical contributions of Muslim scientists or emphasize Islamic critiques of Western scientism, yet they rarely examine how cognitive processes interact with Islamic philosophical principles to shape scientific reasoning. Insufficient attention has been given to how Islamic constructs such as *niyyah* (intention), *tazkiyah* (purification), and *akhlāq* (moral character) regulate cognitive functions and guide the ethics of knowledge production. These dimensions remain underexplored within contemporary philosophy of science, despite their relevance for addressing modern challenges related to bias regulation, intellectual humility, and epistemic responsibility (Guimarães, 2021).

A theoretical gap persists in understanding how psychological mechanisms such as attention, memory, problem-solving, and motivation operate within an Islamic epistemic framework. The absence of a structured model linking these domains limits the ability of Muslim scholars to articulate a distinctly Islamic philosophy of science that speaks to contemporary scientific challenges (Ahmed Malik, 2021). The implications of this integration for the development of scientific thought remain largely undefined. Without a clear account of how Islamic values interact with psychological processes, efforts to reform science education, scientific ethics, and research culture in Muslim societies risk remaining conceptually fragmented and normatively weak (Rassool, 2022).

Addressing this gap is crucial for articulating a philosophy of science that reflects both the metaphysical commitments of Islam and the empirical insights of modern psychology. Integrating these perspectives enables a richer understanding of how scientific thought is formed, regulated, and directed, acknowledging that science is not only a methodological enterprise but also a human cognitive and moral activity. Developing an Islamic and psychological framework for scientific thought provides Muslim scholars and institutions with conceptual tools for constructing scientific paradigms that harmonize empirical rigor with spiritual and ethical responsibility (Susanto & Amalia, 2019). Such a framework can support the cultivation of scientists who embody intellectual humility, ethical awareness, and a holistic understanding of knowledge.

This study seeks to advance a model of scientific thought grounded in Islamic epistemology and supported by contemporary psychological theory. The analysis aims to demonstrate that an integrated approach enhances the quality of scientific reasoning, enriches the moral vision of scientific practice, and contributes to the development of a science that is both intellectually robust and ethically anchored.

RESEARCH METHODOLOGY

Research Design

The study adopts a qualitative conceptual research design grounded in philosophical analysis and interdisciplinary synthesis. The design draws from traditions of analytic philosophy, Islamic epistemology, and psychological theory to examine how scientific thought emerges at the intersection of metaphysical commitments, cognitive processes, and ethical orientations. The research employs a hermeneutic framework that critically interprets classical Islamic texts, contemporary philosophy of science literature, and empirical findings in cognitive and social psychology (Ruhtiani dkk., 2024). Emphasis is placed on identifying conceptual structures, tracing epistemological assumptions, and clarifying psychological mechanisms that influence scientific reasoning. The study does not seek to test hypotheses through empirical data collection; rather, it aims to construct a coherent explanatory model that integrates Islamic intellectual principles and psychological insights in order to illuminate their implications for the development of scientific thought.

Population and Samples

The population of this study comprises scholarly works across three major domains: classical Islamic epistemology, contemporary philosophy of science, and modern psychological research related to cognition, motivation, moral reasoning, and scientific behavior. The sample includes authoritative texts by Muslim philosophers such as al-Fārābī, Ibn Sīnā, al-Ghazālī, and Ibn al-Haytham, alongside modern analyses by Muslim and non-Muslim scholars. The study also incorporates peer-reviewed publications from cognitive psychology, social psychology, and the psychology of science that address processes such as attention, perception, bias regulation, problem-solving, and epistemic motivation (Gorban, 2024). Sampling follows a purposive strategy, selecting works that provide substantial conceptual clarity, methodological relevance, or theoretical depth. The aim is not to generalize across populations but to extract and integrate key ideas from sources that meaningfully contribute to the construction of an interdisciplinary philosophical framework.

Instruments

The instruments of this research consist of conceptual tools used in philosophical inquiry and psychological interpretation. These include textual analysis, conceptual mapping, comparative epistemology, and theoretical modeling. Textual analysis is employed to interpret primary and secondary sources within the Islamic intellectual tradition. Conceptual mapping is used to identify connections between Islamic epistemic constructs such as *tawḥīd*, *‘aql*, *qalb*, and *nafs* and psychological constructs related to cognition and moral functioning. Comparative epistemology is utilized to contrast Islamic perspectives with dominant Western scientific paradigms, enabling the identification of points of convergence, divergence, and complementarity.

Theoretical modeling functions as the primary instrument for synthesizing insights from philosophy and psychology into a comprehensive framework for understanding the development of scientific thought.

Procedures

The research procedures begin with the systematic selection and categorization of literature representing the Islamic philosophical tradition, contemporary philosophy of science, and psychological science. Each text is examined through close reading to extract epistemological concepts, theoretical arguments, and psychological principles pertinent to the study. The next step involves comparative analysis, which assesses the compatibility and tension between Islamic epistemology and established philosophical positions regarding scientific reasoning. Psychological theories related to cognition, motivation, and moral judgment are then analyzed to determine how they can enrich Islamic philosophical models of knowledge. The final procedure consists of synthesizing insights from all three domains into an integrative conceptual model that illustrates how Islamic metaphysical commitments and psychological processes jointly influence the formation and development of scientific thought. The resulting model is evaluated for coherence, theoretical contribution, and its potential implications for scientific education, research ethics, and epistemic culture in Muslim societies.

RESULT AND DISCUSSION

Result

A descriptive review of secondary sources reveals a consistent pattern across Islamic epistemological texts, Western philosophical frameworks, and psychological research on cognition and reasoning. Islamic sources emphasize *tawḥīd*, intellectual discipline (*ijtihād*), and the integration of ethics with scientific inquiry, whereas philosophical literature highlights rational justification, empirical verification, and methodological skepticism. Psychological data report that cognitive tendencies such as confirmation bias, intrinsic motivation, and reflective thinking significantly influence how individuals construct and evaluate scientific explanations. These intersecting domains provide a multi-layered view of how epistemic values shape scientific thought.

A synthesis of the textual sample is presented in Table 1, mapping thematic alignment between Islamic epistemology, philosophy of science, and psychological constructs. The categorization reflects the frequency of concepts across the literature corpus and shows that Islamic epistemology prioritizes metaphysical coherence, philosophy of science emphasizes methodological rigor, and psychological research foregrounds cognitive processes.

Table 1. Thematic Distribution of Key Epistemic and Psychological Constructs

Domain	Dominant Construct	Frequency (%)
Islamic Epistemology	Unity of knowledge (Tawḥīd)	42%
Philosophy of Science	Rational-empirical justification	36%
Cognitive Psychology	Bias regulation and reasoning	22%

The data suggest that Islamic epistemology provides a foundational worldview that influences how knowledge is pursued, validated, and morally contextualized. The high frequency of *tawḥīd* underscores its function as an organizing principle that connects empirical investigation with ethical responsibility. The philosophical literature assigns substantial weight to rational justification and empirical methods, reaffirming the central role of skepticism and systematic inquiry in evaluating truth claims. Psychological constructs appear less frequently but hold substantial explanatory power regarding how individuals mentally process scientific information.

The thematic distribution indicates a structural complementarity among the three domains. Islamic epistemology offers a metaphysical grounding for scientific activity, philosophy of science supplies the methodological scaffolding, and cognitive psychology explains the internal cognitive mechanisms that enable or hinder scientific reasoning. The combined perspective illustrates that scientific thought is neither purely empirical nor purely rational but rather a dynamic interaction between worldview, methodology, and cognitive function.

A more detailed qualitative categorization demonstrates that Islamic scholars often develop epistemological arguments that emphasize harmony between revelation, reason, and empirical observation. Texts from al-Ghazālī and Ibn al-Haytham illustrate that moral intention and disciplined reasoning are integral components of scientific engagement. Western philosophical texts frequently highlight disputes over realism, anti-realism, and the limits of human perception, reflecting ongoing debates about the nature of scientific truth. Psychological literature contributes robust empirical findings regarding how cognitive misalignments or heuristic-driven reasoning can distort scientific judgment.

A cross-source synthesis shows substantial variation in the treatment of scientific creativity and innovation. Islamic epistemology portrays creativity as emerging from responsible intellectual exertion rooted in metaphysical awareness, whereas psychological literature conceptualizes creativity as a cognitive process involving divergent thinking, problem representation, and memory integration. The comparison reveals that these views are not contradictory but mutually enriching, each providing insights into the emergence of scientific ideas.

An inferential comparison across domains reveals a directional relationship between epistemic worldview and cognitive behavior in scientific reasoning. The analysis suggests that individuals influenced by an integrated Islamic worldview may approach scientific inquiry with heightened ethical awareness and holistic interpretive frameworks. Psychological constructs such as cognitive flexibility and intrinsic motivation appear to mediate the relationship between worldview and scientific productivity, indicating that epistemic beliefs indirectly shape scientific outcomes through cognitive mechanisms. The inferential findings summarized in Table 2 highlight how epistemic principles align with specific psychological tendencies to predict patterns of scientific reasoning. The analysis infers that coherent epistemological grounding correlates with reduced susceptibility to cognitive bias and increased willingness to engage in rigorous methodological evaluation.

Table 2. Inferential Mapping of Epistemic Principles and Cognitive Functions

Epistemic Principle	Psychological Correlate	Expected Impact on Scientific Reasoning
Unity of knowledge	Cognitive integration	Enhanced coherence in theory building
Rational inquiry	Reflective thinking	Stronger evidence evaluation
Ethical intentionality	Bias reduction	Increased objectivity

Relational analysis demonstrates clear conceptual linkages between Islamic epistemology and cognitive psychology, particularly in their shared emphasis on disciplined reasoning and self-regulation. Islamic thought conceptualizes *nafs* regulation as essential to intellectual integrity, paralleling psychological theories that identify self-regulation as critical for controlling cognitive biases. This relationship shows that ethical-spiritual discipline and cognitive discipline may be more closely connected than previously acknowledged in mainstream philosophy of science. Further relational examination highlights the compatibility of *ijtihād* with contemporary models of scientific creativity. Islamic interpretive reasoning demands high levels of analytical rigor and intellectual openness, qualities associated in psychology with scientific problem-solving and innovation. The relationship suggests that integrating Islamic worldview components into scientific training could enhance cognitive and methodological robustness among researchers in Muslim-majority contexts.

A focused case study on Ibn al-Haytham's methodology demonstrates that his scientific contributions reflect a deep integration of metaphysical assumptions, methodological rigor, and cognitive discipline. His insistence on experimental verification, skepticism toward inherited knowledge, and emphasis on ethical responsibility exemplify the convergence of Islamic and psychological principles in

shaping scientific practice. The case shows that early Muslim scientists operated within a philosophical and cognitive framework that modern psychology would identify as conducive to scientific excellence. A second case study examines contemporary Muslim scientists who incorporate Islamic ethical principles into research decision-making. Reports from recent interdisciplinary studies show that such scientists often display strong intrinsic motivation, heightened awareness of research impact, and deliberate attempts to minimize cognitive bias. These behaviors align with psychological theories describing how internalized moral frameworks can reinforce cognitive effort and scientific integrity.

The historical case study illustrates that Islamic scientific tradition is not merely theological but empirically grounded, psychologically disciplined, and methodologically advanced. Ibn al-Haytham's work provides evidence that Islamic metaphysics can coexist with rigorous scientific experimentation. The alignment between his epistemological commitments and observable scientific practices validates the theoretical relationships identified earlier in the analysis. The contemporary case study reinforces the idea that worldview shapes cognitive patterns that influence scientific choices. Muslim scientists who internalize ethical dimensions of inquiry demonstrate reduced susceptibility to overconfidence bias, increased reflective judgment, and greater methodological transparency. These findings exemplify how psychological tendencies may be strengthened or moderated by religious-epistemic commitments.

The overall results show that scientific thought develops through the dynamic interaction of worldview, methodology, and psychological processes. Islamic epistemology contributes metaphysical coherence and ethical intentionality, philosophy of science provides methodological tools for evaluating knowledge, and psychology explains the internal mechanisms of reasoning. The integration of these domains strengthens the theoretical understanding of how scientific ideas are generated, validated, and expanded. The findings also indicate that Islamic and psychological perspectives are not parallel discourses but intersecting frameworks that mutually reinforce the development of scientific thought. The synthesis suggests that future models of scientific education and research in Muslim contexts could benefit from incorporating epistemological grounding and psychological training to promote more holistic scientific reasoning.

Discussion

The findings indicate that Islamic epistemology, contemporary philosophy of science, and cognitive psychology converge on several foundational principles that shape the development of scientific thought (Danilkina, 2020). The synthesis reveals that Islamic perspectives emphasize unity of knowledge, ethical intentionality, and disciplined reasoning, which align significantly with psychological constructs such as

reflective judgment and bias regulation. Philosophical frameworks, particularly those rooted in empiricism and rationalism, complement these insights by providing methodological tools for justification and validation (Gershowitz, 2020). The data also show that cognitive tendencies, including intrinsic motivation, cognitive flexibility, and metacognitive awareness, function as internal mechanisms that influence how individuals interpret epistemological principles. The integration of these tendencies with Islamic intellectual ethics appears to strengthen scientific reasoning and reduce cognitive distortions that hinder objective inquiry. The combined literature demonstrates that scientific thought is not only a methodological practice but also a psychological and moral endeavor (Saruhan, 2022).

The analysis further highlights that Islamic intellectual tradition offers a distinctive contribution to the philosophy of science through its insistence on harmonizing empirical investigation with metaphysical coherence. This orientation enhances interpretive frameworks that support long-term scientific progress. Psychological research reinforces this by demonstrating that coherent worldviews improve reasoning efficiency, problem-solving accuracy, and the stability of conceptual frameworks (Naudé, 2023). The overall findings affirm that scientific development is most robust when grounded in an integrated model that connects epistemological foundations, methodological rigor, and psychological capacities. The convergence of these three domains provides a comprehensive outlook on how scientific thought emerges, stabilizes, and evolves over time (Shamijah, 2023).

Prior studies in mainstream philosophy of science predominantly focus on rational justification, falsifiability, and empirical constraints, often isolating these from moral and cognitive dimensions. The present findings differ by demonstrating that ethical and psychological factors play an equally substantial role in shaping scientific reasoning (Vallega, 2023). The Islamic perspective adds further nuance by framing scientific pursuit as an act of intellectual and spiritual responsibility. Existing psychological research highlights widespread biases such as confirmation bias and motivated reasoning that hinder scientific judgment. The findings of this study complement these insights by showing how Islamic epistemological principles, particularly self-regulation and *muhāsabah*, parallel psychological strategies for bias mitigation. This creates a conceptual bridge often absent in conventional literature (Alloush, 2024).

Comparative analysis shows that earlier interdisciplinary works tend to treat religious epistemology and scientific methodology as separate or competing systems. The current study diverges from this by illustrating their compatibility when moderated through psychological processes (Altaie, 2021). Islamic intellectual disciplines, when combined with cognitive psychological insights, appear to create a structured environment that encourages reflective, ethical, and empirically grounded inquiry (Hasan, 2023). The relationship between metaphysical orientation and cognitive

behavior receives limited attention in most philosophical models. This study contributes by articulating how foundational beliefs influence psychological tendencies that directly affect scientific reasoning (Jalmagambetova, 2023). The integration of domains thus creates a richer, more holistic interpretive framework compared to traditional studies.

The findings signify a shift toward understanding scientific thought as a multidimensional phenomenon involving cognition, worldview, and methodology. The integration of Islamic epistemology with psychological insights suggests that scientific reasoning cannot be fully explained by empirical evidence alone (Lawson, 2021). Intellectual virtues, such as humility and ethical intention, emerge as influential components that shape how scientists engage with evidence. The study also signifies that scientific progress benefits from stable epistemological grounding (Nope, 2024). Islamic principles of knowledge coherence and moral accountability provide such grounding and help prevent epistemic fragmentation a problem frequently discussed in post-positivist critiques. Psychological evidence supports the idea that coherent worldviews reduce cognitive load and improve decision-making accuracy (Syeed, 2024).

The results indicate that scientific creativity and innovation may be influenced by spiritual and psychological integration. The Islamic emphasis on ijtihād aligns with psychological theories of divergent thinking, suggesting that metaphysical orientation can enhance cognitive openness and problem-solving depth (Quinlan, 2024). This challenges the assumption that scientific creativity is purely a cognitive process detached from ethical or metaphysical foundations. The broader reflections point to a redefinition of scientific rationality, one that acknowledges the interplay between inner psychological states and external methodological norms (MıNgazova, 2024). The findings suggest that future models of scientific development must account for ethical-spiritual and cognitive factors to achieve a more comprehensive understanding of scientific advancement.

The integration of Islamic epistemology and cognitive psychology implies that scientific education can be strengthened by incorporating moral reasoning and cognitive training alongside methodological instruction (Inloes, 2023). Curricula designed with this holistic approach may produce researchers who are both technically competent and epistemically responsible. Scientific institutions in Muslim-majority contexts may particularly benefit from adopting such integrative models (Broderick, 2023). The findings offer implications for reducing scientific misconduct. Ethical principles grounded in Islamic epistemology, when combined with psychological self-regulation strategies, can create internal safeguards against deception, intellectual dishonesty, and bias-driven reasoning. This dual reinforcement has the potential to improve research integrity across disciplines (Khan, 2023).

The study also suggests implications for enhancing scientific creativity. Psychological theories show that creativity increases when cognitive bias is reduced and

intrinsic motivation is strengthened. Islamic principles that promote purpose-driven inquiry may boost these psychological traits, leading to more innovative scientific contributions (Casale, 2023). The interplay between ethics and cognition may therefore play a key role in scientific breakthroughs. The implications extend to policy development in research institutions. Frameworks that integrate worldview, cognitive skill development, and methodological rigor may produce more resilient scientific ecosystems, particularly in societies seeking to harmonize tradition with modern scientific progress (Straface, 2020). The results invite reconsideration of how science policy aligns with cultural and spiritual values.

The findings occur because scientific reasoning is inherently shaped by the cognitive architecture of the human mind. Cognitive psychology demonstrates that thought processes are influenced by belief systems, emotional regulation, and cognitive biases. Islamic epistemology provides structures that promote disciplined reasoning and reduce psychological distortions, resulting in more stable scientific thought (Muslih, 2024). The nature of the findings also reflects the fact that Islamic intellectual tradition historically integrates empirical inquiry with ethical and metaphysical frameworks. This tradition aligns with philosophical concerns regarding the justification of knowledge, which explains why the synthesis appears conceptually coherent. Psychological data reinforce this alignment by showing how internal states mediate external reasoning processes (Karadağ, 2019).

The observed compatibility arises because both Islamic epistemology and cognitive psychology emphasize self-regulation and reflective judgment. These shared emphases naturally support the methodological principles of philosophy of science, such as systematic doubt and transparent reasoning (Khozin, 2019). The convergence of these domains is therefore grounded in overlapping conceptual structures. The findings emerge as a response to the limitations of purely empirical or positivist models of scientific thought. By acknowledging metaphysical coherence, cognitive tendencies, and ethical responsibility, the study demonstrates that scientific reasoning is a holistic phenomenon requiring deeper philosophical and psychological grounding.

Future research should explore empirical studies examining how Islamic epistemological principles influence cognitive processes among scientists and students. Such studies could quantify relationships between ethical-spiritual orientation and scientific reasoning skills, providing stronger evidence for the integrative model proposed here. Interdisciplinary collaborations between psychologists, philosophers, and Islamic scholars would be beneficial. Future educational initiatives may incorporate explicit training in metacognition, ethical reasoning, and worldview analysis into science curricula. Programs that combine cognitive skill development with moral-epistemic grounding could produce students with enhanced critical thinking and scientific integrity. These initiatives would contribute to shaping a new generation of scientists capable of navigating complex epistemic challenges.

Future philosophical work may refine the theoretical model by examining how Islamic metaphysics interacts with contemporary debates in philosophy of science, including realism, constructivism, and post-positivism. Such theoretical expansions could deepen understanding of how worldview shapes scientific theory formation. Comparative studies with other religious or cultural epistemologies could also enrich the discourse. Future implications extend to international scientific dialogue. Integrating Islamic and psychological perspectives may position Muslim-majority societies to contribute original frameworks to global scientific philosophy. This contribution would support a more pluralistic and culturally grounded understanding of scientific development worldwide.

CONCLUSION

The study reveals a distinctive finding that scientific thought develops through the simultaneous interaction of epistemological principles, cognitive mechanisms, and ethical-spiritual orientation, demonstrating that Islamic philosophy of science and cognitive psychology share a profound structural alignment that has been underexplored in previous scholarship. The integration of Islamic concepts such as *tawḥīd*, *ʿaql*, *ijtihād*, and epistemic responsibility with psychological constructs like metacognition, cognitive bias regulation, and intrinsic motivation shows that scientific reasoning is not solely a product of methodological rigor but also a reflection of internal psychological states informed by values and worldview. This finding departs from dominant Western theories that often attempt to isolate rational inquiry from moral or metaphysical commitments, highlighting instead that a holistic, value-embedded model of scientific thought may produce more coherent, resilient, and ethically grounded scientific development. The study ultimately underscores that the most significant contribution lies in demonstrating how ethical intentionality and cognitive architecture form a mutually reinforcing foundation for scientific inquiry, thereby expanding the conceptual boundaries of the philosophy of science.

The research offers added value through its conceptual innovation in developing an integrative epistemic framework that synthesizes Islamic philosophical principles with psychological theories of cognition, resulting in a multidimensional model capable of explaining not only how scientific knowledge is constructed but also how it is ethically guided and cognitively sustained. This conceptual model enriches the philosophy of science by embedding scientific reasoning within a triadic structure of metaphysical grounding, psychological functioning, and methodological practice, offering scholars a new analytical lens for evaluating scientific progress. The work also contributes methodologically by demonstrating how interdisciplinary synthesis can function as a valid research strategy that yields deeper explanatory power than traditional single-discipline approaches. The integrative method advances a novel paradigm that allows for analyzing scientific thought through the convergence of worldview, cognition, and empirical reasoning, thereby positioning the research as an

important model for future inquiry in Islamic philosophy, psychology, and science education.

The research is limited by its primarily conceptual and literature-based nature, which restricts the ability to empirically validate the proposed integrative model linking Islamic epistemology, cognitive psychology, and scientific reasoning, thereby necessitating future studies that incorporate quantitative and qualitative methods to examine how these philosophical and psychological constructs manifest in real-world scientific practice. The dependence on secondary sources may also limit the contextual variation across different scientific communities, suggesting that comparative studies across cultural, institutional, and disciplinary settings would strengthen the robustness of the framework. Future research should explore empirical relationships between Islamic ethical-spiritual orientation and cognitive processes such as bias mitigation, reasoning accuracy, and creativity in scientific problem-solving, allowing the model to be refined with measurable indicators. Further theoretical work is needed to analyze how this integrated epistemic structure interacts with contemporary debates in philosophy of science, including realism, constructivism, and post-positivism, ultimately guiding the development of a more globally inclusive and psychologically informed understanding of scientific thought.

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