

The Relationship between Critical Thinking and Logic: Its Importance for Islamic Learners

Shaikha Hamad Mohammed Alkubaisi

Comparative Religions and Dialogue of Civilizations, College of Sharia, Qatar University

Email: shaikha.al-kubaisi@qu.edu.qa

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Abstract

This study delves into the intrinsic relationship between critical thinking and logic, elucidating their reciprocal influence and underscoring their pivotal roles in the academic journey of Islamic learners grappling with issues of creed, jurisprudence, and various subjects. Widespread confusion and the failure to distinguish between these terms impede student progress, especially in Islamic sciences, where critical thinking is indispensable for formulating questions at both general and granular levels. The introduction of logic without a concurrent emphasis on critical thinking restricts the scope of exploration, potentially overlooking nuanced details that are foundational to the studied issues. Adopting a descriptive-analytical approach, the researcher advocates for a meticulous analysis of matters in intricate detail, stressing the discipline-specific nuances inherent in each field of study. The study's results affirm an intrinsic interdependence between critical and logical thinking. Critical thinking enriches the ability to discern between valid logic and logical fallacies, fostering a more nuanced understanding of complex issues. Conversely, logic is a scaffold for critical thinking, particularly in logical reasoning and interpretation processes. This research paper serves as an initial exploration, providing valuable insights for education, planning, legislation, and law professionals. It lays the groundwork for a comprehensive understanding of the symbiotic relationship between critical thinking and logic, encouraging further, more detailed studies in this vital intersection. Integrating critical thinking and logic emerges as a fundamental aspect of academic pursuits, promoting a holistic and nuanced approach to problem-solving and decision-making.

Keywords: Thinking, Critical, Logic, Creed, Islamic Knowledge

Introduction

The Islamic religion fundamentally relies on transmission based on the fixed religious texts in the Holy Quran and the Sunnah. However, this never negates the role of reason in judging newly arising matters and responding to doubts raised by enemies of Islam.

The ability to engage in critical thinking and employ logic are essential tools that help us understand the world around us and make appropriate decisions. Critical thinking is a rigorous process requiring precise evaluation and deep analysis of ideas and concepts, while logic guides us to follow logical chains of thought based on preconceptions about the issue. It

is well-known that the use of both requires continuous practice and learning, as these crucial abilities can impact various aspects of our lives, whether in academia, the professional realm, or personal matters.

However, distinguishing between these terms and studying the relationship between them constitutes an important aspect of knowledge in any field. The significance of this research lies for the Islamic scholar and any researcher or practitioner in the fields of thinking and deduction. This is because the terms "critical thinking" and "logic" are intertwined, leading to much confusion. Some rely on personal laws that do not conform to the scientific method, passing judgment based on personal whims rather than the elucidation of truth. Others depend on superficial information and weak analysis when making decisions, resulting in inaccurate conclusions and misguided interpretations.

This is particularly critical given the vast array of doubts and suspicions attached to Islamic creed, with Islam itself being unjustly implicated. Additionally, external influences such as media and social media have complicated the current landscape, making it challenging to distinguish between facts and opinions, and discerning between accurate and misleading information.

The logic directs humans toward judging their surroundings based on preconceived notions about various issues, making this judgment closer to error than to correctness. This necessitates that the Islamic scholar seeks new mechanisms to govern their reasoning in various matters. Here lies the dilemma in establishing the relationship between critical thinking and logic and employing them when deducing legal judgments and rules. The importance of this lies in providing new insights into facts for interpretation and judgment, using multiple mechanisms that collectively lead to the most accurate judgment.

To clarify these concepts, the researcher will progressively explain them in the following lines, starting with defining some meanings before delving into more detailed explanations. Thinking has two meanings: a general one that includes all thoughts, images, and imaginations in the mind, and a specific one referring to the mental process of solving a problem or achieving a goal through one or more operations (Sheeha, 2004). "The AI-Atoum defined is as a cognitive activity that works on giving environmental stimuli meaning and significance through the cognitive environment to help adapt and harmonize with environmental conditions (Al-Atoum, et al., 2009)."

Critical thinking, as defined by John Dewey, is contemplative thinking. It involves considering an act that is reflective, persistent, and cautious about a belief or assumption of a type of knowledge considering a supporting rule and an inference resulting from it (Fashr, 2009). As for logic, it is defined as mental rules that aid in conceiving and reasoning correctly (Nahar, 2016). Upon reading these definitions, we can observe the extent of the overlap between the terms under investigation and study.

Literature Review

Critical Thinking

Critical thinking is a relatively recent term that is considered a valuable and essential life skill. It applies to various aspects of life, whether deciding on the type of toothpaste to use, selecting stocks to buy, determining actions to pursue, attending specific courses, voting for a candidate, supporting a particular issue, or endorsing/rejecting certain reports or claims. However, one of the most crucial applications of critical thinking is its utilization in the analysis and logical synthesis of ideas. (Waller, 1988)

Critical thinking has been defined in various ways. John Dewey termed it contemplative thinking, emphasizing it as a reflective, persistent, and cautious consideration of beliefs or assumptions considering supporting rules and resulting inferences (Fashr, 2009). The book "Critical Thinking: A Theoretical Study and Applications - Arabic and International Perspectives" by Mohamed Abdel Salam (2020) references Sorour (2000), defining critical thinking as the ability to evaluate information, examine opinions, considering various perspectives on the subject under investigation. Saada (2003) views critical thinking as the understanding of diverse fields, verification of multiple fallacies, differentiation between assumptions and final results, and the ability to separate relevant from irrelevant information. Mustafa (2011) defines it as the individual's ability to express a supporting or opposing opinion in different situations while providing compelling reasons for each viewpoint. Nassar (2009) characterizes it as a thinking style where an individual demonstrates the ability to evaluate a problem or situation by organizing evidence and arguments, predicting the correct solution, deducing information that aids in interpreting the solution, and making objective decisions free from bias and personal factors. Anis (1985) describes it as a type of reasonable contemplative thinking that requires forming a specific belief about an event or situation, incorporating hypotheses, questions, alternatives, and experimentation (Abdel Salam, 2020).

Critical thinking has engaged people since ancient times, leading them to seek ways to educate it. Socrates initiated this inquiry over two thousand years ago. Many consider John Dewey, who is an American philosopher and scholar, as the father of contemporary critical thinking. Edward Glaser, who participated in the development of many widely used critical thinking tests, built his definition on John Dewey's. Glaser defined critical thinking as follows: the inclination to think deeply about problems and topics within one's field of expertise, using a logical approach to asking and justifying questions, along with some skill in applying this approach. Critical thinking calls for continuous effort to examine any belief or assumed form of knowledge considering supporting evidence and resulting inferences (Fashr, 2009).

The significance of critical thinking is highlighted in various issues, particularly in education. Educators and psychologists have shown considerable interest in recent decades, considering it a key element to ensure effective cognitive development. This allows individuals to utilize their mental capacities to interact positively with their environment, face life conditions where interests overlap, demands increase, success is achieved, and adapt to the challenges of life. Critical thinking skills are essential for every individual in society. Those who engage in issuing religious edicts and responding to doubts about the religion of God undoubtedly need these skills, and group requires a greater understanding of critical thinking. Most experimental studies, using programs and experiences to develop these thinking skills, have demonstrated their effectiveness.

The critical thinking process typically relies on five components. If one is missing, the process does not occur correctly, as each has a close connection to the others. These components are

Cognitive Base

Refers to all the individual's knowledge, beliefs, and values. These are the information and assumptions the individual knows and believes in, essential for creating a sense of contradiction.

External Events: These are stimuli that provoke a sense of contradiction. Their effectiveness as stimuli for critical thinking depends on the individual's cognitive growth level, and they vary

in clarity, from being explicit to vague and complex.

Personal Theory

The personal theory is the individual's personal perspective derived from the cognitive base, forming a distinctive character or a personal point of view. Additionally, it is the framework used to attempt an interpretation of external events. The sense of contradiction or disparity begins with a worried look, followed by seeking knowledge sources. The perception of this contradiction is stimulated by motivating factors and is determined by the personal perspective, considered a variable mediator that sets the stage for the subsequent steps of critical thinking.

Feeling of Contradiction or Disparity

This feeling starts with a concerned look and concludes with searching for knowledge sources. The perception of contradiction is aroused by motivating factors and is determined by the personal perspective, and it is considered a variable mediator with subsequent steps of critical thinking depending on it.

Resolving the Contradiction

This stage encompasses all the aspects of critical thinking, where the individual seeks to resolve the contradiction through various steps. Thus, this stage forms the basis of the critical thinking structure. From the above, we can see that the process of critical thinking relies on essential components that only come together, and each has an interactive relationship with the others. The cognitive base is crucial for creating a sense of contradiction, external events act as stimuli for perceiving this contradiction, and the personal perspective provides the context for interpreting external events. The feeling of contradiction or disparity is then a result of this interplay, leading to the resolution of the contradiction (Al-Otaibi, 2007).

With these components, critical thinking possesses several characteristics that set it apart from other forms of thinking. As highlighted by Al-Halqi, Al-Lazam, Al-Zu'bi, and Sa'ada in a research paper prepared by students Shumari and Al-Rashid (2021), critical thinking is a cognitive process primarily based on clear information, various skills, and established facts during the discussion of the subject around which the dialogue revolves. Critical thinking also emphasizes accepting the viewpoints of others and considering them to obtain satisfactory results. In addition, it involves providing an argumentative style during the dialogue to reach a specific conclusion or standard in a statement or proposal supported by evidence. In this way, critical thinking is a positive, creative activity, a process rather than just a result. The expression of critical thinking changes with the context in which it appears. It is considered both an emotional and rational activity, representing a skill that is subject to development (Shumari & Al-Rashid, 2021; Ahmed et al., 2023b; Ahmed et al., 2021; 2021a; Alsharif et al., 2021c, 2022).

Critical thinking skills are diverse, and various sources generally agree on the most important ones. These skills include the ability to think independently of others, the skill of determining the credibility of information sources, the ability to avoid common errors in critical thinking, precision in wording and expressions, the development of detailed and thorough observation skills, the skill of exploring multiple alternatives for a single situation, and the ability to handle flexibility and challenge (Abdul Aziz, 2013).

The critical thinker is characterized by being open-minded to new ideas, refraining from

arguing about what they do not know, asking questions about anything unfamiliar, distinguishing between emotional and logical thinking, being constant in reflection and observation, discovering alternatives, avoiding errors in analyzing a situation or making a decision, knowing when additional information is needed for a particular topic, distinguishing between a true result and one that should be otherwise, and striving for precision in both verbal and non-verbal expressions (Abdul Aziz, 2013; Ahmed et al., 2022d; Halsharif 2020; 2021a; 2021b).

Logic

In reality, no one precisely knows the historical origins of logic, and there is no exact knowledge of when this science began. Some researchers believe that logic existed in ancient Indian civilization, while others argue that it was present among ancient Chinese in the 6th century BC. Meanwhile, some researchers claim that logic was found among ancient Egyptians. Even some of the thinkers in ancient Greece, including Aristotle (384-322 BCE), were influenced by their structures and teachings. Most researchers agree that the science of logic emerged through the insights and discoveries of Greek philosophers, especially Aristotle. It is essential to distinguish between logic as knowledge and behavior among many people and logic as a written science encompassing the branches of concepts and beliefs, including the issues derived from them.

As a matter of fact, logic as knowledge and behavior is a cognitive product of various civilizations, transcending specific regions like the East or West. The logical ideas present in human cognition suggest that individuals deduce results from specific premises or encounter seemingly contradictory ideas (Azzab, 2022). Ibn Sina emphasizes that the purpose of the science of logic is to aid the mind to understand how to express concepts correctly, determine whether statements align with the facts, and discern the validity or fallacy of arguments (Ibn Sina, 2006).

Logic has several definitions, and one of the simplest ones is that it is the science of the laws of thought. Although this definition is broad and lacks precision in specifying the intended "thought," it reminds us of the laws or fundamental principles of thinking. Aristotle, in establishing his syllogistic logic, relied on these fundamental principles, using them to define truth and falsehood (Osman, 2002).

Aristotle referred to logic as the "organon" of science, instrument of science, with its specific subject being science itself. In this sense, logic is the form or shape of science, not its material. However, among later philosophers, especially those in the scholastic tradition, logic is not merely a tool for science; it is a genuine science, with its subject being arguments and inferences. Some define it as the art that enables us to act systematically, easily, and without error in the functioning of the mind itself. Distinguishing logic from methodology, it is defined as the science of the conditions for the conformity of thought to itself and the conditions for the conformity of thought to its subjects, with these conditions, when met, being both necessary and sufficient for truth (Faleh, 2011).

As for Ibn Sina, in his book "Al-Najat," he states that logic is "the infallible instrument of the mind against error in what we conceive and believe, leading to the true belief by providing reasons and guiding its ways." Al-Jurjani defines it as "a legal instrument that protects the mind from error in thought" (Atiya, 2022).

Al-Ghazali, in his writings, "The Criterion of Knowledge," further emphasizes the significance of logic, stating, "Every argument that is not weighed by this scale and not

measured by this standard, knows that it is corrupt. The measure is not secure in its gauges, nor trustworthy in its depths and shallows" (Mahmoud, 2022).

The science of logic, like critical thinking, consists of two components: conception and belief. Explaining these components, it is stated that mental images are sometimes accompanied by judgment and sometimes not. Mental images unaccompanied by judgment are called "conception," while mental images accompanied by judgment are called "belief" (Al-Qurrawi, 2016).

The importance of the science of logic is evident in the fact that each realm within it has its independent benefit. Through our knowledge of the definition's topic, we can understand things correctly and accurately. Similarly, through our knowledge of the inference topic, we can reason in a flawless manner. The science of logic provides the tools for correct thinking, whether in conceptions or judgments. Additionally, the science of logic permeates many sciences, especially the sciences of Sharia (Islamic law). Therefore, the terminologies and logical issues abound in the books of Islamic jurisprudence learners, and complete logical discussions are found in some books on the principles of jurisprudence and theology.

In Alhawashi, logic is the instrumental sciences and Al-Nawawi issued a fatwa on the permissibility of using it, carrying on what existed in their time of confusion about many of his books being mixed with philosophical laws contrary to the legislations, unlike what is present today there is nothing of that, nor anything leading to it, so it was respected" (Al-Sharwani and Ibn Qasim Al-Ibadi, 2015).

Hence, we need to understand the science of logic to comprehend its terms and issues when encountered in other sciences. The terms of the science of logic are useful in expressing meanings for which we do not have equivalent terms. For example, if I asked you, "What is the relationship between liberalism and secularism?" If you studied the science of logic, you would say: the relationship is a relationship of universality and particularity, affirmative or universal and negation, or contrast. These logical terms help us express our ideas accurately. However, if you haven't studied the science of logic, you might not find words with such precision to convey the relationship between liberalism and secularism (Nahar, 2016).

In the science of logic, there are fundamental principles of thought, as enumerated by Aristotle in three laws: the law of identity, the law of non-contradiction, and the law of the excluded middle.

1- Law of Identity (Selfhood)

This is an intuitive law that includes its truth by necessity (logical necessity). It signifies that a thing is itself and will not be anything other than itself, regardless of the changes and variations it may undergo. Additionally, it expresses the stability of truth or the essence of things (their selfhood). Muslims have also recognized this law under the name of the Law of Identity or the Law of Huwa. Aristotle thought that despite the differences that may occur, a thing retains its selfhood. For example, a person, such as Socrates, undergoes many changes - laughing, philosophizing, walking, etc. - but remains Socrates, and his structured expressions remain 'he is.'

2- The Law of Non-Contradiction

This law asserts that a thing cannot be both itself and its opposite simultaneously or combine affirmation and negation together. It is another form of the intuitive Law of Identity, as it expresses the stability, unity, and non-contradiction of truth, even though this is achieved

through negation. A thing cannot be both existent and nonexistent at the same time. Muslims expressed this law by saying, "Contradictions cannot coexist."

3- The Law of the Excluded Middle (Third Raised Law)

This is another form of the Law of Non-Contradiction, expressed as a conditional which means that a thing must be characterized by a certain attribute or its opposite, with no middle ground between them. It can be stated as follows: Either it is A, or it is not, with no middle ground between them. Aristotle expressed this law by saying, "There is no middle ground between contraries." Muslims expressed it by saying, "Contraries do not meet or overlap." (Mehran, 1994).

The Relationship Between Critical Thinking and Logic and Their Importance for Islamic Learners:

Islamic religion encompasses thought, knowledge, and action, a fact emphasized by religious texts from various sources. This realization was evident in the first generations who, with divine support, spread their religion far and wide. Islam is a religion open to all beneficial human sciences, including the science of logic and, necessarily, the accompanying science of critical thinking and its methods.

Muslims historically employed the theology, which involves discussing the beliefs of various religions such as Judaism, Christianity, and different Islamic sects to assert the correct Islamic creed. This was done by addressing the ambiguities that fuel doctrinal disputes in different Islamic schools of thought. All of this was done without hindering or entangling reason, allowing each cognitive source to play its appropriate role. As Al-Shinqiti says, "The manners of research and debate depend on understanding what is necessary from the art of the science of logic. Insulting the evidence or neglecting one of the conditions of production is only understood by someone familiar with the science of logic" (Al-Arifi, 2016).

Islamic logic draws from sources such as the Quran, Sunnah, consensus (Ijma), juristic analogy (Qiyas), and deductive reasoning. Muslim scholars, in their intellectual endeavors, used these sources to deduce legal judgments for unforeseen events. Islam allows this approach by relying on and adhering to the foundational religious texts and incorporating flexibility in its dealings with various situations. This adaptability makes Islam applicable and relevant to all times and places.

There is a close relationship between critical thinking and logic, evident in their definitions, components, principles, and steps. Both highlight the ability for systematic and logical analysis. We will clarify this by illustrating the impact each has on the other, along with examples of doctrinal issues that require both critical thinking and logic when issuing judgments based on religious texts:

The Impact of Critical Thinking on Logic

Firstly: Ability to Distinguish Between Valid and Fallacious Logic

Critical thinking enhances our ability to distinguish between sound and fallacious logic (logical fallacies) when we apply logical principles. Analyzing arguments and logical reasoning enables us to evaluate premises and logical inferences to reach accurate conclusions.

- **Understanding Logic:** The process begins with comprehending logic, and how it works. You must familiarize yourself with fundamental concepts in logic, such as inference, logical rules, and various logical principles.

- **Analyzing Inferences:** When confronted with an inference, carefully analyze and evaluate it. Look for evidence and arguments upon which the inference relies, ensuring they are strong and persuasive. Avoid logical errors such as contradictions or invalid conclusions.
- **Verification of Evidence:** Verify the validity of evidence supporting the inference. Is it based on accurate and reliable information? Are there research studies or sources that substantiate these pieces of evidence? High credibility is crucial for supporting logical inferences.
- **Verification of Conclusions:** Analyze the conclusions drawn from the inference and verify their accuracy. Does the conclusion follow proper logic? Does it align with the presented evidence and arguments? Ensure that the conclusions are not rushed or based on insufficient analysis.
- **Identification of Common Errors (Logical Fallacies):** Acquaint yourself with common errors in logical reasoning, such as circular reasoning, the fallacy of equivocation, and wishful thinking. Be aware of these errors and try to avoid them when evaluating inferences.

An example is what happened with the magicians of Pharaoh when they understood the logic of Moses's miracle, believed in it, and inferred its difference from their sorcery. This led them to logically conclude the truthfulness of Moses and to follow him, remaining steadfast in their judgment despite Pharaoh's threats.

So, the magicians fell in prostration, declaring, "We believe in the Lord of Aaron and Moses." Surah Taha (70).

Pharaoh threatened, "How dare you believe in him before I give you permission? He must be your master who taught you magic. I will certainly cut off your hands and feet on opposite sides and crucify you on the trunks of palm trees. You will really see whose punishment is more severe and more lasting." Surah Taha (71) They responded, "By the One Who created us! We will never prefer you over the clear proofs that have come to us. So do whatever you want! Your authority only covers the 'fleeting' life of this world. Surah Taha (72).

Secondly: Critical Thinking Enhances Logical Thinking

- **Analysis of Ideas:** Critical thinking encourages you to analyze ideas carefully and evaluate them based on logic and available evidence. This means that you do not accept ideas and claims without examining them carefully and ensuring their correctness and logic.
- **Identifying Weak Arguments:** Critical thinking can help you identify weak or unconvincing arguments. When facing an argument, analyze and evaluate it based on the strength of its evidence. This enhances logical thinking and helps you avoid falling into unsound arguments.
- **Development of Linguistic Skills:** Critical thinking enhances linguistic skills that help you express yourself clearly and accurately. When you use language correctly and precisely, therefore, it becomes easier to express logical ideas and clarify the logical relationships between them.
- **Logical Analysis of Information:** Critical thinking enhances the ability to logically analyze information. You can analyze different pieces of information and evaluate them based on logic and available evidence. This helps you make informed decisions and avoid illogical conclusions.

- Critical Thinking in Discussions and Disputes: When participating in discussions and disputes, critical thinking can enhance logical thinking by analyzing arguments and discussions logically and evaluating them based on logic and available evidence.

It is significant to understand that critical thinking and logical thinking are interconnected and collaborate to enhance the ability to think logically and accurately, leading to truthful results. Al-Ghazali said, "Whoever does not know logic has no trust in his knowledge" (Suwaid, 2011). For example, the story of the conversion of Umar Ibn al-Khattab, may Allah be pleased with him, when his initial reasoning led him to the belief that killing the Prophet Mohammad (peace be upon him) was the only solution to restore peace to Mecca. However, subsequent events, starting with the conversion of his sister, raised questions in his mind that criticized his initial logic, prompting him to reconsider. When he read Surah Taha and pondered over the verses.

Ṭâ-Hâ. Surah Taha (1) We have not revealed the Quran to you 'O Prophet' to cause you distress. Surah Taha (2) but as a reminder to those in awe 'of Allah'. Surah Taha (3).

The Quranic language ignited his curiosity, leading him to reconstruct his thoughts. Eventually, he converted from disbelief to Islam. You can read the story of his conversion in modern sources, especially after the emergence of the term critical thinking, such as in the book "When I Met Umar" (Al-Sharqawi, 2017).

Impact of Logic on Critical Thinking

Firstly, Critical Thinking Relies on Logic

- Critical thinking is an essential part of the mental thought process and heavily relies on logic. When we think critically, we analyze ideas and beliefs based on logic and logical evidence.
- Using Logic in Analysis: Critical thinkers analyze ideas and beliefs critically, examining them and using logic to evaluate their feasibility, relevance, and the validity of arguments and evidence supporting those ideas. If ideas rely on illogical premises or contain logical contradictions, critical thinkers conclude that they are unreliable or untrue.
- Searching for Logical Inference: Critical thinking involves searching for logical and convincing inferences. This means looking for arguments and evidence that support the presented ideas and beliefs. When evaluating these arguments, logic is used to ensure their reliability and genuine persuasiveness and to verify the accuracy of comparing one thing to another (logical comparison) (Al-Arifi, 2016).
- Analyzing Logical Inferences: Critical thinking involves analyzing logical inferences used to support ideas and arguments. This includes examining the structure of the inference, verifying the validity of the logical principles employed, and ensuring that the drawn conclusions adhere to logic, and this leads to making decisions that are more precise and logical.

For example: The discussion of Prophet Ibrahim with his people regarding their belief in the stars, a story presented by Allah with utmost clarity, requiring minimal explanation to find skills of critique, then analysis, then inference." So, when the night covered him [with darkness], he saw a star. He said, "This is my lord." But when it set, he said, "I like not those that disappear." Surah Al-An'am (76) And when he saw the moon rising, he said, "This is my

lord." But when it set, he said, "Unless my Lord guides me, I will surely be among the people gone astray." Surah Al-An'am (77) And when he saw the sun rising, he said, "This is my lord; this is greater." But when it set, he said, "O my people, indeed I am free from what you associate with Allah. Surah Al-An'am (78) Indeed, I have turned my face toward He who created the heavens and the earth, inclining toward truth, and I am not of those who associate others with Allah." Surah Al-An'am (79) And his people argued with him. He said, "Do you argue with me concerning Allah while He has guided me? And I fear not what you associate with Him [and will not be harmed] unless my Lord should will something. My Lord encompasses all things in knowledge; then will you not remember? Surah Al-An'am (80).

To find skills of critique, then analysis, then inference."

Secondly, Logical Inference in Critical Thinking

- Logical inference is used in critical thinking to reach thoughtful and logical conclusions. It relies heavily on directing evidence to support arguments and reinforce ideas or opinions. Logical inference is the process of deducing new information from existing information using logic, contributing to more accurate and valid conclusions in critical thinking.
- Basic Principles of Logical Inference: Logical inference is based on fundamental principles. For instance, the principle of sound reasoning assumes that information inferred from accurate information is also accurate. Logical inference also relies on the principle of non-contradiction, where two contradictory statements cannot be true at the same time and place. These principles guide the process of logical inference and ensure the validity of the derived conclusions.
- Types of Logical Inference: Several types of logical inference are employed in critical thinking. One type is necessary inference, where an individual deduces what is necessary based on existing information. For example, if all humans are mortal, then I, as a human, am also mortal. Another type is probabilistic inference, where an individual makes a probable inference based on available information. For instance, the sky is covered with clouds; therefore, it is probable that it will rain.
- Evaluation of Logical Inference: In critical thinking, logical inference is evaluated to ensure its accuracy and reliability. This involves examining the structure of the inference and confirming the validity of the logical rules used. The conclusion in the inference should follow logical reasoning, and there should be no contradiction among the inferred data. If the inference meets these criteria, it is considered persuasive and valid.
- Use of Arguments and Evidence: Logical inference in critical thinking relies on using arguments and evidence to support the conclusion. Critical thinkers employ well-founded arguments and reliable evidence to strengthen logical inference and ensure the credibility of the derived conclusions.

For example: The dialogue between Prophet Moses (Peace Be Upon Him) and the righteous servant, as narrated by Allah in detail in Surah Al-Kahf, unfolds from the beginning of Moses' journey to satisfy his desire for knowledge. It encompasses his logical objections to the righteous servant's actions and the three logical challenges he raised. The servant justified his actions by highlighting the nuanced differences in the Arabic words for will (Arada) used in the narrative ("So I intended," "So we intended," "So he intended"). The dialogue concludes with Moses' firm understanding and acceptance of the knowledge presented.

“As for the ship, it belonged to some poor people, working at sea. So, I intended to damage it, for there was a ‘tyrant’ king ahead of them who seizes every ‘good’ ship by force Surah Al-Kahf (79). “And as for the boy, his parents were ‘true’ believers, and we feared that he would pressure them into defiance and disbelief Surah Al-Kahf (80). So, we hoped that their Lord would give them another, more virtuous and caring place Surah Al-Kahf (81). “And as for the wall, it belonged to two orphan boys in the city, and under the wall was a treasure that belonged to them, and their father had been a righteous man. So, your Lord willed that these children should come of age and retrieve their treasure, as a mercy from your Lord. I did not do it ‘all’ on my own. This is the explanation of what you could not bear patiently” Surah Al-Kahf (82). They ask you ‘O Prophet’ about Zul-Qarnain. Say, “I will relate to you something of his narrative” Surah Al-Kahf (83).

In general, critical thinking and logic are intertwined and collaborate to enhance the ability for rational analysis and logical decision-making.

Conclusion

Critical thinking and logic are fundamental elements in the process of effective thinking and comprehensive analysis. They work together to promote the capacity for critical and logical thinking and to make thoughtful and logical decisions. When we think critically, we repeatedly exercise logical thinking. The process of analysis and evaluation that accompanies critical thinking enhances our understanding of logic and develops our skills in using logical evidence. This mutual reinforcement makes each of them complementary to the other. Therefore, it is essential for them to coexist. Separating them can affect the accuracy of decisions or judgments, and it is accepted that critical thinking is an intermediate stage between logical conception and logical belief. Its steps serve as a connecting tool to reach a safe conclusion.

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