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**| RESEARCH ARTICLE****The Impact of Critical Thinking on Learners to Increase their Self regulate in the Education Process: An Overview****Zanyar Nathir Ghafar<sup>1</sup>** ✉ and **Bareq Raad Raheem<sup>2</sup>**<sup>1</sup>*Nursing Department, Kurdistan Technical Institute, Sulaymaniyah, Kurdistan Region, Iraq*<sup>2</sup>*Electronic Computer Center, University of Diyala, Diyala, Iraq***Corresponding Author:** Zanyar Nathir Ghafar, **E-mail:** zanyareng92@gmail.com

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**| ABSTRACT**

This study explored students' ability to think critically in connection to the learning processes, and it showed how important it is for students to engage in critical thinking in various educational environments. Cultivating students' abilities to engage in critical thinking is an essential component of the many educational methods and frameworks employed in today's classrooms. This research was conducted to provide a general overview of the notion of critical thinking as it pertains to the process of either teaching or learning. The only objective of this piece of writing is to carry out a literary analysis of the subject matter that is concerned with critical thinking. Each passing generation has a heightened awareness of the necessity to have an education due to the increasing sophistication and complexity of the world. It is generally accepted that the development of one's capacity for critical thinking is a stage in the educational process that is of the utmost significance across the board in all academic fields, particularly in the most recent few decades of education. As a consequence of the findings of this research, a significant conclusion has been drawn about the importance of having abilities in critical thinking for learners in all academic fields worldwide.

**| KEYWORDS**

Critical thinking, students' abilities, educational process, sophistication, academic fields

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**1. Introduction**

The application of critical thinking is significant both within educational settings and in our daily lives. Moreover, it plays a crucial role in ascertaining individual and communal achievements when confronted with increasingly intricate global predicaments (Butler, 2012; Clarke et al., 2017; Griffin & Care, 2015; Kirschner, 2020). The capacity to reason logically and probabilistically and apply these abilities to real-world problems that are not independent of their content are all included in the definition of critical thinking. Critical thinking may also be defined as the ability to apply these skills to problems that are not content-independent. According to Hader (2005), this will help enhance your creativity and your time utilization and management. Critical thinking may help learners comprehend something more clearly. It allows students to respect other people's beliefs and thoughts while remaining objective, less emotive, and more open-minded. By preparing beforehand, we will be confident to provide fresh perspectives and perceptive analysis of essential subjects. Emir (2009) argues that critical thinking encompasses the ability to reason logically and in accordance with probability rules and the ability to apply these skills to real-world issues that are not content-independent.

Additionally, it may assist students in improving their time management and creativity. Brookfield (2005) looked at the instructors' perspectives on students' thinking via an interview with the faculty of a private liberal arts college. The authors noted that none of the participants had gotten official training in this field, although most were "eager to promote critical thinking" (p. 300). Because of this, teachers created and promoted their particular notions of critical thinking. Questioning should be taught as the cornerstone of all learning since it is the foundation of critical thinking and knowledge generation. Students' learning strategies are often impacted by their experiences in teacher-centered, textbook-driven classrooms (Sharma & Elbow, 2000). This is an uncomfortable situation for modern educators. Therefore they want to use the most recent models and instructional strategies that are more effective in getting students to think. Critical thinking is a prerequisite for many crucial career skills, including problem-solving, decision-making, sound analysis, and good judgment. Businesses with the best critical thinkers on staff have a significant and quantitative competitive advantage (Facione, 2013). Several previous studies have examined the concept of critical thinking. Duron et al. (2006) argue that a practical approach to learning should prioritize the development of student's critical thinking abilities, promoting engaging and productive learning encounters for both students and educators. The objective of constructivism The gaining of knowledge also impacts the development of communication skills, fostering socialization and establishing mutually beneficial relationships with others and the surrounding environment. Several forms of interactions facilitate the acquisition of knowledge in humans. Critical thinking aims to develop positive human qualities such as independence, the capacity to evaluate processes and their outcomes, and accountability for taking calculated risks when making decisions. (ŽivkoviL, S. (2016). This study focuses on critical thinking and its significance in the education process to increase and build students' ability and self-regulate themselves.

## **2. Skills in critical thinking are becoming more important.**

One of the most essential parts of knowledge is critical thinking. Its applications extend beyond the classroom to almost every other sphere of daily life. Every student should strive to develop critical thinking as a talent since it is essential for academic problem-solving and real-world issues (Miller, 2005). Essential thinking abilities provide a wide range of abilities that may be used in every situation in life when reflection, analysis, and planning are required. A domain-general cognitive ability exhorts individuals always to act logically and clearly. Critical thinking develops itself as a necessary talent, whether in education, research, business, or law. Any vocation may benefit from critical thinking; it is not only a skill for a particular group of individuals or a specific trade. Butler et al. (2017) contend that critical thinking abilities rather than intellect are a considerably better predictor of making wise choices in life. Coexistence beyond memorization is the capacity to think critically. When students think critically, they can question beliefs, assess and integrate the occurrences, generate new hypotheses and test them against the data, and think independently.

## **3. What does the word thinking mean?**

Research on thinking has a history that depends on when individuals first become conscious of their thoughts. Thinking is one characteristic that distinguishes humans from other living creatures. According to Halpern (2003, p. 84), thinking involves modifying or altering an internal image. She claims that when we begin to think, we employ our information to accomplish some goal. Since everyone in our society has relationships with others and nobody lives alone, thinking capacity is the fundamental instance of our existence. Descartes said that thinking uses reasoning and that reason is a series of straightforward concepts connected by rigid logic (McGregor, 2007). He came up with the phrase "cogito ergo sum," which translates as "I think therefore I am," after studying neurological communications between receptors and affectors in diverse vertebrates (Gaukroger, 2003). The ideas of thinking and learning complement and finish one another. From this perspective, it can be claimed that although critical thinking concepts and learning styles have different aspects, they may be used in conjunction with anything like this. It can be found through a literature review that studies have combined learning styles with critical thinking principles. The origins of thinking may be found in Socrates' ideas and teachings from about 2500 years ago. When Socrates saw that individuals could not logically defend their claims to knowledge, he laid the foundation for critical thinking (Clark, 2009). All of their vacuous language hid muddled interpretations, shoddy proof, or incoherent views. Socrates deduced from these findings that relying on authoritative persons to possess sound knowledge and insight is unreasonable. He concluded that a person in an assignment of authority may nonetheless be insane and confused (Crenshaw, 2014). As a result, he demonstrated the need for deep understanding. The cognitive processes

encompass various knowledge domains, including mathematics, language and literature, science, society, art, other academic disciplines, and personal encounters in everyday life.

#### **4. Imaginative reflection**

The creative process may be seen in people of all ages and at every stage of life. Creativity is innate in all humans. However, continuity, progression, uniformity, and the appearance of innovation have the potential to transform individuals. A few of the features of creativity include adaptability, various pondering, sensitivity to the environment and people, rationality, the ability to think and act swiftly and readily, inventiveness, and the desire to learn about and be interested in new situations. The ability to produce distinctive results might be regarded as creativity. "critical thinking" is also used to describe critically innovative thinking. There are significant differences between thinking critically and thinking aesthetically, even though both ways of thinking may be said to be comparable to one another. Creativity is an activity that involves developing or generating new ideas, whereas criticality refers to the process of analyzing or criticizing something. The basic meaning of the term imaginative suggests the presence of an essential element. According to Paul and Elder (2008), when we have a proper and profound understanding of critical and creative thinking, we see that the two types of thought are interdependent, interwoven, and unified.

#### **5. The Role of Thinking in Pedagogy**

It has been shown that the term pedagogy is an essential need, for people is an activity that contributes to human progress and is a must for all humans. According to Meyer et al. (2009), the purpose of education is to "nurture the person" and "assist in realizing the full potential that already resides within him or her." According to Lipman (2003), schools should make the formation of a child's thinking their primary objective rather than seeing it as a trivial consequence if it even happens at all. This particular school of thinking has been around for a long time. Students need to be guided through the process of what and how to study via certified education. When students evaluate what they have learned and the methods through which they have learned it, they demonstrate their ability to think critically (Emir, 2009). Cotton (1991) states, "Students must be equipped with lifelong learning and thinking skills necessary to acquire and process information in an ever-changing world to function successfully in a highly technical society." This statement was made in order for students to be able to acquire and process information in a world that is constantly changing. Since this is the primary purpose of most contemporary educational systems, one of the primary objectives of education should be to foster intellectual growth in pupils and develop their physical skills. Elder and Paul (2008) claim that students actively participate in critical thinking while learning it. Critical thinking abilities are helpful for society and communal functioning in addition to personal advantage (Paul, 1984; Schrag, 2016; Vincent-Lancrin, 2019; Williams, 2005). For instance, in liberal democracies, these abilities are seen as essential to the democratic process (Abrami et al., 2015; Paul, 1984). Additionally, critical thinking is regarded as a crucial technique for addressing many of the societal problems that are global in scope, such as automation and climate change (Schick et al., 2014; Vincent-Lancrin, 2019). People now need to be able to conceptualize issues within a global framework and comprehend the frequently distant repercussions of policies and political action, thanks to the rise of globalization and the Internet (Rothenberg, 2006).

##### **5.1 Thinking Critically: Traits of Those Who Think Analytically**

When we look at the definitions of critical thinking, we can deduce the characteristics of someone who thinks critically. Critical thinkers actively seek out information, challenge it, reject it as it is, synthesize it, assess it, and then utilize that knowledge to support their arguments. They are also open-minded and cognizant of their thought processes. Students will be able to effectively understand what others say or write and judge if they are putting forward a solid case if they learn how to evaluate people's efforts at persuasion (Bowell & Kemp, 2002). Then, without knowing if learners have a valid cause to be convinced, we may start to liberate ourselves from believing what others attempt to convince us. In any case, this section emphasizes the value of critical thinking and the traits of critical learners comprehensively and engagingly. Here is a list of traits Paul and Elder (2008) compiled that define critical thinkers. They mention the qualities of critical thinkers: highlight important issues and challenges and formulate them accurately; gather and evaluate pertinent data, effectively interpreting it utilizing This individual demonstrates a capacity for engaging with abstract concepts and generating well-considered conclusions and solutions. They critically evaluate these findings concerning pertinent standards and criteria. Additionally, they approach alternative perspectives open-mindedly, recognizing their significance and assessing them based on their

underlying assumptions, consequences, and practicality. Furthermore, they effectively collaborate with others to address complex problems and arrive at solutions. (Paul and Elder (2008).

### **5.2 Teaching students to think critically**

The ability to think critically is an essential life skill that should be taught to every student, and they should never take anything at face value. However, the question remains: How can one facilitate the development of critical thinking skills in children? There are several frameworks for organizing and delivering critical thinking education. Many approaches may be used to include critical thinking into the curriculum, including integrating it into every topic, offering it as a standalone course or unit, or adopting a hybrid strategy that combines both methods. The first approach of a discrete course or unit requires the inclusion of materials that specifically focus on cultivating critical thinking attitudes, skills, and knowledge. One limitation of the program or resources is the need for more extensive applicability throughout the curriculum. According to Wright (2002), the infusion approach is a second potential technique whereby critical thinking is integrated as a core element across all subject areas. Employers often worry about their staff members' poor critical thinking and reasoning skills; as per Hirose's (1992) research, Acquiring these skills is of utmost importance given the heightened need for critical thinking and problem-solving abilities in contemporary work environments, surpassing the requirements of past jobs. This situation may also be used in the context of education. Teachers must exhibit excellent critical thinking skills. It is essential to differentiate critical thinking from intelligence since these two concepts are distinct. Critical thinking is one potential skill that might be developed, as Walsh et al. (1999) suggested. The development and exploration of critical thinking in its many aspects have attracted the attention of several scientists and professionals, leading to the formulation of various theories on the subject. This assertion has particular validity in light of the current surge in public awareness about the significance of critical thinking. Teachers are aware that critical thinking is a mental process. Employers and managers are encouraged to observe diverse circumstances, consider all viable alternatives, and choose a course of action using critical thinking. This procedure might take a while and calls for input from many sources at various organizational levels. When the practice is exemplified and promoted from the highest position to the bottom of the company's structure, it benefits management and workers (Anderson, 2013).

### **5.3 Research Carried Out Regarding the Subject of 'Critical Thinking'**

The initiation of the first investigation into critical thinking took place throughout the 1960s. The fundamental aim of this research was to amalgamate two renowned fields to get a complete comprehension of critical thinking. Psychological techniques have predominantly prioritized cognitive processes, namely focusing on thinking and conducting experimental investigations on cognition. Furthermore, these methodologies have investigated variations among individuals in acquiring knowledge and cognitive abilities alongside the significance of problem-solving in the context of critical thinking. On the other hand, philosophical methodologies have focused their efforts on assessing criteria for sound reasoning, analyzing the nature and impetus of human thought, and discerning the cognitive abilities necessary for cultivating an impartial perspective on reality. We will now provide a comprehensive array of illustrative instances collected from rigorous academic investigations on critical thinking. In a study proposed by Kürüm D (2002), the focus was on doing research inside the education department of Anadolu University. Kürüm's study aimed to determine the fundamental elements of critical thinking skills, the different levels of thinking skills that contribute to this capacity, and the factors that impact critical thinking abilities among teacher candidates currently enrolled in the education program at Anadolu University. The research findings indicated that the teacher candidates had moderate critical thinking skills and other cognitive talents. Moreover, it has been observed that these skills are subject to various influences, including but not limited to age, the nature of the high school attended by the individuals, the level and nature of their scores in the university entrance examination, the specific educational system being studied, the educational and financial circumstances of their families, and their involvement in activities aimed at personal growth and improvement.

Within educational environments, research was undertaken by Paul (1989) that focused on the use of critical thinking tendencies. Paul posits that applying this research may facilitate the formation of self-directed thinking and disciplined attitudes, according to Paul (1989). Critical thinking encompasses essential abilities, including identifying conclusions, assessing premises, drawing inferences, and identifying logical fallacies. Based on the observation mentioned earlier, the individual in question presented a definition for critical thinking, characterizing it as a

meticulous and independent cognitive process that encompasses remarkable intellectual capacities designed to suit a particular mode or field of thought. This definition of critical thinking emphasizes the development of people who are impartial and analytical in their thinking and who can consider the interests and well-being of many persons or groups, regardless of their motives. Paul alluded to the paradigm of dialectical or dialogical thinking. Giancarlo, Blohm, and Urdan (2004) performed research aimed at evaluating the extent of critical thinking skills shown by adolescents. The study included four supplementary research inquiries. Their research findings provide empirical evidence for the validity and effectiveness of the California Measure of Mental Motivation. The research presented empirical data supporting the existence of a critical thinking disposition among teenagers, along with introducing a helpful assessment instrument for measuring this construct. The organization's establishment was founded upon the core conviction that critical thinking is an innate inclination. Based on the researchers' findings, it assesses individuals' perception of their readiness and capacity to approach intricate issues systematically, creatively, flexibly, and curiously.

#### **5.4 The importance of critical thinking in the classroom environment**

The phrase "critical thinking" is often applied in various educational situations, as indicated. Adult students are strongly encouraged to develop these skills and put them to use in a variety of different settings. Examples of critical thinking include reviewing the ideas that were formed, making a rough judgment about what plan of action would best fix the problem or what belief about it is most logical, and then examining and refining that course of action or belief (Ruggiero, 2012). It is impossible to exaggerate how beneficial improving our ability to find solutions to problems is. The capacity to solve issues has the potential to have an immediate impact on individuals, in addition to having impacts that are often long-lasting. According to Ruggiero (2012), those who pay attention to developing these skills are characterized by several critical qualities in academic places. These traits may be found in individuals who emphasize increasing these abilities. This implies that the development of cognitive skills necessitates the instruction of cognitive strategies and the enhancement of cognitive proficiency, both of which should be situated within a knowledge framework. The initial focus of this discussion pertains to the conceptualization and implementation of critical thinking within the domains of psychology and education. While conventional philosophical approaches often prioritize critique, modern understandings of critical thinking have revealed a complex concept consisting of various abilities and sub-skills (Facione, 1990b). As mentioned earlier, the definition of critical thinking, which characterizes it as "the systematic and intentional exercise of self-regulated judgment," exemplifies this notion. As identified by Facione and Facione (1992, p.1), the fundamental components of critical thinking encompass cognitive faculties such as interpretation, analysis, inference, appraisal, and explanation. In a general context, critical thinking refers to the ability to examine, condense, and assess information (Halpern, 2001). The utilization of discipline-specific definitions of critical thinking is a common occurrence, as seen by the works of Castle (2009), Gordon (2000), Jacobs, Ott, Sullivan, Ulrich, and Short (1997). This can be attributed to the intricate nature of critical thinking. Moreover, there needs to be more clarity on the consensus between instructors and students regarding the overarching definition of critical thinking, as stated in this study (Huber & Kuncel, 2016).

#### **6. Conclusion**

Cultivating critical thinking skills is vital across several domains of human existence, with particular significance in professional contexts, including interpersonal interactions. The importance of critical thinking in human health, namely among professionals who directly impact persons' lives, such as psychologists, counselors, and educators, is of great relevance. In order to effectively introduce critical thinking to their courses, teachers and counselors must demonstrate a solid commitment to this cognitive skill and its fundamental principles. Cultivating critical thinking skills imparted in the classroom is poised to enhance future workplace learning undeniably. Acquiring critical thinking skills enables workers to effectively analyze workplace difficulties and their impact on corporate cultures and their potential to enhance the products or services provided by a corporation to the community or global market. The capacity for critical thinking is a skill that may be used outside the confines of educational settings. The ability of an individual to exercise sound judgment that impacts daily job operations is indicative of their use of critical thinking skills. Numerous choices have ramifications that extend beyond the immediate worker, influencing others' decision-making capabilities.

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