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THE DEVELOPMENT OF STUDENTS' CRITICAL THINKING
РАЗВИТИЕ КРИТИЧЕСКОГО МЫШЛЕНИЯ СТУДЕНТОВ

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Аннотация. В статье рассматриваются технология развития критического мышления студентов в образовательном процессе вуза. Раскрыты исторические аспекты развития критического мышления студентов. Описаны приемы и стратегии развития критического мышления студентов.

Ключевые слова: студент, преподаватель, технология критического мышления развитие, приемы обучения

Abstract. The article considers the technology of critical thinking development of students in university educational process. The article reveals historical aspects of students' critical thinking development and describes methods and strategies for developing students' critical thinking.

Key words: student, teacher, critical thinking technology, development, learning techniques

A successful career starts with a good education. It is a universally recognized fact. Today the labor market is extremely mobile, so those people in demand who are able to change their profession actively, be ready for self-education, self-development. The purpose of education today is to prepare a competitive personality in demand on the labor market, to develop the students' need for self-improvement, self-education [1]. Instead of simply transferring knowledge, skills and abilities from

the teacher to the student, the priority tasks of education are developing the student's ability to set learning goals independently, design ways for their implementation, monitor and evaluate their own achievements, work with different sources of information, evaluate them and formulate their own opinion, judgment and evaluation on its basis. To implement these goals and find the best ways to solve educational problems I use techniques of critical thinking development.

Critical thinking is a type of thinking that helps to have critical attitude to any statements, not to take anything for granted without proof, but be open to new ideas and methods at the same time. Critical thinking is a necessary condition for freedom of choice, quality of forecasting, responsibility for own decisions. Critical thinking, therefore, is essentially a synonym for qualitative thinking. Along with this concept, also techniques came with a number of international projects to our life [2]. The critical thinking technology is one of the new educational technologies. American psychologists D. Steele, K. Meredith and C. Temple proposed it in the middle 0f 90s of the 20th century. The purpose of this technology is the development of students' thinking skills, which are necessary not only in the learning process, but also in the ordinary life, the ability to take reasonable decisions, work with information, analyze various aspects of phenomena and so on. This technology is aimed at the development of students, the main indicators of which are appraisal, openness to new ideas, personal opinion and reflection of judgments. The peculiarities of this technology are:

- the educational process is based on both the laws of interaction between the individual and information, and the laws and mechanisms of cognitive processes;
- various forms and strategies for working with text and organization of discussions can be used at the stages of the technology;
- technology strategies allow all training to be conducted on the basis of cooperation, joint planning and reflection principles.

The main goals and objectives of the critical thinking technology are:

1) the formation of a new style of thinking, which is characterized by openness, flexibility, alternative solutions;
2) development of basic personal qualities: communicability, creativity, mobility, independence, tolerance, responsibility for own choice and the results of personal activities;
3) development of analytical, critical thinking;
4) the formation of the ability to navigate in the sources of information, adequately understand what is read, sort the information in terms of its importance, "screen out" secondary information, critically evaluate new knowledge, draw conclusions and generalizations;
5) stimulation of independent searching creative activity, launch of self-education and self-organization mechanisms. Development of critical thinking technology can be considered integrating; it summarizes the developments of many technologies. It

provides thinking development, communication skills formation and ability to work independently. In connection with a wide range of techniques and methods included in the technology, each teacher can choose those that are close to him personally without breaking framework approach of this technology (all allowed is not forbidden).

D. Cluster singled out five characteristics of critical thinking:

First, critical thinking is independent thinking. When the lesson is planned on the principles of critical thinking, everyone formulates his own ideas, assessments and beliefs independently. No one can think critically for us, we do it exclusively for ourselves. Consequently, thinking can be critical only when it is of an individual character.

Second, information is the starting point, and by no means the ultimate point of critical thinking. Knowledge creates a motivation, without which a person cannot think critically, as they sometimes say, "it is difficult to think with an empty head." To create a complex idea, you need to recycle much "raw materials" - facts, ideas, texts, theories, data, concepts.

Third, critical thinking begins with asking questions and understanding the problems that need to be solved. Human beings are curious by their nature. We notice something new, and want to know what it is. We see a certain attraction, and we already want to get inside. However, the genuine cognitive process at any stage is characterized by the cognitive student’s desire to solve problems and to answer questions arising from his own interests and needs.

“Consequently, the complexity of critical thinking teaching is to help students see the infinite variety of problems that surround us” concludes John Bean.

Fourth, critical thinking tends to convincing arguments. A critical-minded person finds his own solution to the problem and supports this decision with reasonable, well-founded arguments. He also realizes that other solutions of the same problem are possible, and tries to prove that the solution chosen by him is more logical and rational than the others.

Fifth, critical thinking is social thinking. Every thought is checked and sharpened when it is shared with others. Or, philosopher Hannah Arendt writes: "Perfection can only be achieved in someone's presence" [3].

All five points of critical thinking definition can be embodied in various types of learning activities, but the best of them - for both teachers and students - is written work.

The process of thinking becomes visible and, therefore, accessible to the teacher on the written work. The writer is always active. He always thinks independently and uses all the knowledge he has at his disposal. He builds a worthy argument for reinforcing his opinion. Good written work contains a solution to a certain problem and offers the found answer to readers. Critical thinking development of students is

also carried out through oral and written speech activity in the analysis of fiction and journalistic texts, critical articles in the process of mastering subject knowledge and skills. The greatest opportunities for the development of personal qualities and intellectual skills included in the cognitive component of critical thinking are the texts, because they assume the formation of value orientations in the unity of ideological content, compositional and artistic-style features.

The technology of critical thinking development involves three stages of the constructive and semantic planning of the lesson.

The first stage (phase) is a challenge. The task of this phase and the activity of the teacher is not only to activate, interest the student, motivate him for further work, but also to elicit already existing knowledge, or to create associations on the studying issue, which in itself will become a serious, activating and motivating factor for further work.

The second stage (phase) - comprehension (the realization of meaning). At this stage, there is a direct work with information. Techniques and methods of critical thinking technology allow you to keep the student's activity, make reading or listening meaningful. Two of these stages are fundamental to any lesson.

The most important and interesting stage of the lesson of the proposed technology is the third stage (phase) - reflection (reflection). At this stage, there is a personal comprehension, the acceptance of the material and the use of it as a personal creative experience, the systematization of the material, motivation of students for a new stage of cognition.

At the stage of motivation, it is possible to use the "Concept Wheel" strategy. Students need to find synonyms for the word located in the core of the conceptual "wheel", and fit into the sectors of the wheel. For example, to the word integration, students call such words as connection, union, merging. This gives an opportunity to continue the conversation on the topic: "International economic integration".

At the implementation phase, the "Answer Gallery" strategy is used. At the lesson of discipline "World Economy and International Economic Relations" on the theme: "Kazakhstan in the system of modern international relations" students were suggested to choose from all international and regional organizations, where the Republic of Kazakhstan is a participant, only those whose goal was the development of economic relations. The teacher commented on the correctness of the assignment, the judges and team leaders recorded individual answers. Each group used stickers of a certain colour. Representatives of groups attached them to a common cluster, when summing up it was clear which group gave more answers that are correct.

The "Problem Mosaic" strategy is interesting when it is required to investigate the problem, to argue its position. For example, students on the example of the Eurasian Economic Union determine the pros and cons of economic integration for Kazakhstan. The teacher offers students two sheets of different colours that are pre-cut into identical sectors and each printed with a question (problem). To answer questions, students are

offered a handout containing analytical and statistical information on the topic. After the giving answer on the board, the sector with the question of the group that brought more arguments remains there. After discussing the problem topic, conclusions are drawn, answers are analyzed. And as a result, one sheet is formed with sectors of different colours. The group whose sectors are more when compiling the mosaic wins. The teacher comments on the correctness of the assignment, and the team leaders make estimates.

The "Tree of Predictions" strategy is often used during "Fundamentals of Economics" discipline. This technique helps to build assumptions about the development of some events. When analyzing the situation, various hypotheses are put forward, which must be supported by arguments. When constructing a scheme (tree), it is assumed that the trunk is the main theme, the branches are assumptions, and the leaves are arguments.

At the third stage of reflection, the teacher assesses the result of students' work. Practice shows that the strategy "Plus - minus - interesting" is very effective at this stage. Students are asked to fill out a table that consists of three columns. The first column "Plus", records everything that the class liked, information and forms of work that provoked positive emotions and could be useful for achieving some goals. The second column, "Minus", records everything that was not pleasant at the lesson, it seemed boring, it remained incomprehensible, or information that turned out to be unnecessary, useless from the point of view of solving life situations. The third column is "Interesting", all the curious facts that you learned about at the lesson are written down, and what else you would like to know on this topic, questions to the teacher. According to this table, it is very convenient for the teacher to summarize the lesson [4].

Development of critical thinking technology can be considered integrating; it summarizes the developments of many technologies. It provides thinking development, communication skills formation and ability to work independently. In connection with a wide range of techniques and methods included in the technology, each teacher can choose those that are close to him personally without breaking framework approach of this technology (all allowed is not forbidden).

Within the framework of the basic model "Challenge-Comprehension-Reflection" a variety of learning strategies can be used that are sufficiently well-known and tested in pedagogical practice: cooperative learning strategies, problem-learning strategies, and technology of a learning debate organization. Despite the heterogeneity of the proposed methods for students' critical thinking development, they have a single focus: stimulating students to understand their own actions: analysis, generalization, evaluation, comparison, verification.

There are often discussions between students and teachers that are conducted correctly and actively. In many cases, these discussions arise as a result of a question raised by either the student or the teacher. The level, type and structure of questions are important for emerging discussions. They support higher levels of sophistication in

students' critical thinking. Therefore, we can not say about issues that stimulate critical thinking. When answering such questions, students analyze and interpret information, analyze ideas, build their own assumptions - all these things demand from them searching activity. At this stage, it is important to understand that such issues are a means of stimulating different types of thinking at different levels of complexity. There are questions on memorization or questions of a formal level, they refer to the lowest level. Questions on evaluation or questions of judgment are considered to be the highest level of thinking (Sanders, 1969). However, one must assume that all questions are important, since they all lead to different kinds of thinking.

There are many methods that teachers can use to make their ability to ask questions even more effective (Gibbs, 2001). After the question has been posed, it is necessary to give time to think about it, so that the students of less self-confident have the opportunity to formulate an answer. Using the method "Think - Pair - Discuss" the teacher gives the opportunity for students to discuss the answer with each other before expressing their opinion to everyone. When developing critical thinking, it is necessary to ask questions that develop/continue the discussion, such as “And what is your opinion?”, “What could you add?” etc. The teacher needs to provide feedback/comments that do not confirm or deny the students' answers. Then the discussion remains open. For example, “It is interesting”, “I did not think about it before”. After discussing the studied material, it is necessary to generalize and summarize. “Who can express this view in other words?”. When discussing the opinions of other students can be known, for example, “Who agrees?”, “Who disagrees? Why?”. When studying topics, you need to use the method of saying thoughts aloud: “How did you come to such an answer?”. It is necessary to ask all students, not just those who raise their hands. However, we must quickly move on if the student does not want to respond. The teacher should warn students about the possibility of different answers: “There are many possible answers to this question”. You can use the imagination: “What would have happened if ...?”.

So, analyzing the strategies and methods system of teaching this technology, we come to the conclusion that the application of critical thinking development in learning solves many educational problems. It increases the motivation for learning, activates the learning process and thinking, breaks the barrier between the student and the teacher, establishes dialogical relations, and promotes the manifestation of personal qualities, creative abilities, the desire for cooperation and social activity, self-realization of the student. This technology forms a new style of thinking, which is characterized by openness, flexibility, reflexivity, alternative decisions; develops such basic qualities of a person as communicability, creativity, mobility, independence, responsibility for his own choices and the results of his activities; forms a culture of reading, stimulates independent searching creative activity. The ability to think critically is not a search for shortcomings, but an objective evaluation of the positive and negative sides in the cognizable object.

However, on the one hand, the use of this technology at each pedagogical lesson takes much time for a detailed study of information, finding out students' level of knowledge, discussing alternative points of view, and creative processing of the studied. On the other hand, the technological development of pedagogical disciplines teaching can push the content side of the lesson into the background.

The main thing is to preserve the "spirit" of technology, i.e. keeping principles of cooperation, personal independence, self-sufficiency and humanism.

Conducting training sessions on economic disciplines using techniques of critical thinking development technology increases students' interest in learning. It can be said with certainty that the strategies of technology for critical thinking development, used in the study of economic disciplines, are aimed at improving the teaching and upbringing process and creating conditions for the formation and consolidation of students' new knowledge, skills and habits.

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