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CRITICAL THINKING

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Introduction

Around the world, educators are beginning to recognise how critical thinking prepares pupils for the challenges of the twenty first century. According to experts such as Emir (2009), critical thinking not only improves creativity and time management abilities, but it also prepares people to solve real-world situations using logical reasoning. Ahmed and Ibrahim (2003) said that it promotes self-awareness, objectivity, and open-mindedness. Furthermore, Bansal stressed that critical thinking entails skilfully regulating the natural frames of ideas and using intellectual criteria to improve them.

Critical thinking, an essential component of higher education, is heavily emphasised in college classroom instruction. On the other hand, many high schools place a great importance on "low order thinking," in which students just absorb and memorise content for tests. However, the goal of a college education is to cultivate "higher order thinking," or the ability to critically assess concepts and evidence. Although actual information is still vital in higher education, the primary goal is to teach students how to think for themselves and become self-directed learners rather than telling them what they should think. Critical thinking requires disciplined reasoning that adheres to exact intellectual norms such as fairness, completeness, logical correctness, precision, relevance, consistency, and clarity.

On these pages, we'll look at many strategies and techniques that teachers can use to develop critical thinking in students. We'll also talk

about how important it is to include critical thinking into instruction in a way that students understand, as well as how to emphasise important topics and build assessments that appropriately measure students' critical thinking abilities.

Critical Thinking

Critical thinking is characterised by a questioning and doubting attitude towards knowledge and established wisdom. It includes a rigorous, objective investigation of concepts and data, followed by a critical appraisal based on each individual's particular values, attitudes, and beliefs. The provision of evidence to back up one's arguments is vital to the practice of critical thinking since it ensures that conclusions are well founded and validated. Investigating the concept of "critical thinking" reveals that distinct perspectives emerge in psychology and philosophy. However, in general, this term lacks a single, distinct definition. 'Critical' is derived from the Greek word 'kritikos,' which meaning to judge. Its genesis is linked to the Socratic discourse and analytical techniques that were prominent at the time (McGregor, 2007). Later, the word "kritikos" became "Criticus" in Latin, influencing its translation into other languages (Hançerlioglu, 1996). According to Lau and Chan (2014), "Critical thinking involves more than just gathering knowledge". A person who is very factual and has an excellent recall may not always be good at critical thinking. We explore the fundamentals of critical thinking in this chapter with the goal of improving the way of understanding and developing analytical and evaluative skills. By investigating and using these ideas, one will develop the ability to make judgement calls.

According to Dudhade A. B. (2016), critical thinking is more than just recalling and retaining information; a critical thinker uses facts to solve problems and make wise decisions; and critical thinking promotes creativity.

According to psychologist Glaser (1942), critical thinking is an approach and logical application of abilities in situations requiring problem-solving. Ennis (1962) described it as a phenomenon that is both product-oriented and logical, highlighting the significance of accurately evaluating statements. According to modern views, critical thinking is an intentional reflective activity that requires logical reasoning (Brookfield, 1987; Ennis, 1989; Paul, 1992; Sternberg, 1986). Researchers have proposed that intentional reflection and genetic characteristics are necessary for critical thinking from the mid-1990s (Ennis, 1993; Facione, 1990; Paul, 1997). But since Glaser's work, experts have suggested that attitudes are essential to this concept. Experts continue to disagree on whether motivations, habits, and personality features influence the development of critical thinking or if it is a skill that can be taught. In spite of these different points of view, modern scholars agree that critical thinking is "defined as intentional, self-regulating judgment leading to interpretation, analysis, assessment, and deduction, as well as explanation of the evidential, conceptual, methodological, criteria logical, or contextual considerations upon which judgement is based" (Facione, 1990).

People who are skilled in critical thinking are able to take a step back and think critically, which is responsible, skilful, and intellectually stimulating. To be effective, critical thinking requires the application of information, competence, assumptions, and the capacity to question one's own assumptions. Critical thinking abilities include reflexivity, self-correction, and monitoring to determine whether one's thoughts are logical.

According to Banning (2006), critical thinking entails examining, evaluating, and discriminating information, as well as considering how that knowledge is used to generate opinions and guide therapeutic decisions. Brookfield (1987) defines critical thinking as the

ability to recognise, question, and assess assumptions for validity. He believes that sceptics and those who are curious are more likely to offer responses that resolve errors.

Importance of Critical Thinking

It is impossible to overstate the value of critical thinking in education. We develop our own opinions and challenge those of others, which not only boosts our self-esteem but also improves our capacity for critical analysis of the literature and the information at our disposal. Gaining skills in critical and analytical thinking is essential for those who want to become teachers. These abilities are necessary for all aspects of our academic journey, including research. The importance of critical thinking is highlighted by the following points:

Critical thinking is one of the most important ways to collect and analyse accurate information, which is enabled by the rapid advancement of research and the explosion of knowledge.

- It leads to increased awareness of the cognitive material, independence in the learner's thought process, and freedom from dependency.

- According to Abd al-Aty (2008), it is crucial that students obtain critical thinking instruction so that they can search the internet for reputable, practical, and valuable websites.

- To reach reliable conclusions, students must acquire critical thinking abilities, which encourage an attitude of inquiry, investigation, and rejection of information that has not been adequately explored.

- The learner participates in the educational process and becomes more positive and communicative. The student develops research and communication skills.

- It entails providing the learner with the mental capabilities required to deal with the challenges of the information age.

- It assists students in following realistic parameters while making decisions and deferring decisions until after verification (Nasser, 2008).

One of the most important aspects of knowledge is critical thinking, which has applications beyond the classroom to almost every part of daily life. Critical thinking is a crucial ability that all students should work to acquire, as it is vital to handling both academic and real-world challenges (Miller, 2005). This core set of skills includes a wide range of skills that are applicable in different life situations and require good reflection, analysis, and planning. It is an all-purpose cognitive aid that encourages people to tackle problems in a clear and reasonable manner in a variety of fields, including law, education, research, and management. Critical thinking is an important skill in any professional pathway since it cuts across boundaries of position. Any professional progression can benefit from critical thinking, which breaks through limits based on status or profession. Critical thinking abilities are more indicative of successful life outcomes than intelligence alone, according to research by Butler, Pentoney, and Bong (2017).

Characteristics of Critical thinkers

Critical thinkers have a more complex mindset than those who only think in traditional ways. When compared to low thinkers, they produce more and better ideas (Ruggiero, 2012). Critical thinkers improve their critical thinking abilities by using a variety of questioning approaches to discover novel and frequently superior ideas. Specifically, before deciding on a plan of action, critical thinkers consider problems from multiple angles and experiment with different research techniques.

Instead of having fewer distractions than ineffective thinkers, critical thinkers learn to assess their first impressions, carefully evaluate the pros and cons of many opportunities, and base their decisions on facts rather than personal views. They recognise their limitations and examine the reasoning behind their ideas and the practicality of their solutions, identifying problems and weaknesses, anticipating criticism, and sharpening their concepts in response.

Ruggiero (2012) describes critical thinkers as:

- Recognise personal limitations.
- See issues as wonderful challenges.
- Aim to comprehend.
- Make conclusions based on evidence.
- Show interest in other people's ideas.
- Approach extreme beliefs with scepticism.
- Think before you act.
- Avoid emotional bias.
- Keep an open mind.
- Practice active listening.

Barriers to Critical Thinking

- Lack of relevant background information
- Poor reading skills
- Bias
- Prejudice
- Unwarranted assumptions
- Peer pressure
- Conformism
- Provincialism
- Narrow-mindedness

- Closed-mindedness
- Distrust in reason
- Relativistic thinking
- Rationalization
- Wishful thinking
- Short-term thinking
- Selective perception
- Selective memory
- Overpowering emotions
- Face-saving
- Egocentrism
- Socio centrism
- Stereotyping
- Self-deception
- Fear of change
- Scape goating
- Superstition

Egocentrism, sociocentrism, unjustified assumptions, relativistic thinking, and wishful thinking are all major hurdles to critical thought.

Egocentrism

It is the propensity to see reality as centred on oneself. Two frequent kinds of egocentrism are self-interested thinking (the tendency to accept and defend beliefs that conform to one's own self-interest) and self-serving bias (the tendency to overestimate oneself).

Sociocentrism

It is group-centred thinking. Two frequent kinds of sociocentrism are group prejudice (the inclination to regard one's culture or group as superior to others) and conformism (the tendency to conform, often unconsciously, to authority or group standards of conduct and belief).

Stereotypes

Stereotypes are generalisations about a group of people in which identical characteristics are assigned to all or nearly all members of the group, regardless of whether such attributions are accurate.

Relativistic thinking

It is thinking based on the idea that there is no "objective" or "absolute" truth because truth is simply a matter of opinion. The most popular form of relativism is moral relativism, which holds that what is morally right and good varies from individual to individual (moral subjectivism) or culture to culture (cultural moral relativism).

Wishful thinking

Believing something because it makes happy, rather than because it is true.

Components of Critical Thinking Process

Al-Sayed (1995) defines critical thinking as an interconnected process with five interdependent components, namely:

a) **The knowledge base**: This refers to the individual's knowledge and beliefs, and it is required for a sense of conflict to arise.

b) **External events:** These are stimuli that cause a feeling of contradiction.

c) **Own theory:** This is the individual's own construct derived from their cognitive basis, which defines them.

d) **Feeling of contradiction or divergence:** This feeling serves as a motivator for the subsequent critical thinking procedures.

e) **Resolving the contradiction:** During this stage, the individual integrates all components of critical thinking as they attempt to overcome the contradiction, which includes several phases.

According to Saadeh (2011), critical thinking consists of several components, including:

- Concentrating on difficulties and queries.

- Identifying different problems.

- Focussing on similar themes.

- The capacity to apply relevant statistics and facts.

- The opportunity to test the strength of the proof by re-application

- Avoiding self-centred, hope-filled, and desire-driven thinking.

- Identifying several assumptions.

- Dealing with untrustworthy or ambiguous information with distrust.

- Understanding both inductive and deductive skills.

- Avoiding logical fallacies.

When analysing these critical thinking components or aspects, as Saadeh (2011) refers to them, it becomes evident that they are the closest to introductions or guidelines for carrying out the critical thinking process.

Given the components of critical thinking that have been discussed, the critical thinking process can be described as follows:

- The knowledge base and the individual's prior knowledge act as assumptions.

- The proclivity for critical thinking, which is often triggered by exciting stimuli that encourage an individual to participate in critical thinking.

- Applying critical thinking skills.

- Drawing conclusions, in which the consequence of the critical thinking process is communicated by judgements, decisions, and other related acts.

Critical Thinking Skills

According to Bayer (1988), critical thinking skills can be divided into the following categories:

- Define and clarify the problem.

- Inference of information.

- Solving the problem and reaching appropriate conclusions.

Afaneh (1998) categorised critical thinking skills in five categories:

- Predicting assumptions.

- Interpretation.

- Evaluating the conversations.

- Deduction.

- Induction.

These talents are consistent with the Watson and Glaser paradigm, which portrays them as follows:

- Identifying assumptions.

- Interpretation.

- Inference.

- Evaluating arguments.

- Conclusion.

Facione's classification contains:

- Interpretation.

- Analysis.

- Evaluation.

- Inference.

- Explanation.

- Self-organization.

In addition to theoretical frameworks and procedures, critical thinking necessitates the development of mental skills gained through education, practice, and training. Examples of fundamental abilities include the ability to recognise, compare, draw conclusions, forecast, and assess.

Activities to Understand Critical Thinking

Butterworth and Thwaites (2013) summarise the basic tasks of critical thinking as the following three headings:

- Analysis

- Evaluation

- Further argument

These tasks are recurring throughout the book, coming with different texts and varying levels of effort. A brief introduction to the key activities is provided below.

a) **Analysis:** entails finding the major components of a text and reconstructing it in a way that fully and impartially expresses its original meaning. This is especially important when dealing with complex arguments.

b) **Evaluation:** This involves determining the usefulness of a text, such as how well an argument supports its conclusion or the strength of evidence offered in support of a claim.

c) **Further Argument:** It allows pupils to express their own reactions to the text at hand by giving a reasoned case for or against the statements it makes.

Critical Thinking in the Classroom

Bassham, G., Irwin, W., Nardone, H., and Wallace, M. J. (2011) developed Critical Thinking in the Classroom. When students first enter college, they may be surprised to discover that their professors seem less interested in how they acquired their beliefs than in whether those beliefs can withstand critical scrutiny. In college, the focus is on higher-order thinking: the active, intelligent evaluation of ideas and information.

- Understanding others' arguments and ideas.

- Critically assessing those arguments and beliefs

- Creating and defending one's own convincing arguments and views.

- Advantages of Critical Thinking in the Classroom

Educators who integrate critical thinking into their teaching empower students to grasp and control their learning process. Students with critical thinking skills engage with course materials in a more deliberate and efficient manner, posing more challenging enquiries and actively participating in the learning journey. Students who nurture critical thinking skills often continue to use them throughout their lives, potentially transforming their futures.

In the past, educators believed that mere content knowledge was sufficient for student success, assuming that the information taught in schools mirrored what previous generations had learnt. However, in today's rapidly evolving world characterised by instant communication and incessant news cycles, this mindset has shifted. The rapid pace and ubiquity of technology have created an environment in which information undergoes constant change, and new ideas proliferate.

As Edward de Bono emphasises in "de Bono's Thinking Course" (2004), "Knowledge is not enough." In today's world, students

must develop critical thinking skills in order to absorb, evaluate, and contribute to new information. The creative, constructive, design, and operational components of thinking are equally important as knowledge (Murawski M. L, 2014).

Conclusion

Finally, this chapter examines the meaning and value of critical thinking, emphasising its transformative potential in educational, professional, and personal contexts. It defines critical thinking as a deliberate, self-regulating judgement process that promotes logical reasoning, contemplation, and active interaction with knowledge. The chapter emphasises critical thinking's vital role in higher education, highlighting how it goes beyond mere knowledge acquisition to develop higher-order thinking abilities required for navigating the complexity of the twenty-first century.

Furthermore, the chapter identifies the traits of critical thinkers and investigates the obstacles to critical thinking, which range from egocentrism to wishful thinking. By overcoming these obstacles, people can improve their capacity to approach challenges with clarity, rationality, and impartiality.

Finally, the chapter emphasises the importance of critical thinking in the classroom, highlighting educators' vital role in developing students' critical thinking skills. By incorporating critical thinking into instructional approaches, educators equip students to become discriminating learners capable of navigating today's dynamic landscape of information and ideas. Finally, the chapter urges for the incorporation of critical thinking into educational curricula, acknowledging its importance in developing knowledgeable, analytical, and adaptive persons capable of facing the difficulties of modern society.

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