Critical Thinking in Education: Skills and Strategies

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ABSTRACT: At present, both online and offline lives benefit from the democratization of information. While this, of course, creates several advantages, the question is whether the fast and unlimited access to information leads citizens to be well informed and better equipped to make good use of the information they receive in a time that is characterized by the proliferation of fake news, unethical policy makers, and biased media. The situation requires one to know how to think reasonably, interpret information, make sensible decisions, and solve problems. All along schooling, critical thinking is vital in personal and professional daily life to face present and future challenges.

Critical thinking, researchers and specialists agree is neither innate, nor effortless but acquired in a systematic and mobilized way. It is one of "the UN's 17 Sustainable Development Goals». Before students can become critical thinkers, teachers themselves need to benefit from teacher training opportunities to develop and use critical thinking abilities to ignite and foster students 'critical thinking as well.

In this paper, I will show some effective teaching-learning strategies to develop critical thinking skills and discuss their importance in order to face the multiple changes and challenges of the present and future era.

KEYWORDS: Critical thinking skills, digital age, misinformation, teacher training, sustainable development

INTRODUCTION

Critical thinking is hard to define as there is no general agreement or clear- cut definition of what critical thinking is. Davies and Barnet (2015, 10) cite the American Philosophical Association that describes the concept as:

''…. purposeful, self-regulatory judgments which results in interpretation, analysis, evaluation and inference. Critical thinking is a liberating force in education and a powerful resource in one's personal and civic life''.

Critical thinking is a combination of knowledge, attitude, and performance of every individual. It is believed that critical thinking, processing and evaluation of previous information with new information result from inductive and deductive reasoning of solving problems .It is also defined as ''thinking about thinking in an intellectually disciplined manner'' (Paul, 2005, p. 28) that is ''purposeful, reasoned, and goal-oriented'' (Halpern, 1998, p. 450) aimed at ''deciding what to believe or do" (Ennis, 2011, p. 1). Gelder (2005) also believes that '' critical thinking is hard. And most people are just not good at it». 'Becoming good at it is a life-long journey which starts early''

(Kuhn and Dean 2004, pp 171.2)

Lauwereyns (2010, p. 5) believes that the mind has a predisposition to ''choose the least resistance, or the cheapest concept' 'This is called ''cognitive economy'', which results in using heuristic or ''a simple procedure that helps to find adequate, though often imperfect answers to difficult questions'' (Kahneman, 2011, p. 98) to make decisions quickly. In most cases heuristic thinking leads to biased thinking as humans think and behave according to their personal fallacies and cognitive prejudices. This happens when we tend to look for and interpret information which reflects what we already believe while overlooking any contrary or discomforting evidence or truth. By becoming more aware of these pitfalls resulting in faulty reasoning, can we avoid them?

The good critical thinker is ''naturally inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation and honest in facing personal biases'' (Facione, 1990). Critical thinking is a skill based on interpretation and analysis but also a character trait based on open-mindedness and inquisitiveness. In all life spheres, critical thinking is viewed as essential; in the academic sphere, it has a transversal importance. However, there are no clear measures and strategies to teach critical thinking and make it viable and obvious in the faculties' institutional discourse. The previous University Reforms' objectives, guidelines and the curriculum do not feature opportunities for students to develop their critical thinking potential. It is simply assumed that critical thinking is nourished in Higher Education, as well as other ''new 21st century skills''.

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Critical thinking is essential not only in the classroom for academic success, but in everyday life, in dialogical interaction and decision-making; it should be practiced to do research, gather, interpret and use information. Yet, this does not happen without labor.

The new media have provided an easy and almost effortless possibility for everyone to broadcast views and share information within the web. This double-edged democratization of information possesses serious drawbacks. The web is submerged with fake, incomplete, biased, deceptive information, which is taken in by the average person without a critical attitude and this is where the problem lies and which must be addressed. Present and future time challenges require new skills such as ability, disposition, knowledge and analysis. (All four are key dimensions of critical thinking). According to the 2016 World Economic Forum report on the future of jobs, critical thinking is a vital skill by 2020 especially regarding some of its elements such as complex problem solving, judgment and decision making, and deductive and inductive reasoning. Besides, the 2018 World Bank's report places critical thinking as a foundational skill.

Critical Thinking and Teacher Education:

As stated earlier, we all agree that critical thinking is important, but there is a lack of consensus about what critical thinking is and how to approach the teaching of it .In all disciplines, university students are expected to have and display critical thinking skills. However, this ability seems to be blocked by psychological and sociological factors, and pressures towards conformity. ''Not only do university students struggle with critical thinking but all humans do'', (Van Gelder, 2005).

To understand these factors and how they affect thinking processes can lead to better critical thinking abilities. The fact that all human thinking is largely dictated by psychological and sociological factors matches the opinion that several critical thinking elements may be transferable. In this respect, two views stand out; the ''specificists'' believe that critical thinking can only be taught within a discipline (Moore 2011), whereas the ''generalists'' hold that elements of critical thinking are generic and transferable so they can stand alone (Davies, 2013). In most educational institutions, critical thinking is mostly treated in a generic way. The heavy teaching load makes it difficult to add teaching critical skills for each subject and knowledge area. However, it is difficult for students to transfer the skills they learn in a context to another. This proves that there are specific thinking skills for different areas of knowledge. Daniel Willingham admits that critical thinking is domain-specific-a specific skill related to a specific area of knowledge.

Educators in general give vague and weak responses when asked about what critical thinking is. Among the common answers to this question we find:

''teaching students how to think'', "teaching them to be thinkers'', "teaching them to think independently", "teaching them how to solve problems", and "teaching them formal logic''. But students know already how to think and logic is only one element to foster critical thinking.

For various reasons, general teacher training programs do not comprise the promotion of critical thinking. There is a well-established focus on transmissive knowledge, which is considered the heart and matter of the teaching and learning process; therefore teachers lack knowledge about or are reluctant to promote critical thinking in an explicit, deliberate and systematic way to make their students critical thinkers in and outside the classroom. At present, learning theories are based on the principle that learning is an active process of constructing knowledge rather than acquiring it and that instruction is the process by which this knowledge construction is supported rather than a process of knowledge transmission (Duffy & Cunningham, 1996). In this respect, learning is viewed as the construction of meaning rather than as the memorization of facts.

For many years, traditional teaching has emphasized content. Course materials have been written around textbooks and teachers have taught through lectures and presentations interspersed with tutorials to consolidate content. Contemporary social and technological developments are now favoring curricula and methodologies that foster competency and performance. Curricula are designed to emphasize critical thinking, autonomy and focus more on how the information will be used rather than what information is.

In the past, teachers were the only source of knowledge which was derived from books and teacher training programs. At present, however, teachers are obliged to keep up with the world changing around them. They constantly need to search for information through various online sources to upgrade their knowledge and integrate it in their teaching material to deliver to students who used to rely mainly on the teacher and books to develop concepts and construct knowledge; Once a sole instructor and source of knowledge, the teacher has become a mentor, guide, and facilitator who has to use new technologies to offer new learning possibilities. This dramatic change in the teachers' role requires the acquisition and development of a totally different set of new skills, techniques and attitudes by teachers to impart and deliver knowledge.

This leads us to another confusion which lies between access to information and knowledge construction. New technologies offer an infinite access to information; but imparting information does not easily lead to knowledge construction. In the past, the traditional process of teaching has been based on teachers planning and developing students through a series of instructional sequences to meet the learning objectives. Typically, these modes of teaching have revolved around the planned transfer of a body of information/knowledge followed by some forms of interaction to ensure and build the knowledge acquisition.

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Based on studies on the importance of teaching critical thinking; teacher training should include a set of aspects that feature abilities and dispositions that will help students reflect, argue for and against, create, collaborate and make meaningful decisions, (Buskist & Irons, 2008). Equally important is to make full use of the possibilities offered by digital tools and virtual teaching and learning environments to stimulate students and make them more active learners in order to meet their ''millennium'' technological abilities and aspirations. For teacher training to be meaningful and beneficial, it should comprise the 21st century 4 Cs: Communication, Collaboration, Creativity, and of course Critical Thinking.

The real challenge that education faces now is not only to find and use appropriate material and technology but also, and perhaps more importantly, as a result of the new situation to rethink the present educational model that was developed during the Industrial revolution and which many believe is no longer appealing to students, nor is it preparing them to cope with the ever evolving society and the job market environment. (Mandernach, B. J. 2006).

Teachers are now blamed for being resistant to adopt new technologies and for not integrating them into their teaching. But very few give due importance to the changing role of teachers. At present and in every reform, the focus seems to be on what needs to be done to train teachers on how to use technology in the classroom more efficiently, but almost no one is discussing the changing role of teachers. During the Covid-19 pandemic, the rapid and unprepared large-scale transition from traditional education to one having to adapt to the rapid proliferation of technologies in ICTs has not been easy for all those involved. The functional role of teachers within this approach not only requires a change in their methodological practices but also a change of mind involving their beliefs in and assumptions about how teaching can be delivered and learning achieved. Education may not be a panacea to all society's problems but it plays a crucial role in finding solutions for many challenges that spring along a more and more globalized future which requires one to think and also act critically by having a mix of abilities.

Researchers suggest several ways concerning how to promote critical thinking in teacher initial and continuous training. Vong and Kaerwurain 2017 Study proposes a way to improve critical thinking ability and how to teach it in eight steps:

-triggering activity;

-identifying the problem;

-investigating related data;

-discussing findings;

-evaluating findings;

-creating solutions;

-presenting solutions;

-reflecting on solutions.

According to the above authors, this model has shown to be effective in improving teachers 'ability to develop critical thinking skills.

The educational system should be in a position to devise meaningful learning through engaging content. To keep up with the new instruments, materials, and resources that are constantly changing and to deal with the young and digital generation, education professionals and especially teachers have to reinvent the teaching profession and role of the teacher. Our traditional understanding of education must be revisited. A question that needs to be asked here is whether learning is still the most desired goal of education. According to the (UNESCO's Conference 2015, p. 18), education and knowledge are global common goals and individuals learn to attain and create useful goals. This is what is referred to as education for a "public good", especially in a time marked by a relentless development of technology which creates close but also "distant networks". A renewed vision of education should develop critical thinking, independent thinking and debate. As teachers have become facilitators, an active and innovative pedagogy, hands-on and interdisciplinary activities can help students acquire and develop transversal skills and implement them. Critical thinkers are prone to approaching common public challenges with a hands-on conduct ignited by an ethical and committed attitude'' (Vieira et al., 2011).

There is a substantial amount of literature that talks about teaching and learning strategies to promote critical thinking; a central one is to train students to write argumentative essays to explain their point of view, use activities that ignite reflection, analysis and debate (Dunn et al., 2008) with the help of technological tools to design innovative activities. Studies have also shown their efficiency in increasing critical thinking levels among students. "The role of teachers and other educators remains central to fostering critical thinking and independent judgment, instead of unreflective conformity" (UNESCO, 2015, p. 83). Today's students should not only think but think differently and should not only remember knowledge but use it by adopting different learning styles though research has shown that those with a converging learning style achieve better academic performance than those with other learning styles.

CONCLUSION

Based on several teachers' observations, most students tend to accept uncertainty and tolerate ambiguity and are most of the time not capable of judging what is credible or reasonable. They are also inclined to leave some issues unquestioned or unresolved. For this and other reasons, critical thinking skills are indispensable to face the complexities of the modern world that is saturated with

information overload and digital communication. By questioning assumptions, by being mindful of biases, people can make better-informed decisions and succeed in a rapidly-changing world. For students, critical thinking skills are fundamental to the educational process. They enable them to engage with academic subjects in a meaningful and enriching way. Instead of simple memorization of facts, critical thinking helps students to ask questions, analyze information, and connect concepts in a transversal way. It also encourages open-mindedness and a predisposition to consider varied perspectives. "Critical thinking helps students develop competencies that will serve them throughout their professional lives" (Dunlap, Van Liere, Mertig, and Jones, 2000). Media literacy, part of critical thinking, makes people well-informed and better consumers of information. "Critical thinking prevents individuals from being susceptible to manipulation. Moreover, critical thinking allows people to solve problems more creatively, independently, and effectively" (Stenberg & Halpern, 2020). Society is increasingly complex and therefore requires complex thinking. Critical thinking is not natural but learnable. A good critical thinker is one that can cope with an era of rapid change and certainty by developing innovative strategies, making sound judgments and decision.

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