

Critical Thinking Historical Background Of A Decade Of Studies Covering The Era Of The 1980s

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Abstract: Employers across the world are focusing on employment skills. The main characteristics of attention are having graduates who are job-ready and able to meet the demands of the twenty-first century. There's a lack of focus on critical thinking among educational institutions across the world nowadays. Colleges, Universities, and Business Schools among the many, for instance, are graduating students who lack critical thinking skills and problem-solving skills. This article provides a comprehensive critical thinking coverage of studies of 1980 highlighting what critical thinking is and how it was addressed by the world's pioneers of critical thinking. It will be of benefit to scholars, educators, and employers who are focusing on critical thinking as an essential skill of the human capital of today's mankind.

Index Terms: critical thinking skills, problem solving skills, employers, educators

1 INTRODUCTION

The soft skills are becoming among the most required skills in the 21st century and for even centuries to come. Employers across the United States and the world are becoming more focused on obtaining talented graduates that possess many skills among which are critical thinking skills and problem-solving skills. Critical thinking is the use of cognitive skills [1]. When faced with a complex situation, critical thinking categorized as the use of the best thinking skills in situations that require the use of the brain [2]. Therefore, it is referred to as a disciplined art that is based on rational and analytical thinking [3]. The demand for the workplace is on the rise globally. The quest for logical thinkers is even more in-demand than ever which requires active thinkers who can gather information, analyze it, make an assumption based on solid evidence, and be able to make a final decision [4]. Therefore, critical thinking is referred to as a reflective logical process that requires the logic of the mind [5], [6], [7], [8], [4]. The main components of it are continuous analysis, reasoning, and argumentation [9]. It is a rigorous approach of thinking that is based on interpretations, inferences, arguments, explanations, evaluations, analyzing, judging, and making informed decisions [3], [10].

2 LITERATURE REVIEW

Critical thinking is defined as a collection of skills that analyze and evaluate the accuracy of information to determine its authenticity [11]. Best solutions are found through the active use of critical thinking [12]. The desirable outcome achieved through the use of cognitive skills [13]. It is the actual involvement of knowledge and experience to exercise rational decision-making and coming up with the best solutions to problems [14].

Therefore, it requires a higher level of thinking and reasoning using prior information, knowledge, and experience [15], [16]. Critical thinking is an important life skill [17], [18]. It can be learned across time with training in place [6], [19], [20]. The significant part of this learning is happening through the college years [21], [22], [23]. Therefore, the development of critical thinking is significantly impacted by classroom instruction and management [24]. The development of critical thinking skills, for instance, is impacted by the different perspective methods of teaching management skills [25], [26], [27], [28]. There are ten essential core discreet critical thinking skills learners should learn as follows: (1) distinguishing between verifiable facts and value claims, (2) determining the reliability of a source, (3) determining the factual accuracy of a statement, (4) distinguishing relevant from irrelevant information, claims, or reasons, (5) detecting bias, (6) identifying unstated assumptions, (7) identifying ambiguous or equivocal claims or arguments, (8) recognizing logical inconsistencies or fallacies in a line of reasoning, (9) distinguishing between warranted or unwarranted claims, and (10) determining the strength of an argument [11], [29].

3 CRITICAL THINKING IN THE 1980S

3.1 Dumke (1980) [30]

Critical thinking is the concept of analysis that enables learners to analyze and criticize logically. It requires the knowledge of evidence that can lead to advocate ideas providing factual judgments. It is the language of logic that combines the induction and deduction altogether. The main functionality of critical thinking is gathering information from unambiguous situations and statements. The main goal is that there is no conclusion drawn unless it is based on sound reasoning inductively and deductively. Therefore, conclusions are based on factual judgments. The concept itself is based on inferences that distinguish facts from judgments and beliefs from knowledge. Therefore, the design of instructions of critical thinking should be based on a comprehensive understanding of logic, thoughts and formal and informal fallacies.

3.2 Paul (1981) [31]

The delivering of critical thinking requires a goal of coherent relationship mixes the fundamentals of approaches,

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definitions, classifications, and fallacies. Each is based on the inclusion of "symbolic" versus a "non-symbolic" approach, debate, decisions, analysis, and extended and non-extended arguments. The most important of all is that when critical thinking is taught as an engine of technical skills addressed in a formal or informal approach. The later can be mastered when given the attention of one-to-one attention. Learners of critical thinking should be taught daily the skills of questioning, making assumptions, contradicting, identifying, investigating and making healthy skepticism. That eventually becomes the natural habit of a one towards achieving nations of critical thinkers.

3.3 Lazere (1982) [32]

Critical thinking was identified as one of the weak skills of students in the United States according to the reports of the National Assessment of Writing and the Commission on the Humanities. The development of such a skill encompasses the urgent responsibility of all: If literacy is defined, as it should be, in the larger sense of breadth of knowledge and capacity for reason, then it is evident that the greatest threats to literacy in the twentieth century are mass-mediated political thought control and the reason-numbing effects of mass culture, and that English, as the discipline preeminently responsible for fostering literacy, must provide critical weapons for combatting these antirational forces. The delivering of critical thinking should be established through a standalone course as well as integrated into other disciplines of business, economics, politics, media, English, literature, and entertainment. It should be a service course delivering the basics of its components through active daily discussion in class and less of writing practices instead. Thus, it is a humanistic discipline and should be distinctive addressing the humanistic sensibility characteristics addressing the practicality more than its theoretical aspects. All are based on analytical skills, knowledge assimilation and intellectual growth.

3.4 Christenbury & Kelly (1983) [33]

The soul of critical thinking is asking questions. It should be based on assumptions that add value when doubts are raised. The goal of such questions should be based on skill reinforcement. The main objectivity of questions is discovery, exploration, argument, interaction, and sharpen critical thinking skills. All of which leads to overcoming student's anxiety and difficulties. The use of questions is an art. In fact, it is a process that focuses on skills enhancement built strategically to reflect an attitude of its users eventually. All of which contribute to participants' interaction reflecting their own experiences on a particular topic. The process includes a "balance of teacher-initiated and student-initiated questions". Therefore, the mixture of both approaches is considered the ultimate healthy balance. Therefore, questioning should focus on the what, why, and how the aim of which fostering exploration, motivation, and critical thinking.

3.5 Ennis (1984) [34]

Critical thinking refers to reasoning and the use of informal logic. It is a cognitive process associated with the use of the brain. It is the value judgment that is based on the logic of open-mindedness. It is the process of agreement and disagreement. It is the identification of a problem that leads to assumption creation and testing its consistency and validity. All of which rely on a belief and have a certain level of

sophistication. Each assumption should be based on clarity and logic behind it filling the gap of uncertainty. It has two aspects: induction and deductive arguments. Therefore, it is based on practicality, consistency, and reliability. Few of the important philosophical questions should be considered foundational when talking about critical thinking: what is critical thinking?, in what way are value judgments different from empirical judgment?, can there be rules for induction, the application of which does not depend on unspecific outside knowledge?, is "probably" a degree-of-endorsement specifier?, what is the role of deduction in real arguments?, how do you tell what is assumed?, is critical thinking ability a homogeneous trait?, how does one judge the fittingness of a test into an array of information and beliefs?, what does effect-explaining causal claims mean?, what constitutes a check on testability?. Overall, critical thinking is not a homogeneous concept.

3.6 Presseisen (1984) [35]

Critical thinking is a mental act that is cognitive in nature. The aim of this is acquiring knowledge through the use of the brain, perception, intuition and cognitive focus. It is a behavioral approach based on thoughts, knowledge, reasons, judging, and evidence. It is a "complex and reflective endeavor, and creative experience for the individual involved." It is an organized structure of thinking that is based on complexity, problem solving, judgment, productivity and creativity. The concept is based on four main principles: Problem Solving: "using basic thinking processes to resolve a known or defined difficulty; assemble facts about the difficulty and determine additional information needed; infer to suggest alternate solutions and treat the more appropriateness; potentially reduce to simpler levels of explanation and eliminate discrepancies; provide solution checks for generalizable value." Decision Making: "using basic thinking process to choose the best response among several options; assemble the information needed in a topic area; compare advantages and disadvantages of alternative approaches; determine what additional information is required; judge the most effective response and be able to justify it." Critical Thinking: "using basic thinking processes to analyze arguments and generate insight into particular meanings and interpretations; to develop cohesive logical reasoning patterns and understand assumptions and biases underlying particular positions; to attain a credible, concise, and convincing style of presentation." Creative Thinking: "using basic thinking processes to develop or invent novel aesthetic, constructive ideas, products, related to percepts as well as concepts, and stressing the intuitive aspects of thinking as much as the rational. Emphasis is placed on known information or material- to generate the possible, as well as to elaborate on the thinker's original perspective."

3.7 Beyer (1985) & Ennis (1985) [11,36]

Critical thinking combines a set of skills in analyzing and evaluation of information. There are 10 skills of critical thinking that the core basis of it. They are: "(1) Distinguishing between verifiable facts and value claims, (2) Determining the reliability of a source, (3) Determining the factual accuracy of a statement, (4) Distinguishing relevant from irrelevant information, claims, or reasons, (5) Detecting bias, (6) Identifying unstated assumptions, (7) Identifying ambiguous or equivocal claims or arguments, (8) Recognizing logical

inconsistencies or fallacies in a line of reasoning, (9) Distinguishing between warranted or unwarranted claims, and (10) Determining the strength of an argument." Critical thinking is "a practical reflective activity that has reasonable belief or action as its goal," that is, "the process of reflectively and reasonably deciding what to believe in doing." Critical thinking skills include the skills of analyzing, asking appropriate questions, focusing, clarity of information, making inferences, and making sound decisions. He added that: Critical thinking is not equivalent to the higher-order thinking skills, in part because that idea is so vague. However, critical thinking, a practical activity, includes most or all of the directly practical higher-order thinking skills. Furthermore, critical thinking includes dispositions, which would not be included in a listing of skills.

3.8 Capella, L. M., & Robin, D. P. (1986) [37]

Critical thinking is a characteristic that differentiates between the graduates who are trained to be critical thinkers and those who are not. It is "the heart of the intellectual process." It is an important skill that has to be developed in business students and practitioners. The key factor of success in day-to-day activities is critical thinking. The term itself deals and cultivates around the following questions: "How do we know? Why do we believe it? What is the evidence?" Critical thinking deals with problem solving and thinking critically. It requires evaluation of a particular relevant situation with a focus on the input and output of the process. Critical thinking skills are the major measures of output quality.

3.9 Scriven, M., & Paul, R. (1987) [38]

Critical thinking has been developing since 2500 years. It is a rich concept and its roots belong to the mid-late 20th century. It is an intellectual process that is disciplined in nature. It involves, in a skilled active manner, gathering information, conceptualizing information, evaluating such information, and analyzing and synthesizing them. Such information can be gathered, collected from actual observation, coming from real-life experience, as a result of communication with others or one's reflection of situations. All serve as a guide to our beliefs and actions. Critical thinking is a self-guided discipline of thinking at the highest level of reasoning. The reasoning of things is based on a way of quality that is fair-minded. The values of critical thinking are universal. They are intellectual values that involve clarifying and accuracy as the foundation of it. It also involves other traits, such as consistency of evidence, the precision of the information, the relevance of information, sound evidence, good reasons to things, depth of knowledge, breadth of knowledge, and fairness. The elements of critical thinking which serve as the structure of it are based on implicit reasoning. It entails purpose behind things, an exhibition of problems, made assumptions, concepts of thinking, other viewpoints and the relevant objections to them, initial implications and related consequences as a result of that implication or decisions, empirical grounding and their relevant frame of references, and the reasoning that leads to the final conclusion. However, critical thinking itself is not universal based on the individual level. Everyone has a different kind of thoughts that can be rational or irrational as well-disciplined or undisciplined reflected in one type of episode or several episodes that vary based on individual experiences. There are several modes of thinking about critical thinking. These are represented by "scientific thinking, mathematical thinking,

historical thinking, anthropological thinking, economic thinking, moral thinking, and philosophical thinking." Besides, there are two components of critical thinking. These are: "1) a set of information and belief generating and processing skills, and 2) the habit, based on intellectual commitment, of using those skills to guide behavior." Furthermore, critical thinking has modes of thinking. The modes are reflected in any subject matter or problems occur which require the responsibility of standardized intellectual thinking that will lead to an improvement in one's own thinking. Therefore, critical thinking is an endeavor of a lifelong development of skills. It can be vested for the interests of one individual or for the benefits of a group. This depends on the motivation that manipulates motives whether is it selfish or non-selfish. The first benefits one individual while the latter benefits all.

3.10 Lipmann, 1988 [19]

Critical thinking is the criteria principal. The terms criteria and critical thinking share a common ground. The first employs judgments as to its basic rule or principle per se. The second employs thinking that is assessed through appeal to criteria and the latter serves as its main function. Criteria are considered the main instrument for judgment. Critical thinking, as a result of such, is considered reinforced thinking that is well grounded and structured. This is definitely in contrast with the term uncritical thinking. The latter is away from reinforcement of thinking, random, vague and unstructured. A criterion is a reliable kind of reason. Therefore, our thinking is relying mostly on well-structured reliable and sound criteria. Examples of specific kind of criteria are: "standards; laws, by-laws, rules, regulations; precepts, requirements, specifications; conventions, norms, regularities; principles, assumptions, presuppositions, definitions; ideals, goals, objectives; tests, credentials, experimental findings; methods, procedures, policies." If we examine each of the previously mentioned criterions carefully we find that our thinking is relying mostly on most parts of it when it comes to specific relevant situations. It is a skill that can be taught and is considered a form of intelligence. Most of our thinking relies on cognitive skills. Critical thinking is the utilization of those skills that are classified into a smaller group of families. The skills are "reasoning skills, concept-formation skills, and inquiry skills." These skills contribute tremendously to our understandings of things around us the way we relate different meanings to different situations. The main objective of educators and leaders in higher education should be on creating students who are equipped with these skills who can do more than merely think. They should be able to think creatively and be able to practice good judgments. We want a student who can think outside the box and go beyond what other people have thought or created. We want students who will be able to identify reasons for things around them and be able to make a sound judgment. This is what we call a shift from ordinary thinking to extraordinary thinking. The improvement of the critical thinking skills to the level of extraordinary thinking, however, depends primarily on students' abilities and skills.

3.11 Ennis, R. H. (1989) [6]

Critical thinking is the reflective thinking of being reasonable in making decisions about our actions or beliefs as the main focus (Ennis, 1985, 1987). Whether teaching critical thinking skills separately or as integrated within curricula is an unresolved and inconclusive issue up to date. There seems to

be a continuous disagreement of which is the best method that can be more effective than others. However, critical thinking requires logic. It is a process of purposeful reflection. It is not a fixed entity. It is rather a form of intelligence. It is a skill that can be learned and taught.

4 CONCLUSION

Many scholars addressed critical thinking since the 1940s till today. There's still confusion about what critical thinking is and how could it be used in schools, colleges, universities, business schools, and many others. The realization of the fact is that critical thinking is broad. It covers the main characteristics of leaders of today. Each and everyone need critical thinking. The skills are acquired and learned with enhanced training techniques. Many claim to address critical thinking. The reality is that the span of attention of such a topic is short and limited. Many claim that the background of individuals addressing critical thinking is not that of importance. In fact, the reality is that not anyone or everyone can address critical thinking. It requires those who are addressing the topics across multidiscipline and from many different angles. There are only a few experts in the world who are specialized in the study of critical thinking skills. There are the only ones who can address the mastery of such a topic and can guide those who require critical thinking skills across their organizations. The skill of critical thinking is required in every organization across the world. It is becoming a must to have then just should or have to have a skill. Leaders, managers, directors, supervisors, employees, and students require critical thinking skills. It must be a skill of everyday use. There's a lack of it in today's organizations and the reason is that there aren't enough training programs addressing such a topic. Adding to the fact that there are only a few people who can deliver top-notch training in the world. If they are asked to deliver such then the mastery of such a topic would happen. Our organizations become a routine model. That's why you find the retention rate is high across the many fields. There's a lack of involvement of employees in tasks that occupy their brains to be critical thinkers and to create critical thinking atmospheres.

Figure 1. OLCT Model of Critical Thinking in Organizations



Certain factors affect critical thinking learning in the organization. The first factor is the organization. It plays a significant role in creating an environment that is ready to embrace the skills of critical thinking. The culture of the organization contributes significantly to the success of such. It also contributes to the failure of such tremendously. Employees would be eager to be given the chance to practice the skills that require critical thinking. The second factor is leadership. Leaders in organizations can make and break the development of critical thinking skills. Leaders can be the main motivators empowering their employees of embracing critical thinking. The act as role models and that cannot happen unless they start embracing it themselves through actual daily implementation.

Figure 1. Critical Thinking Model in Organizations



This can be enhanced through actual training that is built across a one-year program, for instance, and on a weekly, monthly, and quarterly basis. It can be even arranged according to different groups based on their levels, positions and seniority in the organization. Once implements then it can be designed on different levels of training that is scaffolding in nature. The goal of it is empowering practitioners to reach the highest level of training in the field of critical thinking. Therefore, can critical thinking cannot be given in just drops in the ocean. Any single program of training represents one drop in the ocean and that's not enough to prepare critical thinkers. Instead, it will act as training to remember and forget at the same moment. I would highly recommend, accordingly, using the experts in the field of critical thinking. This is a must and acts as a core factor of investment in human capital.

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