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THE MAIN MECHANISMS FOR THE DEVELOPMENT OF CRITICAL THINKING IN THE EDUCATIONAL PROCESS OF HIGHER EDUCATION INSTITUTIONS

Abstract: This article analyzes the mechanisms of the development of critical thinking among students of higher educational institutions. The importance of introducing innovative pedagogical technologies into educational processes in the development of students' critical thinking competencies is substantiated. The development of critical thinking reveals the essence of the development of such skills as independent thinking, information analysis, problem vision and its formulation, asking questions and finding answers to them, finding your own solution to the problem and arguing the most correct ones in relation to others, interacting with other people to gain new knowledge.

Key words: intelligence, critical thinking, motivation, teaching methods, innovative pedagogical technologies, mechanisms for the development of critical thinking, modern education.

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Introduction

One of the actively developing areas of reforming the system of modern higher education is the focus on the development of thinking and critical thinking of the individual, which implies the presence of skills of reflection on one's own mental activity, the ability to work with concepts, judgments, conclusions, questions, the development of abilities for analytical, predictive activities, problem vision, the search for alternative, innovative forms, means and methods that contribute to the rational solution of tasks and problems, and also to evaluate the similar capabilities of other people, which makes the development of this type of thinking an important condition for the formation of a competitive personality of a future specialist.

Recently, significant changes have been taking place in the information field. Trends in the development of modern society: informatization and computerization of all spheres of human activity, including. intellectual, and therefore the field of education, ultimately lead to the fact that (and probably in the foreseeable future) the media text will become the main form of presentation of any information and educational. Already, a significant part of the educational content is presented in the form of media text on the Internet, in various electronic textbooks and educational complexes that offer students materials in text, audio and video formats. In such situations, a modern student exists in a world of oversaturated information, he actively uses the possibilities of cellular communications, e-mail, television, the Internet, and educational information in such an information field occupies an increasingly less significant place.

A modern student receives a stream of new knowledge and concepts every day through information providers who arrogate to themselves the right to teach, show how to live, but do not seek to submit verified, scientifically based, truthful information. The information chaos that the student is increasingly facing requires him to be able to work with information, which in turn implies a high level of development of "critical thinking". However, there is no generally accepted definition of the term "thinking" and "critical thinking" in either foreign or domestic

scientific literature. However, the phenomenon of critical thinking is not an exclusively scientific category. But it is of great practical importance for modern society, especially in the conditions of the XXI century.

Modern science is characterized not only by the formation of new concepts, but also by the enrichment of the content of long-known concepts, the expansion of their scope. The uncertainty of the conceptual and categorical apparatus, characteristic of modern science, sets the researcher the task of clearly defining key concepts that play a very significant place not only as a concept of pedagogy and theory of psychology, but also as a general scientific concept. In our opinion, considering the concept of "thinking" and "critical thinking" as a scientific category will not only serve to explain the knowledge already gained, but will also play an increasing role in the further development of the cognitive process.

The use of the entire richness of the content of the concept of "critical thinking" is, in principle, carried out only in the entire complex of scientific knowledge and in the very long development of relevant private pedagogical theories. Since not all the content of the concept is currently used in them, this makes it possible to predict the likely development of a particular theory, revealing the corresponding contradictions inherent in it, which have not yet fully manifested themselves in its development. As a manifestation of meaningful cognitive critical thinking, it has attracted special attention from the scientific community since the 80s. of the last century. Over the past almost three decades, a considerable number of definitions of this term have been proposed in the literature.

What is critical thinking?

The category "thinking" refers to interdisciplinary concepts and is the subject of study of various sciences (philosophy, psychology, pedagogy, physiology, sociology, etc.), however, based on the specifics of the work, its consideration was carried out in a philosophical, psychological and pedagogical context.

Analysis of the views of philosophers (Abu al-Walid Ibn Rushd, Averroes, F. Aquinas, Aristotle, F. Bacon, G. Hegel, T. Gobs, R. Descartes, Ibn Bajji, I. Kant, A. Canterbury, N. Kuzansky, Parmenides, Plato, P. Pomponazzi, Socrates, B. Spinoza, etc.) he showed that in philosophy "thinking" is considered as: an immaterial phenomenon characterized by objective relatedness and having several forms; the ability to independently cognize reality, create, solve and act according to certain rules; a necessary element of cognition; the absolute essence of nature, man, and world history, independent of man and humanity.

In psychology, thinking is one of the actively developed categories, and its essence acquires specific features depending on the context of consideration. In many psychological studies, the concept of "thinking" is considered identical, although not identical to the concept of "intelligence". As shown by the analysis of theories in which an attempt was made to compare or compare the concepts of "intelligence" and "thinking", intelligence plays the role of a concept that combines the cognitive and creative abilities of an individual. And "thinking", in turn, accumulates the intellectual abilities of an individual to solve a variety of problems and tasks. Consequently, the process and result of an individual's thinking depends on his intellectual abilities, but intelligence develops due to an improvement in the quality of cognitive and creative abilities. That is, the development of thinking is simultaneously a process of developing intelligence.

In modern pedagogy, thinking is most often understood as "an indirect reflection of the external world, which is based on impressions of reality and enables a person, depending on the knowledge, skills and abilities he has acquired, to correctly operate with information, successfully build his plans and behavior programs" (Ped. encyclopedia. dictionary). It is determined that along with the term "thinking" in pedagogy, the concepts of "mental development" and "mental education" are often used. Although these two concepts are close in meaning, they have some significant differences. "Mental education" is a process aimed at the subject of education, "mental development" is a process of change inherent in the subject of educational influence. At the same time, mental education largely determines and contributes to mental development, but this happens only if the patterns and possibilities of mental development of the subject of pedagogical influence are taken into account. Therefore, in pedagogy, much attention is paid to the study of the peculiarities of the ontogenesis of personality thinking.

The analysis of the category "criticism" has shown that it is mainly used in two meanings: as a negative, negative attitude towards something and as making an opinion about something based on an analysis of facts. Here, the concept of "criticism" is crucial for the direction of the thinking process and refers to the process of analysis, inference, therefore, we consider criticism in a broad sense, as an analysis of the essence, patterns and results of phenomena, with the aim of making an objective judgment. Today, in the global pedagogical community, one of the most popular sources for answering the question: "What is critical thinking?" is an article of the same name by David Kluster. In this short work, the author formulates five signs of critical thinking, considering it as independent, problematic, analytical and information-based thinking [1]. His colleague Diana Halpern gives a slightly different list of KM properties: controllability and validity, purposefulness, logic, cynicism [2].

Critical thinking works on many levels, not content with facts, but revealing the causes and consequences of these facts. Critical thinking

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presupposes polite skepticism, doubt of generally accepted truths, means developing a point of view on a certain issue and the ability to defend this point of view with logical arguments. Critical thinking involves paying attention to the opponent's arguments and making logical sense of them. Critical thinking is not a separate skill or skill, but a combination of many skills"[3].

I.I. Ilyasov in the article "Critical thinking: the organization of the learning process" considers KM as analyzing, evaluating, problematizing [4, p.50-55]. A similar approach can be traced in the definition of V.A. Bolotov, which is considered as the ability to analyze information from the standpoint of logic and a personal psychological approach in order to apply the results obtained to both standard and non-standard situations, questions and problems [5, p. 67-73]. At first glance, a different approach is demonstrated by A. Veretennikova, in whose interpretation KM is a system of mental states, processes and properties aimed at producing evaluation[6]. However, upon familiarization with the fundamental principles of KM outlined by the author in the same article, it becomes clear that in this case KM is considered as independent, problematic, analytical thinking, etc. [6].

We observe a similar situation in the work of G.V. Sorina "Critical Thinking: history and modern status". The author gives a completely original definition of the term of interest to us: "Critical thinking can be interpreted as a form of practical logic considered internally and depending on the context of reasoning and the individual characteristics of the reasoning subject" [7, p.97]. Further, turning to the question of the skills that form the basis of KM, the author notes that it presupposes the ability to reflect on one's own mental activity, the ability to work with concepts, judgments, conclusions, questions, the development of analytical skills, to assess similar capabilities of other people [7, p. 98]. Which fits perfectly into the previously presented interpretations.

Thus, despite the variety of interpretations of the concept of KM, most authors agree on the fundamental skills characteristic of a critically thinking person. In general, all of them are close to the point of view of David Kluster, who considers KM as a set of five features:

First, critical thinking is independent thinking;

Secondly, information is the starting point, not the end point of critical thinking;

Thirdly, critical thinking begins with asking questions and understanding the problems that need to be solved;

Fourth, critical thinking strives for convincing arguments;

Fifth, critical thinking is social thinking[1].

The importance of critical thinking in literature is usually considered in three aspects: political, social and cognitive. In the latter case, critical thinking acts as a tool for verifying the reliability of knowledge, the

correctness of the decision made. For example, G. Lindsay, K. Hull, R. Thompson believe that "the purpose of critical thinking is to test proposed ideas: whether they are applicable, how they can be improved, etc."[8,]. A similar thought is expressed by Diana Halper: "critical thinking is characterized by making informed decisions regarding whether to reject a judgment, agree with it, or temporarily postpone its consideration"[9, p. 33-37]. In our opinion, critical thinking is understood as the manifestation of student curiosity, the development of one's own point of view on a certain issue, the ability to defend it with logical arguments, the use of research methods. So, critical thinking means evaluative, reflective thinking, it is open thinking that develops by superimposing new information on personal life experience.

When analyzing the term "critical thinking", it was revealed that it arose within the framework of formal logic, however, critical thinking is characterized by a practical orientation, which is why it can be interpreted as a form of practical logic considered inside and depending on the context of reasoning and the individual characteristics of the reasoning subject (G.V. Sorina). At the same time, one of the most important features of critical thinking is that through it an individual learns to analyze and construct reasoning based on logic and objectivity, argumentation of conclusions, obtaining knowledge that is the basis of the professional field of activity, rethinking his own prejudices and stereotypes in behavior, activity and thinking[10].

An effective means of activating the cognitive, reflective activity of students is the use of critical thinking methods.

The main mechanisms of the development of critical thinking

The need to develop students' critical thinking in the process of vocational training at a university, since at this age stage the highest speed of RAM and attention switching is noted, effective solution of verbal and logical tasks, therefore, adolescence is a favorable period for the purposeful development of this type of thinking. The developers of the pedagogical technology for the development of critical thinking through reading and writing (RCMP) K. Meredith, C. Temple, J. Steele generally agrees with the above-mentioned authors, giving their interpretation of KM: "To think critically means to be curious and use research methods: to ask questions and carry out a systematic search for answers. Technology is a system of strategies that combine the techniques of educational work by type of educational activity, regardless of the specific subject content. In other words, the formation of critical thinking means the development of skills such as the ability to think independently, analyze information, see a problem and be able to formulate it, ask questions and find answers to them, find your own solution to a problem

and argue it as the most correct compared to others, interact with other people to gain new knowledge.

One of the innovative methods that allow to achieve positive results in the formation of mental activity of University students is the mechanisms for the development of critical thinking. Such an effective means of activating the cognitive, reflective activity of students is the use of methods of critical thinking skills.

The use of methods and techniques for the development of critical thinking, while simultaneously activating the mental activity of a future specialist, contributes to the development of: the ability to ask questions; the ability to highlight the main thing; the ability to make comparisons; the ability to establish causal relationships and draw conclusions; the ability to see the meaning in information, to understand the problem as a whole; the ability to search, analyze, to be creative processing of information.

To ensure the fulfillment of the above tasks, a combination of the following pedagogical conditions will be required:

➢ formation of students ' stable motivation to develop critical thinking in the process of educational activities at the University;

➢ introduction to the educational process due to the variable component of the optional course aimed at developing the critical thinking of future specialists;

➢ the introduction into the content of general professional disciplines, disciplines of subject preparation of educational and professional situations that require informed decisions based on a critical understanding of the information received;

➢ activation of the creative potential of future specialists by increasing the share of creative forms and methods of teaching as an important factor in the development of skills for solving non-standard professionally oriented situations and finding alternative ways to solve them;

➢ The inclusion of special professionally-oriented tasks in the educational practice of students that contribute to the development of critical thinking.

The peculiarity of this pedagogical technology is that students in the learning process design this process themselves, based on real and specific goals, track the directions of their development themselves, determine the final result themselves. On the other hand, the use of this strategy is focused on developing the skills of thoughtful work with information.

In the works of Russian researchers addressing the problems of the development of critical thinking, these components are repeated in different ways. So, according to E.O. Galitsky, critical thinking is the ability to make responsible choices made in the process of joint activity, which implies a high level of information culture, the ability to analyze and draw independent conclusions, predict the consequences of their decisions and be responsible for them.

The technology of developing critical thinking of a future teacher has been developed taking into account the revealed contradictions of educational and professional activities of future teachers (socio-economic, organizational, pedagogical, professional and personal). It includes: diagnostic-designing, constructive-implementing, correctional-analytical stages characterized by relative independence, because they have their own goals, objectives and a set of organizational actions, and on which the transition from a passive to a progressive level of development of critical thinking is carried out. The developed technology has a personal and professionally oriented orientation.

The effectiveness of the development of critical thinking of a future professional specialist at a university is ensured through the implementation of a set of the following pedagogical conditions: the formation of students' stable motivation to develop critical thinking in the process of educational activities at a university; introduction to the educational process through a variable component of an optional course aimed at developing critical thinking of future teachers; introduction into the content of general professional disciplines, disciplines of subject preparation of educational and professional situations requiring informed decision-making based on critical understanding of the information received; inclusion in the educational practice of students of special professionally oriented tasks that contribute to the development of critical thinking; activation of the creative potential of future teachers by increasing the share of creative forms and methods of teaching as an important factor in the development of skills for solving non-standard professionally oriented situations and finding alternative ways to solve them.

Conclusion.

Modern education is focused on the development of professional competence of students, which for higher education can be considered as an integral characteristic that determines the ability to solve professional problems and typical professional tasks that arise in real situations of professional activity, using knowledge, professional and life experience, values and inclinations.

The development of critical analysis skills developed through the techniques of this technology are integral characteristics of a modern specialist, a graduate of a higher school. The formation of critical thinking means the development of skills such as the ability to think independently, analyze information, see a problem and be able to formulate it, ask questions and find answers to them, find your own solution to a problem and argue it as the most correct compared to others, interact with other people to gain new knowledge. Its development is included in the range of tasks of most theories of media education (socio-cultural, environmental, practical, cultural,

semiotic, protectionist) and is considered as a critical autonomy of the individual in relation to manipulative influence from the media.

Achieving such autonomy is possible with the ability to see problems that need to be solved; the ability to reflect on one's own and others' mental activity; skills in working with concepts, judgments, conclusions, questions; analytical thinking skills; striving for convincing argumentation, etc.

The formation of critical thinking, which manifests itself in the ability to argue one's own statements, find errors in the information received and make suggestions for their correction; perceive alternative points of view and express reasonable arguments for and against each of them; establish associative and practically expedient connections between information messages; isolate the main thing in an information message, separate it from "white noise." The mechanism of formation of students' critical thinking is the transformation of students' tentative research activity into an indicative basis for acquired skills, in the process of which the following research stages are traced (doubt (question) - goal–setting – self–determination – actions - reflection), in which the transformation of tentative research activity from an external form into an internal one – the thought of the subject.

The results obtained during the formative experiment indicate the following:

➢ the level of formation of critical thinking correlates with success in learning, communication, cognitive interest of the subject;

➢ The formation of critical thinking occurs most intensively in reflexive activity;

➢ The lack of knowledge of the mechanisms of formation of critical thinking and its use as a tool for improving the student's educational process indicates the need to teach the student and the teacher reflexive analysis of mental activity (intellectual, activity and personal reflection);

➢ when drawing up educational programs aimed at the formation of a student's critical thinking, his individual psychophysiological and personal characteristics should be taken into account;

➢ Critical thinking is the basis for the development of creative thinking.

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