

## CHARACTERISTIC FEATURE OF ORGANIZING THE PROCESS OF WORKING WITH INFORMATION IN THE DEVELOPMENT OF LOGICAL THINKING COMPETENCIES

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**Annotation:** The success of using teaching technology, including the design of intelligent computer systems, is determined by the relevance of the socio-pedagogical idea underlying pedagogical technology. At present, the attention of scientists, teachers of higher and secondary schools has been attracted by the idea of developing critical thinking due to the lack of independence, social orientation, motivation and effectiveness of thinking of the younger generation. The article describes the technology for the formation of critical thinking, which is interconnected with the concept of problem-based learning and the technology of problem-based computer learning.

**Keywords:** thinking, intelligence, critical thinking, technologies for teaching thinking, didactic model of teaching.

### INTRODUCTION

*The technology for the formation of critical thinking includes goals, objectives, principles of construction, stages and conditions of formation, methods, techniques and ways of teaching thinking, forms of organizing the activities of students and methods for evaluating the results of forming thinking.*

*As a result of the analysis of theoretical and experimental data on the formation of critical thinking in primary and secondary school students, the most significant features of the process of teaching thinking can be identified. We list only those that it is advisable to use in practice when developing teaching technology or include methods, methods, and techniques chosen by the teacher. Thus, it is essential to take into account the fact that the independence of thinking of young children in the process of solving problems is manifested only in the use of analogy, which is expressed not so much in the "transfer" as in the "imposition" of experience on new objects and phenomena[7-9]. Critical thinking in preschoolers is diffuse in nature, manifests itself episodically. It does not reach the point of disclosing the causes of the detected errors; for the most part, critical judgments are not substantiated by them.*

### MATERIALS AND METHODS

*When teaching students, teachers can set the following tasks:*

*- assimilation by students of knowledge about the laws and methods of logical and critical thinking, about the foundations of criticality and self-criticism;*

- *students mastering the hypothetical-deductive logic of thinking with elements of criticality;*
- *teaching the ability to understand the logical procedures of critical thinking: explanation and prediction, proof and refutation, argument, argumentation, assessment and self-assessment.*
- *For junior university students, the level of tasks increases:*
- *formation of a system of skills to think critically in specially organized learning situations;*
- *formation of skills to identify logical errors of critical evaluation of phenomena, behavior;*
- *training in the application of logical, critical thinking skills in various scientific fields, practical activities and social life.*

## **RESULTS AND DISCUSSION**

In a generalized form, the main elements of the technology for the formation of critical thinking are presented by us in the structure of the didactic model (Fig. 1). The technology for the formation of critical thinking, like any technology, has its own principles of construction, which are based on the features of thinking critically that are different from other types of mental activity. We have identified seven principles, some of which are general didactic, while the rest are specific to critical thinking. Let's briefly describe each of the principles:

1. Information saturation of educational and practical material for the use of arguments, evidence or rebuttals based on specific facts, sources, data[8].
2. Social conditionality of the subject of understanding. Earlier we noted that critical thinking is social thinking, therefore, the selection of problems, tasks, topics for discussion should be carried out taking into account this special property of critical thinking.
3. Communication in the process of understanding the problem and its discussion. Critical thinking is individual and independent thinking, but it manifests itself in disputes, discussions, discussions and public speaking, so the communication skills of the participants in understanding the problem for the formation of this type of thinking play a decisive role in success.
4. Problematic content of the material. The general didactic principle is one of the main ones in the construction of the technology for the formation of critical thinking, because problematic and critical thinking are connected by common properties, methods and techniques of teaching.
5. Motivations and needs for knowledge. The main starting point of mental activity in general and the manifestation of the criticality of the mind, in particular, is reflection. It is possible only if a person is motivated, to learn, understand, comprehend, establish the truth or get a result, otherwise there can be no question of any criticality of the mind. That is why the results of the experimental formation of critical thinking indicate that not all students succeed in developing this type of thinking, but only 30-60% of the subjects, depending on the type of group and level of education. Sloth of the mind and feelings is a poor basis for the development of critical thinking.
6. Scientific, reliability and availability of information. This principle does not need explanation, we only note that the ability and ability to assess the reliability of information also relate to the ability to think critically.

The pedagogical conditions for the formation of critical thinking include the following:

- inclusion in educational standards and programs of goals for the formation of thinking and content that contributes to the conditions for the development of criticality of the mind;
- highlighting professional competencies and a system of skills and abilities to think logically and critically;
- training of teaching staff with professional competencies in the field of logical and critical thinking and knowledge of the methods and ways of their formation;
- coordination of research in the field of thinking development and exchange of experience of researchers and teachers on innovations in technologies for the formation of critical thinking through publications, conferences, seminars, master classes and special projects.

For students, the highest level of formation of critical thinking means the presence of integrative mental competencies based on the synthesis of logical, problematic, critical thinking and the ability to use these competencies in practical, professional and social activities[11].

The first component of the didactic model of the formation of critical thinking is associated with the activities of the teacher and the most important are the methods, methods and techniques for the formation of critical thinking.

The choice of teaching methods when using the technology of forming critical thinking depends on which learning system this technology is close to. When substantiating the methodological foundations of the concept of the formation of critical thinking, we have shown that theories related to the development of problematic, creative thinking, activity approach, organization and self-organization are basic for this concept[10]. Thus, the most optimal methods are problem-based learning - research, dialogic, heuristic, i.e. those methods where a “research reflex” is possible, where there is a question: “And if ...”, “What is ...?”

An important component of the didactic model for the formation of critical thinking is the generalization of the forms of organizing the activities of students in the application of the described technology, because the learning environment and the ways in which the participants in the process interact are crucial to achieving the goals of forming mental competencies. Almost all forms of organization of educational activities known in didactics are possible: individual, individually - group, pair, group and collective. However, group and collective competencies are most preferable in the formation of integrative competencies, because Let us recall that critical thinking is social thinking and is manifested to the maximum extent in public[13].

The psychological problems of assessing critical thinking are well described (R.H. Ennis, S.P. Norris) [12], we will limit ourselves to mentioning the pedagogical tools of the assessment process. Private assessment methods include tests with ready-made answers; tests with alternative answers; keeping a protocol of observations of the discussion process; individual protocols of self-analysis of the trainee according to the proposed algorithm. General assessment includes particular methods applied to tasks of various types and in various subject areas. At the same time, the final assessment should be cumulative and quantitatively expressed in the form of a rating of skills for the entire course of study. Moreover, the highest level of

criticality is assessed in the process of practical activity and can sometimes be delayed, i.e. assessment is carried out after graduation in a professional situation.

## CONCLUSION

The above technologies for the formation of critical thinking, which is based on a didactic model, can serve as a general guide for a teacher who, before each lesson, chooses methods that are adequate to the goals and objectives, specific teaching methods, forms of organizing activities and evaluating learning at a lecture, seminar, and practical lesson.

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