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The Epistemological Function of Mantiq (Logic) in Al-Ghazali's *Mi'yar al-'Ilm*

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Abstract

Although Al-Ghazali's epistemology and logical thought have been widely examined, the role of *mantiq* (logic) in knowledge formation and validation in *Mi'yar al-'Ilm fi Fann al-Mantiq* remains insufficiently explored. This study analyzes the epistemological function of logic in Al-Ghazali's thought through a philosophical examination of this work. A qualitative library research approach was employed, using *Mi'yar al-'Ilm* as the primary source alongside secondary literature on Al-Ghazali's logic, Islamic epistemology, and the development of *mantiq* within the Islamic intellectual tradition. Sources were documented and analyzed using descriptive-analytical and interpretive methods, focusing on *tashawwur*, *tashdiq*, definitions, propositions, and *qiyas*. The findings indicate that logic functions as an epistemological instrument that structures knowledge acquisition through accurate conceptualization, proper judgment, and valid inference. However, logic is not presented as the sole source of knowledge, since the epistemic warrant of its conclusions also depends on the truth and justification of the premises. These findings clarify the relationship between logical reasoning and knowledge validation in Al-Ghazali's epistemological framework. The study contributes to understanding *mantiq* as a methodological foundation that connects rational inquiry with the broader pursuit of knowledge within the Islamic intellectual tradition.

Keywords: Al-Ghazali; Logic; Islamic Epistemology; *Mi'yar al-'Ilm*; Knowledge Formation

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INTRODUCTION

Logic (mantiq) has played an important role in the development of the Islamic intellectual tradition, particularly as a methodological instrument for organizing reasoning, constructing arguments, and evaluating the validity of knowledge claims. The transmission of Aristotelian logic into the Islamic world was not merely a passive adoption of Greek philosophical methods; Muslim scholars engaged with, adapted, and transformed logical frameworks to fit their own intellectual and theological contexts. Within this historical development, logic became closely connected with discussions of epistemology, especially concerning how human beings acquire, justify, and distinguish valid knowledge from error (Adamson, 2016; Gutas, 2014).

Among Muslim intellectuals who significantly contributed to the development of logical studies, Abu Hamid al-Ghazali (1058–1111) occupies a distinctive position. Although widely recognized for his criticism of certain philosophical doctrines in Tahafut al-Falasifah, al-Ghazali did not reject rational inquiry entirely. Instead, he incorporated logical methods into his broader intellectual framework and considered logic as a necessary tool for achieving disciplined reasoning. His engagement with logic demonstrates a complex relationship between rational demonstration, religious knowledge, and epistemological inquiry (Griffel, 2009; Leaman, 2015; Rizza et al., 2026). Therefore, examining al-Ghazali's treatment of logic requires understanding of its methodological role rather than viewing it merely as a technical discipline of formal argumentation.

One of al-Ghazali's significant works on logic is *Mi'yar al-'Ilm fi Fann al-Mantiq* (The Criterion of Knowledge in the Science of Logic). Unlike works that treat logic as an independent theoretical discipline, *Mi'yar al-'Ilm* presents it as a means of regulating intellectual activity and establishing standards for sound reasoning. Previous studies indicate that this work was intended to explain methods of thinking, research procedures, and the construction of syllogistic reasoning, demonstrating its close relationship with questions of knowledge and intellectual methodology (Towpek & Salleh, 2016). Consequently, *Mi'yar al-'Ilm* provides an important foundation for exploring how logic functions within al-Ghazali's epistemological framework.

Epistemology concerns not only the nature of knowledge but also the processes, sources, and methods through which knowledge is acquired and justified. In al-Ghazali's thought, knowledge involves multiple dimensions, including rational reflection, revelation,

and spiritual experience. While reason is not regarded as the ultimate source of all knowledge, it remains an essential instrument for organizing human understanding and evaluating arguments. Recent studies on al-Ghazali's epistemology emphasize that rationality occupies a significant position within his intellectual system, although it operates within a broader framework that includes theological and spiritual dimensions, as expressed by Ormsby (1984). This perspective highlights the importance of examining logic not as an isolated discipline but as part of a wider theory of knowledge.

Previous studies have explored various aspects of al-Ghazali's epistemology and logical thought. Some studies focus on the classification of knowledge and the relationship between reason and spirituality in al-Ghazali's intellectual framework (Fadhil & Sebgag, 2021). Other research examines the role of logic in al-Ghazali's theological arguments and intellectual methodology (Marhon, 2020). Studies on *Mi'yar al-'Ilm* have also discussed its objectives, sources, and significance in the development of Islamic logic (Towpek & Salleh, 2016). However, these studies generally examine either al-Ghazali's epistemology broadly or logic as a methodological discipline without specifically analyzing how logical structures function as epistemological instruments in the process of forming, evaluating, and validating knowledge.

This gap indicates the need for a more focused examination of the relationship between mantiq and epistemology in *Mi'yar al-'Ilm*. Rather than treating logic merely as a collection of formal rules, this study argues that al-Ghazali's conception of logic represents a methodological framework that guides the movement of human reasoning from conceptual understanding *(tashawwur),* judgment formation *(tashdiq),* to inferential reasoning *(qiyas)*. Such an approach allows a deeper understanding of how logical procedures contribute to the construction of knowledge within Islamic intellectual tradition.

The novelty of this study lies in positioning *Mi'yar al-'Ilm* as an epistemological text rather than solely a work of logic. By analyzing the relationship between logical concepts and knowledge formation, this research contributes to discussions on the interaction between rational methodology and Islamic epistemology. The theoretical foundation of this study is based on the concept of epistemology as the study of knowledge sources, justification, and validity, combined with al-Ghazali's framework of logical reasoning as presented in *Mi'yar al-'Ilm*.

Based on this background, this study aims to analyze the epistemological function of logic in al-Ghazali's thought through an examination of *Mi'yar al-'Ilm fi Fann al-Mantiq*. Specifically, this research investigates how logical concepts developed by al-Ghazali contribute to the process of forming concepts, establishing judgments, and producing valid conclusions, as well as explaining the position of logic within the broader framework of al-Ghazali's epistemology.

METHODS

The method section should be written systematically, comprehensively, and transparently so that the research procedures can be understood, evaluated, and replicated by other researchers. Authors should present the following five main components.

Research Approach and Design

This study employs a qualitative research approach using library research (library-based research) with a philosophical analysis design. A qualitative approach is appropriate for examining conceptual structures, meanings, and intellectual arguments contained within philosophical texts, as it allows researchers to interpret phenomena through systematic analysis of textual sources (Creswell & Creswell, 2018). Unlike empirical research that focuses on measurable variables or observable behaviors, this study investigates the construction of knowledge and reasoning frameworks within Al-Ghazali's intellectual tradition.

The research design is based on philosophical inquiry, which emphasizes conceptual analysis, interpretation, and examination of relationships among ideas. In qualitative philosophical research, texts are not merely treated as historical documents but as sources of intellectual arguments that require critical interpretation within their broader theoretical context (Denzin & Lincoln, 2017). Therefore, this design is considered appropriate for analyzing the epistemological role of mantiq in *Mi'yar al-'Ilm fi Fann al-Mantiq*.

Research Sources and Selection Strategy

Since this study is a library research study, the research sources consist of primary and secondary literature rather than human participants. The primary source is Al-Ghazali's *Mi'yar al-'Ilm fi Fann al-Mantiq*, which serves as the main text for examining the concepts, structures, and functions of logic in his epistemological framework.

Secondary sources include scholarly books, journal articles, and academic publications discussing Al-Ghazali's philosophy, Islamic epistemology, Aristotelian logic, and the historical development of *mantiq* in Islamic intellectual tradition. The selection of sources was conducted purposively based on their relevance to the research objectives, scholarly credibility, and contribution to understanding the relationship between logic and epistemology. This approach follows the principle of literature research, where sources are selected according to their ability to provide theoretical depth and contextual understanding of the research topic, as explained by Hart (2018).

Data Collection Procedure

Data were collected through documentation techniques by identifying, reading, and categorizing relevant textual materials. The data collection process involved several stages: (1) identifying primary and secondary sources related to Al-Ghazali's logical and epistemological thought; (2) extracting relevant concepts concerning logic, knowledge formation, and reasoning processes; and (3) organizing textual findings according to analytical categories.

The analysis focused particularly on several key concepts discussed in *Mi'yar al-'Ilm*, including tashawwur (conceptualization), tashdiq (judgment), definition, proposition, and qiyas (syllogistic reasoning). These concepts were selected because they represent essential stages in Al-Ghazali's explanation of how human reasoning develops from understanding concepts to producing justified conclusions.

Data Analysis Technique

The collected data were analyzed using descriptive-analytical and interpretative methods. The descriptive stage involved identifying and explaining the concepts of logic presented in *Mi'yar al-'Ilm*. The analytical stage examined the relationship between these logical concepts and broader epistemological questions, particularly regarding the formation, justification, and validation of knowledge.

The interpretative analysis was conducted by placing Al-Ghazali's ideas within the broader context of Islamic intellectual history and epistemological discussions. This process involved comparing interpretations from previous studies and examining how *mantiq* functions not only as a formal system of reasoning but also as a methodological instrument for organizing intellectual inquiry. The analytical procedure follows qualitative data analysis

principles, which emphasize systematic coding, categorization, interpretation, and the development of meaningful relationships among concepts (Miles et al., 2013).

Trustworthiness and Ethical Considerations

To maintain the credibility of interpretation, this study applies source triangulation by comparing Al-Ghazali's primary text with relevant secondary literature. The use of multiple scholarly sources enables a more balanced interpretation and reduces the possibility of relying on a single perspective. In philosophical research, interpretative validity depends on the consistency between textual evidence, analytical reasoning, and theoretical arguments.

Furthermore, this study maintains academic integrity by accurately representing Al-Ghazali's ideas, distinguishing between the author's original arguments and interpretations from previous scholars, and properly acknowledging all referenced sources. The research does not involve human participants; therefore, ethical considerations primarily concern responsible textual interpretation and scholarly citation practices.

RESULTS

This section presents findings from the analysis of *Mi'yar al-'Ilm fi Fann al-Mantiq*, the primary source of this study. The results are organized according to the main research focus, namely the identification of the position of mantiq, the structure of logical reasoning, and the elements involved in the process of knowledge formation in Al-Ghazali's work. The analysis focuses on textual evidence related to key logical concepts, including *taṣawwur* (conceptualization), *taṣdīq* (affirmation), definition (ḥadd), proposition (qaḍiyyah), and syllogism (*qiyās*). The findings are presented descriptively, based on content analysis of the primary text and relevant supporting sources, without theoretical interpretation or comparison with previous studies, which are discussed in the Discussion section.

The Position of Logic as a Methodological Instrument in *Mi'yar al-'Ilm*

The analysis of *Mi'yar al-'Ilm fi Fann al-Mantiq* demonstrates that Al-Ghazali positions logic (*mantiq*) as a methodological instrument for organizing human reasoning and guiding the process of acquiring knowledge. In this work, logic is not presented merely as a technical discipline that discusses the structure of arguments, but as a framework that provides standards for correct intellectual activity.

The findings indicate that the primary function of logic in *Mi'yar al-'Ilm* is to regulate the movement of thought from uncertainty toward justified understanding. Al-Ghazali presents logic as a measure (*mi'yār*) through which the correctness of reasoning can be examined. Therefore, logic functions as a methodological criterion that helps individuals distinguish between valid intellectual processes and forms of reasoning that may lead to error.

This position can be identified from Al-Ghazali's explanation of the objectives of *Mi'yar al-'Ilm*. The work aims to provide guidance regarding reflective thinking (*al-fikr*), analytical examination (*al-naẓar*), and methods of deductive reasoning (*masālik al-aqyisa*) that are required for understanding various fields of knowledge. Thus, the text establishes logic as a foundation for intellectual discipline rather than merely a collection of abstract rules.

The findings also show that Al-Ghazali does not consider logic as an independent source of knowledge. Instead, logic functions as an instrument that organizes the process through which knowledge is obtained and evaluated. The validity of reasoning depends not only on the logical structure but also on the truthfulness and reliability of the premises involved in the reasoning process.

The Structure of Knowledge Formation: *taṣawwur* and *Taṣdīq*

The analysis reveals that Al-Ghazali's explanation of knowledge formation in *Mi'yar al-'Ilm* is structured around two fundamental processes: *taṣawwur* (conceptualization) and *taṣdīq* (affirmation or judgment). These two processes represent the basic stages through which human understanding develops from the recognition of concepts toward the establishment of knowledge claims.

The first stage, *taṣawwur*, refers to the process of forming an understanding of an object or concept. At this stage, knowledge is related to the ability of the human intellect to grasp the meaning and characteristics of something before making any judgment about it. The findings indicate that Al-Ghazali considers conceptual clarity as an essential foundation of knowledge because inaccurate understanding of concepts may result in incorrect reasoning at later stages.

Within this framework, definition (*ḥadd*) becomes an important element in achieving accurate conceptualization. A definition functions to clarify the meaning of a concept and identify its essential characteristics. Therefore, before an individual establishes whether a

statement is true or false, the individual must first understand the concepts contained within that statement.

The second stage, *taṣdīq*, concerns the process of establishing relationships between concepts and forming judgments. Unlike *taṣawwur*, which only involves understanding individual concepts, *taṣdīq* involves determining whether a proposition can be accepted or rejected. The findings demonstrate that Al-Ghazali views judgment formation as a higher stage of knowledge because it requires the connection between previously understood concepts.

Through the distinction between *taṣawwur* and *taṣdīq*, Al-Ghazali presents knowledge acquisition as a systematic process. Knowledge does not emerge directly from isolated information but develops through ordered intellectual activities, beginning with conceptual understanding and continuing toward justified judgment.

The Role of Definition, Proposition, and *Qiyās* in Establishing Knowledge

The analysis further identifies three important components in Al-Ghazali's logical framework: definition (*ḥadd*), proposition (*qaḍiyyah*), and syllogistic reasoning (*qiyās*). These components demonstrate how logic operates as a mechanism for transforming basic understanding into structured knowledge.

Definition functions as the initial instrument for ensuring conceptual precision. Without a clear definition, reasoning may involve ambiguous terms that create errors in the process of judgment. Therefore, Al-Ghazali places emphasis on the importance of establishing clear meanings before conducting further intellectual analysis.

The second component is proposition, which represents the relationship between concepts expressed in a statement. Through propositions, individuals make judgments regarding the connection between subjects and predicates. The analysis shows that propositions become the foundation for determining whether a statement can be considered acceptable within a reasoning process.

The third component is *qiyās* or syllogistic reasoning. The findings indicate that *qiyās* represents the mechanism through which conclusions are derived from established premises. A syllogism consists of premises (*muqaddimāt*) and a conclusion (*natījah*), where the relationship between them determines whether a conclusion follows logically.

In *Mi'yar al-'Ilm*, *qiyās* is not only understood as a formal structure of argument but also as a method for obtaining knowledge. Through syllogistic reasoning, the intellect moves from what is already known toward what was previously unknown. Therefore, *qiyās* represents an important stage in the transformation of information into justified knowledge.

Logic as an Instrument for Distinguishing Valid and Invalid Reasoning

The final finding concerns the function of logic as a standard for distinguishing between correct and incorrect reasoning. The analysis demonstrates that Al-Ghazali understands logical rules as a means of preventing intellectual errors that may occur due to unclear concepts, inaccurate premises, or invalid connections between statements.

The findings indicate that errors in reasoning may arise from several factors, including the failure to define concepts accurately, the use of unsupported premises, and the inability to establish a necessary relationship between premises and conclusions. Therefore, mastery of logical principles becomes necessary to ensure that reasoning follows a valid structure.

Logic consequently functions as a form of intellectual control mechanism. It does not create knowledge independently but provides criteria for evaluating whether a process of reasoning is acceptable. In this sense, logic contributes to epistemology by establishing conditions under which knowledge claims can be considered properly formed and justified.

The analysis confirms that the epistemological function of *mantiq* in *Mi'yar al-'Ilm* can be understood through three interconnected roles: organizing concepts, regulating judgments, and validating inference. These findings demonstrate that Al-Ghazali's treatment of logic represents a systematic approach to knowledge formation within Islamic intellectual tradition.

DISCUSSION

The findings of this study provide a basis for understanding the epistemological role of logic (*mantiq*) in Al-Ghazali's *Mi'yar al-'Ilm fi Fann al-Mantiq*. This section critically interprets the findings by examining the meaning and implications of Al-Ghazali's conception of logic within the broader framework of knowledge formation, reasoning, and intellectual inquiry. Rather than treating logic merely as a formal system of argumentation,

the discussion explores how *mantiq* functions as a methodological framework that guides the acquisition, evaluation, and validation of knowledge.

The discussion further connects the findings with previous studies on Al-Ghazali's intellectual tradition, Islamic epistemology, and the historical development of logic in Muslim scholarship. Through this approach, the study examines the position of *Mi'yar al-'Ilm* not only as a work on logical techniques but also as an epistemological text that reflects Al-Ghazali's understanding of the relationship between reason, certainty, and knowledge. The following discussion highlights the theoretical contribution of this study by demonstrating how logic operates as an instrument that connects rational methodology with broader dimensions of Islamic intellectual tradition.

Logic (Mantiq) as an Epistemological Method, Not Merely a Formal Discipline

The history of intellectual traditions demonstrates that logic has rarely functioned only as a technical system of argument structures; rather, it has often served as a framework for determining how human beings construct and evaluate knowledge. Within Islamic intellectual history, the development of *mantiq* reflects an ongoing engagement between rational methods, theological concerns, and epistemological questions. Al-Ghazali's engagement with logic represents one of the most significant examples of this intellectual transformation, as he incorporated logical methods into Islamic scholarship while maintaining critical boundaries toward certain philosophical assumptions (Adamson, 2016; Gutas, 2014). His treatment of logic in *Mi'yar al-'Ilm* therefore should not be interpreted merely as an adoption of Aristotelian formal reasoning, but as an attempt to establish methodological standards for intellectual inquiry (Griffel, 2009). This perspective allows logic to be understood as an epistemological instrument concerned with the conditions through which knowledge can be properly formed and justified.

The findings of this study show that Al-Ghazali presents *mantiq* as a criterion (*mi'yār*) for regulating human reasoning rather than as an independent source of knowledge. The concept of a "measure" embedded in the title *Mi'yar al-'Ilm* reflects the function of logic as a standard for evaluating whether intellectual processes follow correct principles. In this context, logic operates before the final production of knowledge because it determines how concepts are clarified, propositions are constructed, and conclusions are derived. Günther (2025) explains that *Mi'yar al-'Ilm* was designed to provide guidance regarding reflective thinking (*fikr*), analytical examination (*naẓar*), and deductive reasoning (*aqyās*), demonstrating

its methodological orientation rather than merely its formal logical content. Therefore, Al-Ghazali's logic can be understood as a discipline that structures the pathway toward knowledge acquisition.

This understanding also challenges the assumption that logic functions only within abstract philosophical discussions detached from practical intellectual activities. For Al-Ghazali, logical reasoning provides a framework for preventing errors that emerge from unclear concepts, unsupported assumptions, or invalid relationships between premises and conclusions. The role of logic is consequently epistemological because it addresses the reliability of the reasoning process itself, not simply the external form of arguments. As Kukkonen (2019) notes, Al-Ghazali's intellectual framework emphasizes the importance of examining the methods through which knowledge claims become justified and reliable. Thus, logic serves as a methodological foundation that supports the pursuit of certainty (*yaqīn*) while remaining dependent on the validity of the premises being examined.

Furthermore, Al-Ghazali's use of logic reflects a process of intellectual adaptation rather than simple transmission of Greek philosophical methods. The reception of Aristotelian logic within Islamic scholarship involved reinterpretation and integration into different fields, including theology, jurisprudence, and broader theories of knowledge (El-Rouayheb, 2019). In *Mi'yar al-'Ilm*, logical structures are employed as tools for scholarly reasoning without requiring acceptance of all philosophical doctrines associated with Greek thinkers. Towpek and Salleh (2016) emphasize that *Mi'yar al-'Ilm* occupies an important position in explaining the objectives and methodological significance of logic within Al-Ghazali's intellectual project. This demonstrates that logic became a shared methodological language that could function within Islamic intellectual traditions while being reshaped according to their epistemological concerns.

The epistemological interpretation of Al-Ghazali's logic also reveals a balanced relationship between rational inquiry and broader dimensions of knowledge. Although logic provides methods for achieving disciplined reasoning, Al-Ghazali does not reduce all forms of knowledge to formal demonstration alone. Günther (2025) highlights that Al-Ghazali combined rational approaches for attaining certainty with spiritual dimensions of learning, showing that logical reasoning occupied an important but not exclusive position within his epistemology. This position differs from both extremes: rejecting rational methods entirely or considering rational logic as the only path to truth. Instead, logic functions as a necessary

instrument that prepares and guides the intellect within a wider framework of knowledge acquisition.

Based on this discussion, the role of *mantiq* in *Mi'yar al-'Ilm* can be interpreted as an epistemological method that organizes the human search for knowledge. Al-Ghazali's contribution lies not only in preserving logical techniques but also in redefining their purpose within Islamic intellectual discourse. Logic becomes a means for achieving conceptual clarity, evaluating arguments, and ensuring the coherence of reasoning processes. This interpretation expands the understanding of *Mi'yar al-'Ilm* from a technical manual of logic into an epistemological work concerned with how knowledge is constructed and validated. Therefore, Al-Ghazali's approach demonstrates that logic is neither merely a formal discipline nor an absolute source of truth, but a methodological instrument that enables disciplined intellectual inquiry.

Knowledge Formation Through *taṣawwur* and *Taṣdīq*: The Logical Structure of Al-Ghazali's Epistemology

Knowledge does not emerge simply from possessing information, but from a structured process of understanding, evaluating, and justifying concepts. This principle is of central concern in epistemological discussions, including within Al-Ghazali's intellectual framework. The analysis of *Mi'yar al-'Ilm* reveals that Al-Ghazali conceptualizes knowledge formation through two fundamental processes: *taṣawwur* (conceptualization) and *taṣdīq* (affirmation). Rather than viewing knowledge as an immediate intellectual possession, Al-Ghazali presents it as a gradual process that requires conceptual clarity and rational verification (Guenther, 2024). Therefore, the distinction between *taṣawwur* and *taṣdīq* provides an important foundation for understanding the logical structure of his epistemology.

The first stage, *taṣawwur*, demonstrates that knowledge begins with the accurate apprehension of concepts before any judgment can be established. This emphasis on conceptual formation suggests that errors in reasoning may stem from misunderstandings of the objects under discussion rather than merely from incorrect conclusions. Al-Ghazali's attention to definition (ḥadd) reflects his view that intellectual inquiry requires precision in identifying meanings and essential characteristics of things. In this sense, conceptual clarity becomes an epistemological requirement because a judgment cannot be considered valid when the concepts involved remain ambiguous (Griffel, 2009). This approach corresponds

with broader philosophical discussions concerning the relationship between concepts and knowledge formation, where understanding the meaning of an object precedes the evaluation of propositions (Adamson, 2016).

The transition from *taṣawwur* to *taṣdīq* moves from understanding individual concepts to establishing meaningful relationships between them. In Al-Ghazali's framework, knowledge is not complete through conceptual recognition alone, because intellectual certainty requires the ability to affirm or deny a relationship between concepts. This process demonstrates that human reasoning involves not only perception but also judgment, evaluation, and justification. Griffel (2009) argues that Al-Ghazali's epistemological framework reflects a complex interaction between rational analysis and broader theological considerations, where reasoning plays an important role in organizing human understanding. Consequently, *taṣdīq* marks the point at which conceptual knowledge becomes justified knowledge through intellectual assessment.

The relationship between *taṣawwur* and *taṣdīq* also reveals Al-Ghazali's systematic understanding of how rational knowledge is constructed. Knowledge claims require a foundation of well-understood concepts before they can be tested through logical reasoning. This perspective explains why Al-Ghazali places definition and logical analysis as necessary components in scholarly inquiry rather than optional intellectual exercises. Studies on *Mi'yar al-'Ilm* indicate that the work was designed to explain methods of thinking and reasoning, particularly for establishing disciplined intellectual practices within Islamic scholarship (Towpek & Salleh, 2016). Thus, the structure of *taṣawwur* and *taṣdīq* demonstrates that Al-Ghazali viewed epistemology as a process involving both cognitive preparation and rational validation.

Furthermore, the distinction between *taṣawwur* and *taṣdīq* reflects Al-Ghazali's engagement with the broader Aristotelian and Avicennian logical tradition while adapting it to Islamic intellectual contexts. The conceptual structure of knowledge found in his works shows the influence of earlier logical traditions, but Al-Ghazali transformed these ideas according to his own methodological objectives (El-Rouayheb, 2019; Gutas, 2014). Logic was therefore not adopted merely as a foreign intellectual system but integrated into a framework concerned with the pursuit of reliable knowledge. Guenther (2024) emphasizes that Al-Ghazali regarded logical methods as instruments that assist learning and reasoning, particularly through the organization of concepts and arguments. This integration

demonstrates that Al-Ghazali's logic represents a creative development within Islamic epistemological discourse.

The discussion above indicates that *taṣawwur* and *taṣdīq* are not merely technical categories in logical theory but represent the basic structure through which Al-Ghazali explains the formation of knowledge. By distinguishing between conceptual understanding and judgment formation, Al-Ghazali provides a systematic account of how the intellect moves from initial awareness toward justified cognition. This framework strengthens the interpretation that *Mi'yar al-'Ilm* is not only a work on formal logic but also an epistemological text concerned with the conditions of knowing. As Bakar (1998) explains in discussions of Islamic epistemology, classical Muslim thinkers often distinguished between different modes and processes of knowledge acquisition rather than reducing knowledge to a single method. Therefore, Al-Ghazali's distinction between *taṣawwur* and *taṣdīq* highlights a sophisticated epistemological model in which logical reasoning bridges human understanding and justified knowledge.

Definition (Ḥadd) and *Qiyās* as Mechanisms of Knowledge Validation

The pursuit of knowledge requires not only the ability to generate ideas but also the capacity to determine whether those ideas are accurately understood and logically justified. In this context, Al-Ghazali's discussion of definition (*ḥadd*) and syllogistic reasoning (*qiyās*) in *Mi'yar al-'Ilm* demonstrates that logical methods serve as mechanisms for validating intellectual claims. Logic does not merely organize arguments after knowledge has been obtained; rather, it establishes the conditions through which knowledge can be considered reliable. The importance of this process reflects a broader concern within Islamic philosophy regarding the relationship between conceptual precision, rational demonstration, and certainty (*yaqīn*) (Black, 1990; McGinnis, 2010). Therefore, *ḥadd* and *qiyās* represent two interconnected dimensions through which Al-Ghazali explains how human reasoning moves toward justified knowledge.

The role of *ḥadd* in Al-Ghazali's epistemological framework demonstrates that valid reasoning begins with accurate conceptual understanding. A judgment cannot be evaluated properly if the terms involved remain unclear or carry ambiguous meanings. In *Mi'yar al-'Ilm*, definitions function as instruments for identifying the essential characteristics of an object and preventing conceptual confusion during intellectual inquiry (Al-Ghazali & Nafis, 2024). This emphasis on definition reflects Al-Ghazali's awareness that many errors in reasoning

originate before the process of argumentation itself. Guenther (2024) explains that Al-Ghazali regarded definition as one of the fundamental rational constructs through which scholars distinguish correct understanding from mistaken perception. Thus, *ḥadd* serves as an epistemological foundation that prepares concepts for further examination through logical reasoning.

Beyond conceptual clarification, Al-Ghazali places significant importance on *qiyās* as a method for deriving conclusions from established premises. Syllogistic reasoning allows the intellect to move from known premises toward previously unknown conclusions through a structured process of inference. This mechanism demonstrates that knowledge acquisition requires more than intuition or accumulation of information; it requires a valid relationship between premises and conclusions. Classical studies of Islamic logic have shown that Muslim philosophers and theologians developed syllogistic methods as tools for establishing demonstrative knowledge while adapting Aristotelian structures to Islamic intellectual contexts (Gutas, 2014; Street, 2004). In Al-Ghazali's case, *qiyās* becomes a methodological instrument for examining whether a conclusion follows necessarily from its foundations.

The epistemological significance of *qiyās* in Al-Ghazali's thought can be further understood through its relationship with certainty. For Al-Ghazali, not every argument that appears logical necessarily produces reliable knowledge, because the quality of conclusions depends on the validity of premises and the correctness of their arrangement (Rizza et al., 2026). This distinction indicates that formal reasoning alone is insufficient without epistemic evaluation of the materials involved in reasoning. Marmura (1965) highlights that Al-Ghazali's understanding of demonstrative reasoning was closely connected with the question of how certainty can be achieved through properly structured arguments. Therefore, *qiyās* functions not simply as a method of deduction but as a framework for evaluating the reliability of knowledge claims.

Furthermore, Al-Ghazali's treatment of *ḥadd* and *qiyās* reflects his broader engagement with earlier logical traditions while simultaneously adapting them to Islamic scholarly needs. Research on Arabic logic demonstrates that thinkers such as Ibn Sina and later Muslim scholars developed logical theories that extended beyond Greek formulations by incorporating them into theological, legal, and scientific discussions (El-Rouayheb, 2019; Janssens, 2002). Al-Ghazali's *Mi'yar al-'Ilm* represents part of this intellectual process, where logical methods were transformed into instruments for scholarly investigation. Towpek &

Salleh (2016) emphasize that the work was intended to provide methodological guidance for understanding and applying logical reasoning. This adaptation shows that Al-Ghazali's logic was not merely inherited but reconstructed according to epistemological objectives.

The discussion above indicates that *ḥadd* and *qiyās* constitute essential mechanisms in Al-Ghazali's account of knowledge validation. Through definition, the intellect obtains conceptual accuracy, while through syllogistic reasoning, it establishes justified connections between propositions and conclusions. Together, these elements reveal that logic functions as a discipline of intellectual control that prevents error and strengthens the reliability of knowledge. Nasr (2006) notes that Al-Ghazali's engagement with logic should be understood within the broader development of Islamic intellectual methods, where reasoning became a central instrument for scholarly inquiry. Consequently, *Mi'yar al-'Ilm* demonstrates that logical methodology is not limited to formal argumentation but represents a systematic approach for evaluating how knowledge becomes valid and trustworthy.

The Relationship Between Rational Reasoning and Spiritual Knowledge: The Scope and Limitation of Logic in Al-Ghazali's Epistemology

The relationship between reason and spiritual experience represents one of the most distinctive features of Al-Ghazali's epistemological framework. Unlike approaches that place rational demonstration as the only pathway toward truth, Al-Ghazali develops a more comprehensive understanding of knowledge that incorporates both intellectual reasoning and spiritual realization. His acceptance of logic does not indicate that all forms of knowledge can be reduced to formal rational processes. Instead, logic occupies a specific position within a broader hierarchy of knowledge that includes rational investigation, revelation, and experiential understanding (Griffel, 2009; Ormsby, 1984). Therefore, examining the scope and limitation of logic is essential for understanding the complete structure of Al-Ghazali's epistemology.

The findings from *Mi'yar al-'Ilm* demonstrate that logic provides methodological discipline for human reasoning, but it does not function as the ultimate source of all knowledge. Logical methods are valuable because they help the intellect avoid errors, organize concepts, and establish valid arguments. However, Al-Ghazali distinguishes between the certainty achieved through rational demonstration and other forms of knowledge that emerge through spiritual transformation and direct experience. In *Al-Munqidh min al-Ḍalāl*, Al-Ghazali & Nafis (2024) describes his intellectual journey as involving

an examination of various methods of knowing, including philosophical reasoning and mystical experience. This distinction indicates that logic serves an important but limited role within his wider epistemological system.

Al-Ghazali's position does not represent a rejection of rational inquiry, but rather an attempt to establish the appropriate boundaries of reason. Rational reasoning remains necessary because human beings require intellectual tools to examine concepts, construct arguments, and distinguish valid claims from invalid ones. Nevertheless, reason alone cannot address every dimension of human knowledge, particularly questions related to spiritual certainty and ultimate understanding. Treiger (2012) explains that Al-Ghazali's epistemology involves an interaction between rational analysis and experiential knowledge, where each mode of knowing addresses different aspects of intellectual inquiry. Consequently, logic functions as a foundation for disciplined reasoning while remaining part of a larger epistemological framework.

This balanced position also explains why Al-Ghazali could employ Aristotelian logic while criticizing certain philosophical conclusions derived from it. His engagement with Greek philosophy was selective: he accepted logical methods because they provided reliable procedures for reasoning, but he did not accept every metaphysical assumption associated with philosophers (Adamson, 2016; Gutas, 2014). Guenther (2024) emphasizes that Al-Ghazali considered logic a means of learning and intellectual preparation rather than a complete worldview. Thus, the adoption of logic in *Mi'yar al-'Ilm* should be understood as a methodological integration rather than philosophical submission.

Furthermore, the relationship between rational reasoning and spiritual knowledge reveals that Al-Ghazali's epistemology operates through different levels of certainty. Formal reasoning contributes to achieving demonstrative knowledge (*burhān*) by ensuring coherence between premises and conclusions. However, spiritual knowledge involves a different dimension of certainty associated with inner transformation and direct awareness. Frank (1992) argues that Al-Ghazali's intellectual system cannot be adequately understood through a simple opposition between reason and mysticism because both dimensions interact within his search for certainty. This perspective demonstrates that logic remains significant, but its function must be interpreted within the wider structure of Al-Ghazali's theory of knowledge.

Based on this discussion, the position of logic in Al-Ghazali's epistemology can be understood as a mediating instrument between human reasoning and the broader pursuit of

truth. Logic provides the intellectual discipline required for conceptual clarity, argument evaluation, and rational demonstration, while spiritual dimensions address forms of knowledge that exceed formal reasoning. Griffel (2009) highlights that Al-Ghazali's philosophical theology reflects an effort to integrate rational inquiry with theological and spiritual concerns rather than separating them completely. Therefore, *Mi'yar al-'Ilm* represents not only an affirmation of logical methodology but also an acknowledgment of its proper scope and limitations. Al-Ghazali's contribution lies in demonstrating that reason and spirituality are not necessarily opposing forces, but complementary dimensions within the pursuit of knowledge.

Repositioning *Mi'yar al-'Ilm* as an Epistemological Work within Islamic Intellectual Tradition

The study of classical Islamic intellectual works requires attention not only to the content of individual disciplines but also to the broader intellectual purposes underlying those disciplines. Within this perspective, *Mi'yar al-'Ilm* should not be understood merely as a technical manual explaining logical procedures, because its discussion of reasoning is closely connected with questions concerning how human beings acquire, organize, and validate knowledge. Al-Ghazali's treatment of logic reflects a broader intellectual project in which rational methods are placed within a comprehensive framework of knowledge formation. This approach corresponds with studies of Islamic philosophy that emphasize the interconnected relationship between logic, epistemology, and the classification of knowledge in Muslim intellectual traditions (Bakar, 1998; Nasr, 2006). Therefore, repositioning *Mi'yar al-'Ilm* as an epistemological work provides a more comprehensive understanding of its intellectual significance.

The first contribution of this reinterpretation concerns the role of logic as an epistemological method. In *Mi'yar al-'Ilm*, logic functions as a methodological framework that regulates the activities of the intellect rather than merely presenting formal rules of argumentation. The logical structures Al-Ghazali discusses provide procedures for achieving conceptual accuracy, organizing reasoning, and evaluating intellectual conclusions (Al-Ghazali, 2011). This perspective aligns with broader discussions in Islamic philosophy, where logic was considered an essential instrument for scientific inquiry and intellectual discipline rather than an isolated theoretical field (Black, 1990; McGinnis, 2010). Consequently, the significance of logic in Al-Ghazali's work lies in its capacity to guide the process of knowing.

The second contribution relates to the relationship between logic and knowledge formation. The distinction between *taṣawwur* and *taṣdīq* shows that Al-Ghazali conceptualizes knowledge as a structured intellectual process with distinct stages of cognition. This framework indicates that knowledge requires the apprehension of concepts and the establishment of justified relationships between them, who reflects a broader epistemological concern in Islamic philosophy: how the human intellect moves from perception toward certainty (Wisnovsky, 2003). Thus, *Mi'yar al-'Ilm* contributes to epistemological discussions by explaining the internal mechanisms through which human understanding develops.

The third contribution involves the role of logical validation within the broader structure of Islamic intellectual tradition. Through definition, proposition, and *qiyās*, Al-Ghazali presents reasoning as a controlled process in which knowledge claims must satisfy certain conditions before being accepted. The importance of logical validation also appears in the development of Arabic logic, where Muslim thinkers expanded Aristotelian methods and integrated them into theological, philosophical, and scientific discussions (Janssens, 2002). Therefore, Al-Ghazali's logical framework represents not only a continuation of previous traditions but also an adaptation of those traditions according to Islamic epistemological objectives.

However, understanding *Mi'yar al-'Ilm* only through rational methodology would provide an incomplete picture of Al-Ghazali's epistemology. His intellectual framework recognizes that rational reasoning, although necessary, exists alongside other dimensions of knowledge, including revelation and spiritual experience. In his broader works, Al-Ghazali distinguishes between knowledge achieved through rational demonstration and knowledge associated with deeper spiritual realization (*Al-Ghazali*, 2005; Frank, 1992). This relationship demonstrates that logic occupies an important but limited position within his epistemological hierarchy. Rather than opposing reason and spirituality, Al-Ghazali integrates them as complementary dimensions in the pursuit of certainty (Treiger, 2012).

To synthesize the findings and theoretical discussions above, this study proposes a conceptual framework that represents the epistemological function of logic in Al-Ghazali's *Mi'yar al-'Ilm*. The conceptual structure is presented as follows:

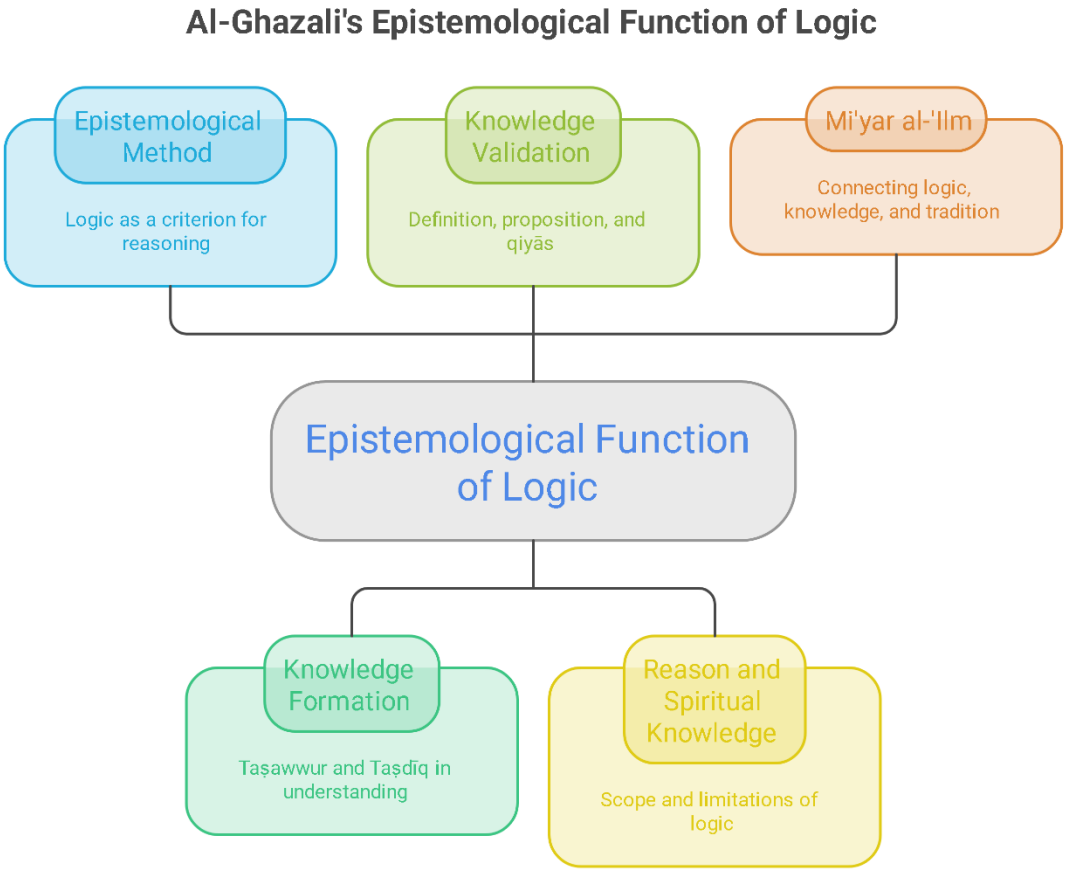


Figure 1. Conceptual Framework Illustrating the Epistemological Function of Logic (*Mantiq*) in Al-Ghazali's *Mi'yar al-'Ilm*

The framework demonstrates that the epistemological function of logic consists of several interconnected dimensions. The first dimension positions logic as an epistemological method in which reasoning is regulated by systematic principles. The second dimension explains knowledge formation through *taṣawwur* and *taṣdīq*, showing the movement from conceptual understanding toward justified judgment. The third dimension highlights knowledge validation through definition, proposition, and *qiyās*, while the fourth dimension places logic within a broader relationship between rational reasoning and spiritual knowledge. Finally, *Mi'yar al-'Ilm* emerges as a bridge connecting logical methodology with the wider Islamic intellectual tradition, demonstrating that logic functions not merely as a formal discipline but as an epistemological framework for understanding how knowledge is constructed and validated.

CONCLUSION

This study concludes that logic (mantiq) in Al-Ghazali's *Mi'yar al-'Ilm fi Fann al-Mantiq* functions not merely as a formal system of argumentation but as an epistemological method that regulates the process of knowledge acquisition and validation. The analysis demonstrates that Al-Ghazali understands logical reasoning as a structured process involving conceptual formation (*taṣawwur*), judgment (*taṣdīq*), and inferential reasoning (*qiyās*). Through these processes, logic provides standards for achieving conceptual clarity, establishing valid relationships between concepts, and evaluating the reliability of conclusions. However, logic is not positioned as the sole source of knowledge, as it operates within a broader epistemological framework that also recognizes spiritual and revelatory dimensions of knowing. Therefore, the study highlights that Al-Ghazali presents logic as a methodological instrument that supports, rather than replaces, the wider pursuit of knowledge.

This study contributes to the field of Islamic intellectual studies by repositioning *Mi'yar al-'Ilm* as an epistemological work rather than merely a textbook of logical principles. The research expands the understanding of Al-Ghazali's logical thought by demonstrating how logical methodology is connected with broader questions concerning the formation, justification, and validation of knowledge. Theoretically, this study contributes to discussions on Islamic epistemology by illustrating the integration between rational reasoning and other dimensions of knowledge within Al-Ghazali's framework. Methodologically, the study demonstrates the value of philosophical textual analysis in examining classical intellectual works as dynamic frameworks of thought rather than historical documents alone. This contribution remains within the scope of a conceptual analysis of *Mi'yar al-'Ilm* and does not claim to represent all dimensions of Al-Ghazali's epistemological system.

Future research may expand this study by conducting comparative analyses between Al-Ghazali's logical epistemology and other Muslim philosophers, such as Ibn Sina, Al-Farabi, or later scholars in the Arabic logical tradition. Further studies may also examine how Al-Ghazali's conception of logic influenced subsequent developments in Islamic education, theology, and scientific methodology. In addition, future research could employ broader textual approaches by analyzing other works of Al-Ghazali, including *Tahāfut al-Falāsifah*, *Iḥyā' 'Ulūm al-Dīn*, and *Al-Munqidh min al-Ḍalāl*, to explore the relationship between rational reasoning, spiritual experience, and certainty in greater depth.

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