

How to Teach Critical Thinking: A Blessing or A Learning Process?

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Abstract. The quality of our life, including how we learn and how we adapt to the various situation and that of what we produce, make, or build depends precisely on a quality of our thought. Shoddy thinking is costly, both in money and in the quality of life. Excellence in thought, however, must be systematically cultivated. This paper will review the critical thinking, about what is critical thinking skills? can it be trained through the learning process? Is gift contribution to critical thinking skills? What kind of learning process that can improve critical thinking skills? Through this paper, we can use some of the most important information to improve our critical thinking skills.

Keywords: Critical thinking skills, active learning, gifted child, disposition

1 Introduction

Many people decide to make changes in their daily lives based on anecdotes, or stories from one person's experience. For example, let's say that your aunt told you that she takes a vitamin C supplement every day. Additionally, she told you that one morning she was running late for work and forgot to take her vitamin C supplement. That afternoon, she developed a cold. She now insists that you take vitamin C every day or you will get sick, just like she did in her story. Many people hearing this story would just accept this and think, 'To avoid getting sick I should take vitamin C.'

The main questions are should you believe everything that you hear and read, just because other people said so. Unfortunately, most people do that; consciously or not. We sometimes feel it would be easier to believe what said by others rather than having efforts to find appropriate information. This is one reason that causes us to fail to become critical thinkers. Critical thinking (CT) is often described as a metacognitive process which means the ability to use prior knowledge to plan a strategy that consisting of a number of sub-skills which if we used appropriately, increases the chances of producing a logical conclusion to an argument or solution to solve a problem [1]. The main problem here is how to ensure that whether we already perform critical thinking skills appropriately, therefore in order to improve CT ability, we must be aware of what goals we want to meet and what steps should be done in data collection in order to produce the best solution or answer.

In the other hand, there is an assumption said that the critical thinking skills are a natural talent possessed by some individuals. When we look at the two students who assign to completing tasks by the teacher. One of the students carefully observe the directives given by the teacher, but one of the students had only heard but not fully give notice. When the task turned out, duties collected from students who listened to a serious direction is no better than the students who simply hear is not too serious. This will lead to the question Is critical

thinking is a natural talent possessed by the individual? However, this situation will also make students who have heard the direction of the teacher carefully, but the results obtained are not too good to be feeling desperate and fail, this will lead this typical of the student be lazy and feel that all his effort is useless.

Ironically, as it turns out, the approach in teaching subject matter to our student sometimes only focus on how we deliver information to the student and forget the main things in learning process for the graduate level. Lloyd and Bahr's research further revealed that while 37% of academics instructing or assessing CT in university courses at least acknowledge the dispositional and self-regulatory aspects of CT, only 47% described CT in terms of involving processes or skills. Meanwhile, the student needs to reach the highest level in his/her thinking ability for competing in work field in the future but many types of research show that many educational systems did not really focus on improving. For example, Turkey education system aims to improve critical thinking skills, however the reality show it has been identified for the most part as a "read and repeat" model that conduct in the learning, this typical of learning process is reducing change for student to improve their thinking skills and to explore their ability. Regarding this issue, the teacher needs to notice that one of the cores of the learning process is to teach the student to think as a foundation to become an active learner which will lead them to become a long-life learner.

This article using document analysis as tools to reviewing or evaluating research and any other document to elicit meaning, gain understanding, and develop empirical knowledge about what is critical thinking skills? Can it be trained through the learning process? Is a gift contribution to critical thinking skills? What kind of learning process that can improve critical thinking skills?

2 Methodology

In daily life, we will face many situations that ask us to think critically, but sometimes we might fail. Have you ever seen a television show featuring politicians who were arguing about a policy? Do the politicians provide strong arguments to support his opinion? Are the politicians provide factual data? Or whether you think any politician is just boasting? Then, do you choose your side, what make you choose your side? Do you search for the real information and data, before you choose your side, or you just choose because it feels like make sense for you, or just because your friend affected you?

Critical thinking (CT) in this paper is conceptualised as an operative example of higher order thinking that defined as a skill of taking responsibility and control of one's own mind [2], or as logical and reflective thought which focuses on a decision about what to believe and what to do [3] allows for efficient and effective evaluations. In addition, the examination of those structures or elements of thought implicit in all reasoning: purpose, problem, or question-at-issue; assumptions; concepts; empirical grounding; reasoning leading to conclusions; implications and consequences; objections from alternative viewpoints; and frame of reference.

Critical thinking involves a variety of skills such as the individual identifying the source of information, analyzing its credibility, reflecting on whether that information is consistent with their prior knowledge, and drawing conclusions based on their critical thinking [4]. In the literature, CT skills are considered to be essential for the promotion of metacognitive understanding [5], which is referred to higher order thinking which involves active control

over the cognitive processes engaged in learning. Activities such as planning how to approach a given learning task, monitoring comprehension, and evaluating progress toward the completion of a task are metacognitive in nature. Therefore, Critical thinking is an individual effort to seeking the truth information, analyze all related data to find the answer to the problem. This whole process will lead into some action that individual take through a process that requires critical thinking skills in selecting all the possibilities that exist and accompanied by supporting factual data.

A thought is difficult to be affected unless the support data is given consistently and rationally, through the critical thinking process, the individual will also evaluate whether the results of his thinking process has been able to solve existing problems. Critical thinking can also be called with the thinking that has a direction because it focuses on the expected results [6] Halpern in [7]. Critical thinking leads to a way of thinking individuals who require support to a trust. This definition of critical thinking is not simply accepting or rejecting a statement but includes a set of abilities and dispositions that help in deciding what to believe or do when employed.

Watson and Glaser [8] adds that critical thinking can be defined in three main aspects. First, an attitude looking information that involves the ability to recognize and accept the information and facts right. Second, knowledge of how the deduction, abstraction, generalization valid involving the accuracy of the facts logically and third is expertise used and applied either in attitude or knowledge. I believe that with involves many activities that require a thinking skills might give chance to practice logical thinking and deliver it decently, however people should notice that before become expert in this thinking skill people need to empowering their metacognitive and reflective ability. [3] stated that there are six elements that have the mental checklist for critical thinking known as FRISCO: Focus, Reasons, Inference, Situation, Clarity and Overview. In approaching any situation, students have to be focused on identifying the main arguments or problem as guidance for students not to get distracted during the thinking process.

The dimensions of critical thinking also developed by the American Philosophical Association Delphi [9] identifies six cognitive ability is a key concept of critical thinking. The sixth aspect is further defined with the following explanation:

- a. Interpretation, which refers to understand and express meaning or experience, situation, data, assessment, rules, beliefs, customs, procedures, and criteria.
- b. Analysis means able to identify the purpose and relationship of statements, questions, concepts, description or other forms that represent intended to express confidence, judgment, reason, information, and opinions.
- c. Evaluation. In this part, evaluation means to measure the credibility of statements or other representations which are measured by individual perception, experience, situation, judgment, belief or opinion; and to measure the strength of the relationship between the logical statements, descriptions, questions, and other various forms of representation.
- d. Conclusions are intended to identify and ensure that each element can draw conclusions reasoned, to establish estimates and hypotheses, to consider the relevant information and to show the consequences derived from the data, statements, principles, facts, judgments, beliefs, opinions, concepts, description, questions and other forms of representation.
- e. The explanation refers to explain the results of an argument, to justify a reason in terms of facts, concepts, methods, criteria and consideration of circumstances involved in determination the results; and to represent a form of reason in the form of a convincing argument.

- f. Self-regulation, which is the consciousness of individuals to monitor their own cognitive activities.

Others opinion about dimensions of critical thinking was develop by Facione [10]. Facione suggests seven dimensions of critical thinking dispositions which are the curiosity, open-minded, systematic, analysis, truth seeking, confidence in critical thinking and maturity. Seven dimensions are then compiled into The California Critical Thinking Disposition Inventory (CCTDI) (see Appendix Figures 1).

However, among the several dimensions associated with critical thinking dispositions above, it is interesting dimension raised by [10] which made judicious as one important dimension of the critical thinking skills. People who have good critical thinking skills, also need to have judicious in thinking. Occasionally, there are some things that we can not convey directly to others, in this case, words without filtering might cause others false interpret what we mean, so we need to have to use words that are subtler and more discreet, therefore people can understand the intent we truthfully. It is very necessary to remember that being critical thinker doesn't mean that we reserve the right to hurt the feelings of others through our opinion, but critical thinking demands the ability to analyze a variety of circumstances with systematic, then choose the best option and deliver a precise opinion on others. [11] mention that since critical thinking is always 'critical thinking about X, which is referred to thinking about something, it follows that critical thinking is intimately connected with other fields of knowledge. As we begin to think critically to get an answer or give an opinion, the first thing we do is associate the source with the prior knowledge then analyze more detail information to convey the truth information before judging. However, somehow people misperception with connecting between critical thinking with skepticism, or suspension. To avoid this misperception, we need to make sure that when we deliver our thought already strained by collecting accurate data and present it clearly and without bias or negative purpose. [12] notice to be a critical thinker, you will need to develop the habit of testing opinions—your own as well as other people's—before trusting them. Here are seven effective ways of doing so.

- a. Consult everyday experience: Consider your personal experience as well as what you know to be the experience of other people.
- b. Consider the opinion's likely consequences. One way to recognize that an opinion is flawed is if it leads to unintended—and sometimes undesired—consequences.
- c. Consider the implications. This approach entails identifying and examining related ideas suggested by the opinion. Let's say the opinion is, "What people view in movies or on television has no effect on their behavior." (Media spokespeople often say this in response to complaints that graphic sex and violence have a negative social impact.) According to my own opinion media has big rules in involving the way of people thinking. A few months ago, there was a bomb attack in Paris it caused a lot of died people. Media reported it many people around the world sympathetic to this issue. then we can look at a variety of social media such as facebook profile person to replace her with a French flag background for sympathy. On the other hand, the media also reported and exhale speculation about the bomber were killed by holding the passports of certain countries if we think critically is not this really impressed fetched? at some pictures circulating in the media that we could see a passport that is still intact, but the body of the bomber that has been destroyed. Media sometimes lead us to follow and believe their news, but we are the ones who can filter correct information by using higher order thinking skills. (see Appendix Figures 2)
- d. Think of exceptions. This approach is useful when you are evaluating an opinion that expresses a general rule. The more exceptions you can think of, the more suspect the opinion is. Carl Rogers, a famous psychologist, wrote: "One of the basic things which I

- was a long time in realizing, and which I am still learning, is that when an activity feels as though it is valuable or worth doing, it is worth doing”.
- e. Think of counterexamples. Suppose an author is arguing that parents should not give children responsibilities until they are in their teens, and supports her argument with a number of case histories like this one: “I know a person who was given responsibilities such as picking up his clothes and toys at age 3; taking out the garbage at age 6; and raking leaves, washing dishes, and doing laundry at age 10. Today he’s in his mid-thirties and resents having had all those chores.” A counterexample would be the case of someone (perhaps you) who had similar responsibilities in childhood and now regards the experience as valuable. Regarding the story about give children responsibility since their childhood, we can take an example to Japan Elementary School Educational system, where children are taught a system of moral values through four aspects: Respect Yourself (Regarding Self), Respecting Others (Relation to Others), Respect for the Environment and beauty (Relation to Nature and the Sublime), as well as valuing the group and Community (Relation to Group and Society). Therefore, when engaged in an argument we should be able to convey the opinion of the other side by adding relevant data to support our opinions. (see Appendix Figures 3)
 - f. Reverse the opinion. This test consists of taking the exact opposite of the opinion you are examining and determining if a case can be made for it
 - g. Look for relevant research. There are many different information sources: journal articles, books, newspapers, government publications, data sets, websites, videos, interviews--these are just a few of the places where you might find the information you need.

Furthermore, and perhaps more important, we might improve our critical thinking skills through critical dialogue, the clash of divergent views, and possibly other activities, to make it progressively more suitable in general and to specific situations that require innovative forms of critique [13]. Although there is no known objective standpoint for this work, varied perspectives in dialogue can allow for new understandings and improved forms of practice—including critical thinking practice need to be developed.

As we can conclude critical thinking is purposeful, reasoned, and goal-directed. It is the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions. When we think critically, we are evaluating the outcomes of our thought processes how good a decision is or how well a problem is solved.

3 Result and Discussion

3.1. Critical Thinking: A Blessing Or A Learning Process?

There has been much debate on the question 'what is critical thinking? While there are still disagreements about matters of detail, the considerable agreement has been achieved that critical thinking is a combination of abilities and dispositions. The most influential characterization of critical thinking is due to [3]. According to Ennis, to think critically in some discipline or subject is to display these dispositions and abilities within that discipline or subject.

Now we start to figure out, are critical thinking dispositions came from a learning process or it is a blessing that is owned at birth? When baby starts "talking", baby flaunting their budding language skills. Sure, you don't have any idea what the baby saying, but this gibberish will eventually lead to real words. Baby chatter also gives you a peek into her cognitive

development, as baby memorizes and repeats sounds, takes a time to think about what the baby wants to "say," and learns how to use verbal and nonverbal actions to express she/he wants and needs. Obviously, there is a social component, long before baby says a meaning word, baby learns the rules of language and socialization by watching how you react to her sounds and too conversational partners as you take turns talking. Babies are hardwired to learn the language and are affected by how others engage verbally with them. Baby verbal skills will progress through stages as her vocal mechanism matures and she increasingly relates to her environment.

Critical thinking skills are also associated with the development of one's language. A critical thinker must be conveyed their idea through words with clear and precise, so the purpose and content delivered in accordance with the objectives can be achieved. Meanwhile, as previously described that actually children interested in many things, children spend a lot of time with developing critical questions to adult, and somehow many of this question it is difficult to answer by the adult or even adult think it is not important to answer the children question. However, maybe due to various reasons critical thinking skills stagnated. Here are some reasons why critical thinking skills in children experiencing congestion:

- a. Parents effect. The family is the child's early education center. Children begin to imitate a variety of things from the nearest environment, here parents have an important role in providing the basics of character formation and development of affective, cognitive and psychomotor for children. However, sometimes without parents realize, the way they interact with children can be a blade turned a devastating effect on children. We can see parents who may for reasons already tired of working all day, so when the children urge to play or talk, parents ask children to silent even did not heed the request.
- b. The lack of educational system or lesson planning's. In the various educational systems in the world, there are still many education systems are focused on only delivering the subject matter. Assuming that the school only provide course material, then the child is not trained to apply critical thinking.
- c. The influence of the media. Have you ever thought that sometimes media makes you just be a follower? Media provide many kinds of information, which is with that kind of information we can filter the information, but sometimes the opposite happens.
- d. The negative effect of technology. Reading for pleasure, which has declined among young people in recent decades, enhances thinking and engages the imagination in a way that visual media such as video games and television do not improve critical thinking.
- e. The environmental impact of the critical thinking skills. Sometimes we wonder why a group of people can do things that harm others, such as attacking or hurting. A social psychological theory states that people will have the possibility of loss of identity when they are in a social group so that the person will most likely have to follow the values or doctrines in the group.

Nowadays, as the rapidly change of technology and the use of social media most people are easily let the other person, news or information from the media suggest some idea, information, beliefs into their thought, does not matter whether it is right or wrong. People tend to began to assess and justify one or another group with that information. However, this typical of thinking will somehow directly direct to prejudice among people. As we now, prejudice will lead to many negative effects. Even though, we are now in the era that many people going to school even university to get the education, somehow the lack of critical thinking skills caused people only believe what they hear and see without seeking the truth information. As we can see in the media many people died just because the conflict of misunderstanding and lack of critical thinking in processing information.

How one people think is different from other people's way of thinking, there is no way to think exactly the same. This is often referred to as a difference in perception or viewpoint. Become a critical thinker is not as an obligation but a necessity. Encounter varying complexity in everyday life that constantly changing, each individual is required to be able to adapt and master the various rhythm in everyday life. With so many problems faced, critical thinking skills will help the individual to be more resilient to take the best decision. [14] in the literature develop the concept of identifying the factors that influence the development of critical thinking skills in individuals, especially in the educational setting. These factors are (i)educator; (ii) students which are included in this variable is the level of involvement of students in a material, motivation and interest of students to the material provided; (iii)individuals characteristics, which are included in this variable such as gender, age, ethnicity, socioeconomic level, intelligence, and education; (iv) learning style determines on how individuals adapt to the learning environment; (v) another factor that can affect the development of critical thinking skills of individuals is related to the educational system of class size, the size of the institution and the environmental elements. It presents a challenge for students, teachers and teacher educators to identify and recognize their own beliefs about learning and effective teaching and to clarify, develop, and involves a variety of learning

Now we will begin to examine whether critical thinking skills generated through the learning process or individuals who have above-average ability or gifted that have the critical thinking skills that better? A Recent study by [15] investigated the critical thinking skills of fourth-grade students from a school district in Texas, including 45 identified gifted students and 163 general education students. Identified gifted students outperformed general education students on both the Cornell Critical Thinking Test and the Test of Critical Thinking, the result Identified gifted students demonstrated advanced critical thinking skills compared with general education students. Based on this research we might conclude that the critical thinking skills are the ability obtained from birth, where a gifted child will have the critical thinking skills better. I agree that the IQ (Intelligence quotient) better will make a positive contribution to the various capabilities of individuals, including critical thinking skills. In addition, in his research Kettler mention about relevant literature identifies several characteristics representing advanced skill development typical of gifted students. First, there is a relationship between advanced cognitive ability and processing speed, students with higher levels of intelligence generally process information faster than average-ability peers on both simple and complex tasks Second, gifted students are generally more thorough problem solvers than average-ability peers. Gifted students have also demonstrated a wider variety of strategies during problem solving than age peers. Fourth, gifted students generally are able to sustain attention to a problem or task in ways their nongifted peers do not. Fifth, evidence suggests that students with higher levels of cognitive ability have superior memory and more efficient retrieval when compared with nongifted peers. However, in spite of some attention afforded to developing critical thinking skills among gifted students, the literature of gifted education has not actively advocated for using documented levels of critical thinking as a foundation on which to differentiate instruction.

Based on the above presentation, we might draw the conclusion that indeed gifted children who have various advantages in displays critical thinking skills. They are supported by a wide range of capabilities like cognitive ability, problem solver skills, the wider variety of strategies, superior memory and sustain attention to a problem that really need to become the critical thinker. I agree that the ability is above average, children with gifted abilities will be able to explore the critical thinking skills they have. But it should be noted that despite a sharp knife when not in use or sharpened in the end it will be blunt. The same would apply to

gifted children who are not properly trained and stimulated, then the critical thinking skills may not be used properly. Critical thinking skills are not capabilities that will continue to be owned by any individual. The ability of critical thinking requires effort and willingness of individuals to continue to nurture it because the problems each individual facing is not the same every day so that the individual must always be ready with the problems that may arise. The more often people train and use critical thinking skills they have will help improve the quality of critical thinking skills.

Therefore, to train critical thinking skills to need a media that can help to bridge the increase of critical thinking skills, this applies to all individuals both children who have average ability or gifted. Media here meant education, education that has a clear plan and appropriate method can help improve critical thinking skills. One method that can be used to improve education is the active learning method. Active learning methods geared student to participate in the whole process of learning, not only mentally but also physically involved.

3.2. Critical Thinking And Learning Process

The mission of educational institutions is to encourage the student to become a critical thinker, but in fact, the belief of educators to create is nonlinear in student learning methods. In a study conducted by [16] found that most educators only understand the critical thinking skills based on personal experience rather than on theory. In addition, educators also indicated that they have no formal training in developing a method of learning that can encourage critical thinking skills. Nevertheless, educators believe that what they understand about critical thinking can meet the objectives to be achieved in the classroom. [17] explain that critical thinking is the ultimate goal of higher education. In most high schools, education levels are still at "lower-order thinking". Students are mostly passive in receiving the information and the information obtained is used only in doing the test. Whereas the main purpose of teaching students is to teach students how to think, that will help students become learners and thinkers who can steer yourself (self-directed).

Critical thinking skills can be improved in classroom activities when students are required to actively solve the problem. For example, when students are assigned to define or clarify an issue, students will assess which information is relevant and irrelevant, seek additional information is needed and formulate the right questions. By encouraging students to analyze, synthesize and evaluate when students are required to solve the problem, educators will also help students become good thinkers [18].

Teachers have an important role in helping students to improve their understanding, knowledge, activities, problem-solving skills, observation and other learning activities. Schools and teachers can help prepare students to meet the needs and demands of the social environment. Teaches things that are generally not efficient in preparing students for their future. We hypothesize that much of the reason students do not engage in these behaviors is because the educational environment provides few opportunities for this process. Students ought to be explicitly exposed to how experts engage in critical thinking in each specific discipline, which should, in turn, expose them to the nature of knowledge in that discipline.

Active learning is a learning accustom students to learn actively. When students learn actively, it is meaning that students who dominate the learning activities. In addition, student actively uses the brain, either to find the main idea, from lectures, solving problems, or apply what they had learned into the problems that exist in real life. The core elements of active learning are student activity and engagement in the learning process. Active learning is often contrasted to the traditional lecture where students passively receive information from the instructor. During the process of teaching and teachers tend to use conventional learning

models. Learning with these conventional methods are more highly abstract and theoretical. For example, in mathematics, students crammed with lots of formulas to memorize. So when given the word "mathematics", which imagined in their minds only so many formulas and calculations difficult problem.

The American Psychological Association Task Force on Psychology Major Competencies (2007) identified critical thinking as one of 10 learning goals for psychology majors. There is much evidence that critical thinking skills can be taught and learned [19]. [20] proposed a four-part model for teaching critical thinking skills that consists of (a) explicit critical thinking skills instruction, (b) encouraging students' disposition or attitude toward effortful thinking and learning, (c) directing learning activities in ways that increase the probability of trans-contextual transfer, and (d) making metacognitive monitoring explicit and overt. Through a supportive learning atmosphere, it can facilitate the individuals to develop critical thinking skills. Educational institutions must realize that it is important to develop thinking skills in students, explicit instruction in critical thinking causes students to transfer those skills taught in the classroom to their lives.

4 Conclusion

[21] wrote that after more than 20 years of lamentation, exhortation, and little improvement, maybe it's time to ask a fundamental question: Can critical thinking actually be taught? A Recent study by [15] investigated the critical thinking skills of fourth-grade students from a school district in Texas, including 45 identified gifted students and 163 general education students. Identified gifted students outperformed general education students on both the Cornell Critical Thinking Test and the Test of Critical Thinking, the result Identified gifted students demonstrated advanced critical thinking skills compared with general education students. Based on this research we might conclude that the critical thinking skills are the ability obtained from birth, where a gifted child will have the critical thinking skills better. In addition, decades of cognitive research point to a disappointing answer that critical thinking can't be taught. People who have sought to teach critical thinking have assumed that it is a skill, like riding a bicycle, and that, like other skills, once you learn it, you can apply it in any situation.

Critical thinking is not a set of skills that can be deployed at any time, in any context. It is a type of thought that even 3-year-olds can engage in—and even trained scientists can fail in. And it is very much dependent on domain knowledge and practice, furthermore in classroom activity method of learning hold important rules for increasing critical thinking skills by continue practice [21]. This statement is consistent with the statement [2] which states that a professor or educator must create activities and tasks that can actively encourage students to learn the material provided which can encourage critical thinking skills in students. The teacher can ask students to learn first before starting the learning process, so student already having a concept and basic principles regarding the material. This concept according to Elder and Paul can be divided into three main ideas. First, the proper technique is given by the educators, students can internalize information and concepts that they get even the new information. Second, internalization might be not enough, teachers should continue to encourage students to continue to think about the materials that get, therefore, a teacher might us technique like short writes, where students are asked to write a conclusion and what information they get during the material submitted. Lastly, in order to develop critical thinking skills, students are encouraged to engage in discussions with other students. This process

involves the process of expression and questions so that each student has the opportunity to evaluate their own and other people's opinion, the appropriate expression of existing data and be able to clearly express his own opinion, this process will encourage students to think critically.

Concern over critical thinking skills, over the last several decades, many educators, employers, and organizations have questioned whether today's graduates in the USA will be prepared to meet the demands of the 21st century workforce, which one of the skills that need is critical thinking [22]. Research that conducted by [23] provided evidence that scores on a critical thinking assessment can predict real-world outcomes. One of the major goals of education reform is increased critical thinking skills instruction, and there is evidence that the knowledge gained from critical thinking instruction does transfer to the real world. (Fong in Butler, 2012)

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