

Critical Thinking in the Contemporary Education: A Historical Approach

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Abstract

The aim of the present text is to analyse the place held by critical thinking in the current education system, showing at the same time the changes of perspective that have taken place during the last decades in the manner this discipline is being approached. Critical thinking has been focusing for decades on logical and informal argumentation, but nowadays it also approaches subjects as psycho-cognitive biases, skills in evaluating numbers and having the sense of proportions, the use of language, understanding of the world, having interdisciplinary knowledge, moral, legal and aesthetic reasoning. We may notice lately that the authors who theoreticize critical thinking go back to antique logic and to the Greek philosophy of education, with the purpose to draw connections between them.

Keywords: critical thinking, education, applied logic, Plato, Aristotle, educational subjects

1. Introduction

When it comes to contemporary education, we can notice a salient emphasis on teaching the abilities of critical thinking at every educational stage. The wave started in the 70's, when in the USA, a general dissatisfaction started among students concerning the inutility of formal logic, especially in the political situation of that time. They found that logic did not help them to understand the premises of the Civil War (Fisher 2019, 17). Concerning this situation, the first author who introduces a course of “Contemporary Logic and Argumentation” for university level is Howard Kahane. The author backs away from formal logic's language and uses an

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informal approach to present the basic concepts, but very applied to reality. His book is famous today and it was edited until the 14th edition this year being one of the best introductory books in critical thinking.

In the following years, critical thinking and informal logic started to be introduced in schools' curriculum and the preoccupation how to teach critical thinking raised considerably among educators. Critical thinking has started to be seen as crucial even from the early stages of schools. Matthew Lipman has put the basis of the "Philosophy for Children" program where he included exercises and applications that stimulated children's thinking in primary school (Fisher 2019, 13).

However, the differences in classifying and teaching the abilities of critical thinking made Peter Facione run a research whose purpose was to find a consensus regarding what critical thinking is and how it must be taught in schools. Together with a team of 46 critical thinking experts, Facione published a common definition of what critical thinking is: "purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based" (Facione 1990, 3). This definition is followed by a list of skills and sub-skills that are required to be taught in schools in order to form critical thinkers. These skills pass the border of just evaluating arguments. This research was a real fundament for critical thinking to be studied in schools and universities as a separate object. Nowadays, critical thinking cannot be missed in education curriculum, regardless the level of education.

2. The concept of critical thinking

The way we know critical thinking today as a research subject has its basis in the scientific work of the American philosopher John Dewey who, in his book *How we think* defines reflective thinking as the "active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends" (Dewey 1910, 6). In his studies concerning the human mind's mechanisms that determine the educational

process, Dewey identifies many types of thinking: stream of consciousness, belief, imagination and, the most important, reflection. Even if reflection is the starting point for rational thinking, the philosopher does not deny the other types of thinking's importance and utility. For example, he considers that imagination is the key for finding innovative solutions during the reflective process (Rodgers 2002, 844). This will be the warrant for later debates between critical thinking and creative thinking.

John Dewey sees the process of reflective thinking as a scientific method: the experience, the interpretation of the experience, identifying the questions that rise from the experience, finding the possible explanations, transforming the explanations in hypotheses and, in the end, testing these hypotheses (Rodgers 2002, 856-861). We can see that there is a very systematic way of how critical thinking can be put into practice.

Edward Glaser developed 30 years later together with Goodwin Watson the very well-known critical thinking test, *Watson-Glaser Critical Thinking Appraisal*. His definition of critical thinking continues the vision of Dewey's focusing on three essential elements: knowing the methods of applying logic and reasoning, owning the skills required for applying these methods and an attitude of being open to analysing everything an individual encounters in his lifetime, in other words, to have a critical spirit (Fisher, 2019, 9). We can notice here the focus on the individual to be willing to question the information he encounters and to be aware about the limits of his knowledge. That is to say critical thinking does not seem to be for everyone.

Seeing how the interest in teaching critical thinking raised, Robert Ennis proposes a model which analyses the critical thinking's components, a contribution that is worth being mentioned in our research. Ennis makes the distinction between dispositions and skills. Concerning the disposition to critical thinking, Ennis continues the idea of Dewey and Glaser, but offers a specific list of modalities of how an individual can show this disposition. For example, always trying to be informed, using credible sources and mentioning these sources, considering everything around in a thoughtful way, taking into

consideration the other's opinion in a serious manner and also being careful concerning the other's feelings, level of knowledge and level of intelligence. The other component of critical thinking is represented by a very laborious list of skills and sub-skills Ennis proposes which focuses on good reasoning abilities as elementary clarification, basic support, inference, advanced clarification, strategies and tactics (Ennis 1989, 4). We can see that the main part of critical thinking puts emphasis on the informal logic and argumentation abilities, but also starts to approach other psychosomatic components and does not ignore the feelings.

Nowadays, critical thinking is approached in a broader manner and does not limit itself to logic reasoning skills. The most recent books in critical thinking present subjects as: argumentation, logic reasoning, fallacies, psycho-cognitive biases, skills in evaluating numbers and having the sense of proportions, the use of language, understanding of the world, having interdisciplinary knowledge, moral, legal and aesthetic reasoning. We can see that the meaning of critical thinking extended comparing to the first definitions of the concept, but at the same time, its content does not seem to be very new. Even if numerous components of critical thinking are more specific today, we can find in a more refined way the principals of education that we encounter in Plato and Aristotle's work.

3. Critical thinking and the return to the ancient philosophy

Concerning the main object of analysis in critical thinking – formal and informal logic – we have to pay tribute to Plato and Aristotle. Plato showed a preoccupation for logic and dialectics in his famous *Dialogues*. He also recommended that dialectics had to be thought after 20 years, in *Akademia*. Plato approached some basic principles of logic as the law of non-contradiction or law of excluded middle, but the one that defined logic in a more systematic way was Aristotle. Aristotle developed the *sylogism*, a method to formalize a reasoning, to state new arguments and to appraise arguments based on formal validity (Thayer-Bacon 2000, 23). However, critical thinking was born from the need of better appliance of logic to

reality. Formal logic is essential, but there are contexts when the form is not enough to appraise an argument and in this way informal logic and critical thinking started to be shaped.

Both Plato and Aristotle put emphasis on moral education and they considered the virtue the main guide in life. In modern critical thinking's courses, the moral aspect is present in both indirect and direct ways. Concerning the indirect ways, we can state that there is a moral cloud upon all critical thinking lifestyle. The main moral principle is to not mislead the others. The most popular way of approaching this is through analysis of the fallacies in reasoning. The differences between approaching fallacies in nowadays critical thinking and ancient logic is that logic focuses on formal fallacies as affirming the consequent and denying the antecedent, whereas critical thinking approaches a various list of fallacies which is still updating today. Beside classic non-formal errors in reasoning as *ad personam* or *ignoratio elenchi*, critical thinking analyses the most common fallacies of daily life. For example, there are fallacies for almost every emotion such as hope appeal or envy appeal (Dobre 2014, 137-138). In most of the critical thinking books, the fallacies are not presented just to be careful of the other's reasoning and to sanction the faulty reasoning. They are presented in order to make aware and, most importantly, not to employ them against the others. Knowing the fallacies does not give us the right to use them in order to manipulate the ones standing in front of us or in any other immoral way.

In strong connection with the idea of not misleading, there is another frequently approached aspect in the theory of critical thinking: the use of credible sources. The sources we get our information from must be reliable, credible, and objective. Most of critical thinking literature approaches the next problems concerning the sources: the knowledge, the expertise of the source, the objectivity, the accuracy and the impartiality of the source (Moore and Parker 2012, 118). Concerning the expertise of the source, things are not new since the argument of authority is precisely analysed in rhetoric. The new aspect in critical thinking could be found in the substantial approach of analysing media and internet sources since the fake news

phenomena has a great impact today. In this sense, it was raised the problem of a digital literacy that became necessary for every individual.

Concerning the direct presence of moral dimension, the latest critical thinking books have separate chapters on moral reasoning. As a short outline, critical thinking literature focuses on value judgments and the difference between moral and amoral value judgments. They usually put emphasis on the two principles of moral reasoning: “If separate cases aren’t different in any relevant way, then they should be treated the same way, and if separate cases are treated the same way, they should not be different in any relevant way”, which can be called the consistency principle; “If someone appears to be violating the consistency principle, then the burden of proof is on that person to show that he or she is in fact not violating the principle” (Moore and Parker 2012, 441-442). There are also presented the major perspectives in moral reasoning starting, of course, from the virtue ethics of Aristotle.

Regarding the content taught in his school, Aristotle promoted many subjects as philosophy, grammar, gymnastics, nature sciences or music. He believed in interdisciplinary approach and valued especially the natural sciences. What can we extract from here concerning critical thinking? Critical thinking is not limited to a single domain. Critical thinking involves a highly complex theory that can also be seen as useful a tool to other areas. That is why today critical thinking has gained independence and became a core subject of teaching. For example, in the medical field, critical thinking became a necessary tool for an efficient diagnosing activity (Papp et al. 2014, 715).

Critical thinking requires both easy and complex skills whose appliance is made difficult if the individual does not posses some general knowledge or some specific knowledge in the area. The interdisciplinary aspect is seen as necessary for a critical thinker since he must notice if something is inaccurate in the information he encounters. One must pay attention both to the formal part of reasoning, but also to the content of the arguments.

In today's critical thinking we can find the concept of creative thinking as being in close kinship with Aristotle's thought. Even though at the first sight creative thinking might seem opposed to critical thinking, the latest researches proved their inseparability. Creativity implies the process of conception, while critical thinking assesses and evaluates what was already produced. Even if we talk about the most pragmatic outputs belonging to a most rational mind or the imaginative thoughts of an artist, the creative and the critical part work together. Anthony Weston states that throughout creativity the world of possibility is opened before our eyes and starting from this world of possibility, new ideas arise, new solutions to problems appear. With critical thinking these solutions are assessed and reasoned (Weston 2006, 10-11). Aristotle recommends activities like music studies or any kind of art in order to enhance our creativity. The same activities prove to augment the critical thinking abilities.

Plato and Aristotle were thinking that it is enough for an individual to rely on his mind capabilities, especially on logical reasoning, to discover knowledge and did not believe in the necessity of teamwork (Thayer-Bacon 2000, 26). Today's critical thinker is not exactly a loner. Of course, most of the processes imply working on your own. Authors like Richard Paul whose research in critical thinking relies especially on the assessing of our own thoughts have developed the theory of metacognition (Fisher 2019, 13). But then again some authors like J. Thayer-Bacon propose a new model of critical thinking where empathy has a crucial role in understanding ideas. They believe that critical thinking can be developed by working together and finding solutions by constant intellectual interactions (Thayer-Bacon 1993, 323).

In modern critical thinking, the authors continuously repeated that a critical thinker needs a natural disposition of analysing in a thoughtful way what he encounters on a daily basis, that the individual must be aware of its mind and aware of the things outside the mind. John Dewey uses in its comparisons rather a strong word for non-critical thinkers calling them "savages". Currently, the contributions to critical thinking assume the belief that it can answer to a general

necessity of our time. The problem of the growing irrationality of our societies (some authors as Daniel Kahneman and Dan Ariely believe that we are more irrational than rational) received an in-depth exploration in critical thinking, particularly from the psycho-cognitive point of view concerning biases.

With the recent necessity of introducing critical thinking in curriculum we observed that the basic elements of critical thinking have abundant affinities with the principles of education evoked by Plato and Aristotle. The ancient learning of grammar (in a higher levels) developed the proto-skills of today's critical approach to language; the studying of dialectics is echoed in today's logic and informal argumentation within critical thinking; the principles of teaching that merged the transmission of moral values with the intellectual skills are still assumed in the practice of critical thinking. The interdisciplinary is also promoted by critical thinking in many forms. Of course there are some differences concerning how a critical thinking is seen today and if critical thinking is for everyone. There are also some subjects that cannot be directly tied to critical thinking, for example gymnastics. Of course, in an indirect way, a critical thinker should be aware of his mind, as well of his body. In the multidisciplinary application of critical thinking there are also plenty of studies that prove its importance to other sports. Plenty of the educational principles formulated by the ancient Greek philosophers still have a significant application in today's world and, despite the fact that there were times when they seemed to be forgotten, nowadays there is a significant tendency to recover them in the studies and practice of critical thinking.

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