TEACHING CRITICAL THINKING SKILLS - "NON-STANDARD TECHNIQUES" OR NON-TRIVIAL PROBLEM SOLVING?

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Abstract:
The mastery of critical thinking is not at all about the externals, but about the nature of the interaction between teacher and students. It is the nature of the students' activities that is the determining factor in the development of critical thinking. The purpose of this article is to examine this issue in detail. The article also suggests somemethodological recommendations for teachers to develop students' critical thinking: creating problem situations in the learning process; solving non-trivial problem tasks; familiarizing students with the principles, strategies and procedures of critical thinking; creating choice situations (problem methods); organizing a dialogue in the process of solving problem tasks (interactive forms of teaching); writing students' reasoning with subsequent reflection; recognizing students' right to make mistakes and modelling situations of corrections.

Key words: critical thinking, critical thinking development methodology, critical thinking development theory

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"Critical thinking" is a very popular and much discussed topic, but very often the development of critical thinking is understood as a set of exotic methods of work, overlooking the deep essence of this phenomenon. In the minds of many teachers and methodologists, critical thinking appears as a kind of "equilibrium" of the educational process with the use of exotic teaching methods: "cinquain", "thick and thin questions", "cluster", "balls", etc. The use of these extravagant methods is noteworthy. It should be noted that the use of these extravagant techniques often turns into an end in itself. The most important essential characteristics of critical thinking (non-trivial problem solving, scientific approach, contextualization) are overlooked. And most importantly, the activities that ensure the development of critical thinking are overlooked.

It is quite common to see publications in methodological journals and on Internet resources with a rather simplistic interpretation of critical thinking. The understanding of this complex phenomenon is limited to an uncomplicated set of "acrobatic" techniques of work in the classroom. It should be noted that this is a very simplistic perception that discredits a rather useful pedagogical innovation. In this case, among other things, the essence of critical thinking is distorted. In addition, there is confusion about the tools of critical thinking.

The problem of development of critical thinking of students is actively developed by educators. Critical thinking is seen as a scientific approach to solve a wide range of problems, from every day to professional. Scientific thinking is

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usually associated with science as a field of research aimed at producing new knowledge about nature, society and thinking. While critical thinking is considered to be the practical application of a scientific approach to solve routine, professional and personal problems. It can be argued that for the Western pragmatic worldview, the concept of critical thinking has become a tool for improving the traditional practical thinking of its citizens, which began to fail under the conditions of rapid changes in the second part of twentieth century.

The founder of this pedagogical innovation professor of Columbia University and Montclair State College (USA) M. Lipman claimed: "Education has always had two fundamentally important goals - the transfer of knowledge and the cultivation of wisdom" [4 p. 1]. It should be noted that wisdom is understood in the philosophical sense - self-criticism of the mind, eternal forward movement [1, p. 273]; not just broad knowledge, but above all the ability to reason. According to M. Lipman, in stable traditional societies the first of these goals prevailed, in modern information society the advantage is given to flexibility and ingenuity rather than knowledge. He regarded his concept of education as inquiry as a harmonious combination of two fundamentally important goals for education - the transfer of knowledge and research to establish the truth. M. Lipman noted: "Scientists apply scientific methods to investigate problematic situations, students should do the same if we want to teach them to think for themselves" [5]. In his opinion, "when the problem is not probed independently, not included in some interests and motivations, the so-called education turns into a charade and parody" [5]. His words sound like a slogan for teachers: "The learning process in the classroom should be oriented to the process of scientific research". M. Lipman considered critical thinking as an urgent necessity for life in the modern world, because this complex skill allows to correctly solve a wide range of practical problems in any professional activity (architect, lawyer, doctor, etc.), in human relationships (situations of moral choice), in scientific activity, in everyday life [4, p. 2], etc. Consequently, critical thinking was considered by the founder of this pedagogical innovation as teaching the ability to reason.

Critical thinking is a means of teaching students a scientific approach to solving practical problems. It is based on hypothesis generation, testing, considering alternatives, proving and justifying. The term "critical thinking" implies that its subject must be convinced of the logical perfection, factual validity and value of any knowledge. This type of thinking is considered as an antipode of dogmatic (template) thinking. Undoubtedly, the introduction of training focused on the development of critical thinking is an urgent methodological problem of modern education. The 21st century will be a time when it is the mental abilities of individuals, rather than natural resources, capital and technology, that will determine the decisive line between success and failure, between leaders and slaves [7]. The ability to think critically ensures scientific, technological and social progress and is the key to democracy, and education plays a paramount role in its development. This fact has been recognized by philosophers, economists, educators [6, pp. 64-65].

The pedagogical innovation "critical thinking" came to us from the USA, where reflexive principles have been actively introduced into the educational process since the second half of the last century. In addition to M. Lipman, the scientific works of such critical thinking researchers as D. Kluster, D. Halpern, A. Crawford, C. Meredith, S. Matthews, R. Paul, R. Sternberg, D. Steele, C. Temple, etc. are widely known. Critical thinking is an extremely popular topic today. Populism walks side by side with popularity, so there is an urgent need

for answers to fundamental questions. What should be understood by critical thinking and how to organize work on its development? Why do we need to develop critical thinking at all? What should be the interaction between teacher and students to create conditions for the development of critical thinking? Without what kind of activity is critical thinking impossible to develop, and what can be safely dispensed without damaging the mental development of students? These are the main questions to be considered. Let us briefly summarize the theoretical foundations of critical thinking development.

As V. Davidov argued, a theory is a comprehensively developed and concretized concept, and a concept is an abstract beginning of theory building [2, p. 320]. In order to introduce critical thinking into pedagogical practice, it is necessary to first define the theory: what are the essential features of critical thinking?

The main functions of theory are description, explanation, foresight and practical application [1, p. 452]. Therefore, the theory should describe critical thinking (properties, structure); explain (what function does it fulfil? how does it develop?); anticipate (what conditions will ensure its full development?). Thus, it is necessary to answer the following questions: 1) what properties does critical thinking have? 2) what does it consist of (what is its structure)? 3) in what cases is it used? 4) what conditions ensure its development? 5) what levels is it characterized by or what stages does it go through in its development?

Only in the case of clear and coherent answers to these questions we will be able to develop and implement a teaching methodology aimed at the development of critical thinking of students. In order to organize training in critical thinking, first of all, it is necessary to create a "theoretical construct". In other words, a certain structure with a clear description of its features.

Let's consider the answer to the second question: what does critical thinking consist of? In the process of cognition, thinking has several levels: 1) general thinking; 2) object thinking (historical, mathematical, etc.); 3) critical thinking. Each subsequent level includes the previous one: 1) general thinking is a general process of information processing; 2) subject thinking is a process of information processing on a certain subject with the help of scientific cognition methods, enriched with subject and methodological knowledge; 3) critical thinking is a process of control over the course of general and subject thinking, their improvement. Critical thinking consists of certain attitudes of the researcher, orienting him/her to take into account the context, breadth of coverage of factual information, etc., as well as procedures aimed at ensuring logical perfection, factual validity and value appropriateness of reasoning.

The next question is: When is critical thinking used? This type of thinking is needed to solve extraordinary practical problems. When we are faced with real problems that cannot be solved with existing knowledge and skills, then we engage the principles, strategies, and procedures of critical thinking. This occurs during problem solving, inference, probabilistic evaluation, and decision making. F. Stancato noted that critical thinking is the formulation of judgments regarding the truthfulness and reality of statements or solutions to problems [8].

And finally, the last questions are: what conditions ensure the development of critical thinking, what stages does it go through in its development? The most important condition for the development of critical thinking is the creation of problem situations in the learning process. It is problem solving that provides mastery of the principles, strategies and procedures of critical thinking. J.

Dewey, M. Lipman, D. Kluster, D. Halpern, F. Stancato, N. Daoud, Z. Husin and other authoritative researchers spoke about the need to solve problems. The need for critical thinking arises when we are faced with complex choice situations that require careful deliberation and evaluation. A characteristic feature of this type of thinking is that the reasoning process is non-standard, non-standardized, and there is no ready-made solution. This means that the consequence of learning through critical thinking is the personal changes of students, i.e. their development: they reorganize their experience, master new knowledge and ways of solving problem tasks. From making simple assessment judgments and elementary argumentation, students move to a responsible way of thinking – the ability to carry out multi-factor analysis. Such analysis allows to identify substantial links in the system of social relations and to influence it appropriately. Multi-factor analysis involves identifying as many factors and conditions as possible that influence the course of the process. It also assesses the degree of influence of these factors and determines the significant factor and neglected ones. Subsequently, conditions are determined under which the initially negligible factor gains significance, and the originally significant one loses it.

It should be noted that empathy is a prerequisite for the development of critical thinking. It is the problem of learning that provides the internal motivation of the educational activity; encourages the teacher to introduce the students to the rules of critical thinking; requires the use of problem learning methods and interactive classes; and also focuses on the written presentation of solutions to problems and the organization of understanding of these solutions. All these conditions in the complex ensure the development of critical thinking in the process of learning [3].

In conclusion, to develop critical thinking it is necessary: to create problem situations in the learning process; to propose non-trivial problem problems; to introduce students to the principles, strategies and procedures of critical thought; to regularly create situations of choice (problem methods); to organize dialogue in the process of solving problem problems (interactive forms of learning); to provide a written presentation of students' reasoning with subsequent reflection; and finally, to give students the right to error and to model situations of correction of errors. Under such conditions of learning, the thinking of the students will become conscious, independent, reflexive, reasoned, controlled and self-organized, i.e. will develop thinking of second order (or high order, according to J. Piaget), which is called critical thinking.

References:

[1]. A philosophical dictionary. M.: Politizdat, 1991. 560 p.

[2]. Davdov V.V. Types of generalization in learning (logic-psychological problems of building educational subjects). M.: Pedagogics, 1972. 424 p.

[3]. Diyarova, A. (2024). Challenges that students face when working with theoretical material due to unformed critical thinking and the predominance of clip thinking. Mental Enlightenment Scientific-Methodological Journal, 5(02), 106–112. https://doi.org/10.37547/mesmj-V5-I2-14

[4]. Lipman M. Critical thinking: What can it be? // Institute of Critical Thinking. Resource Publication, 1988. Series 1. No. 1. 12 p.

[5]. Lipman M. Thinking in Education. Cambridge, 1991. P. 7–25. URL: http://www.philosophy.ru/iphras/library/deti/ch2.html

[6]. Melhorne G. Geniuses are not born: society and human abilities. M: Education, 1989. 160 p.

[7]. Paul R. Critical Thinking: What every Person Needs to Survive in a Rapidly Changing World. Center for Critical Thinking and Moral Critique Sonoma State University, 1990. 575 p.

[8]. Stancato F.A. Tenure, Academic Freedom and the Teaching of Critical Thinking // College Student Journal. September, 2000.