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POSSIBILITIES OF DEVELOPING STUDENTS' CRITICAL THINKING SKILLS BASED ON THE USE OF INTERACTIVE TECHNOLOGIES IN GEOGRAPHY EDUCATION

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Abstract
The article examines the problem of developing the critical thinking skills of schoolchildren with the help of interactive technologies in the process of teaching geography. Cluster is one of its methods (techniques). A step-by-step technology for developing students' critical thinking skills based on the use of the "cluster" technique is proposed.

Keywords Methods of teaching geography, teacher, learner, interactive technology, critical thinking, technology for developing critical thinking, skill, challenge, comprehension, reflection, cluster, method, techniques.

INTRODUCTION

A leading direction in modern national educational modernization is the competency approach. The competency approach in education is not limited to increasing the volume of knowledge in various disciplines, but also involves creating conditions for students to acquire independent knowledge, develop the skills to apply them in unfamiliar situations. In general, the competency approach in education can be defined not through "knowing what", but through the concept of "knowing how". It is an extremely difficult matter to motivate the current reader to engage in cognitive activities, find a way to the goal in the field of information and communication. This is due to the fact that students often have serious difficulties in the perception of educational material in all subjects. The real reason for this is the insufficient development of thinking, first of all, critical (analytical) thinking, that is, thinking. Therefore, the development of the mental sphere of the student and his critical thinking has become an urgent problem.

The development of critical thinking in students has become a popular direction of World Education. Over the next quarter of a century, the concept of "critical thinking" was included in the content of the educational programs of schools of most Western countries as one of the factors of personality maturation, but the concept in question has not been given a single universally recognized definition to this day. In Particular, R. In Ennis 'view, critical thinking refers to" rational reflexive thinking aimed at an issue solution of what to do (how to do) and what to believe" [1]. The author believes that a critically thinking person seeks to respect the opinion of his interlocutor, listen and hear others, be open in communication, understand the teranity of other

people's feelings, level of knowledge and reasoning, and avoid critical reproach.

D. Halpern considers critical thinking to be "the use of knowledge-related skills and strategies that increase the likelihood of obtaining the desired result" [2], E. Glazer comments that" critical thinking is a comparison of positive (good) and negative (bad) proof – grounds " [3].

T. Noel-Tsigulskaya reflects on critical thinking:" this does not mean finding criticism, flaws, or negative aspects in the closet " [4]. According to him, critical thinking means not only revealing mistakes and doubts, but also creating new ideas, looking for an explanation of something incomprehensible. Therefore, it should also be understood that the goal of critical thinking is not just to be under criticism, but to find the right solution, otherwise it is a criticism.

D. In cluster's view, critical thinking is independent thinking; information is the starting point of critical thinking, not the final one; critical thinking begins by identifying a problem that needs to be put and solved; critical thinking seeks convincing evidence; critical thinking is social thinking [5].

Critical thinking or reasoning is the ability to analyze information in terms of a logical and personal - psychological approach to its application in practice. This is actually a skill to put new questions in between, develop different arguments-foundations, and make well-thought-out different decisions. To develop critical thinking, it will be necessary to create and use special methodological tools. One such effective tool is the pedagogical technology for the development of critical thinking, developed by American teachers Jenny Steele, Curtis Meredith, Charles Temple, Scott Walter [6].

The technology for the development of critical thinking allows readers to be able to critically understand 21st century skills, that is, the experience they have, to synthesize new ones from existing components, to analyze information, evidence and controversial feedback, to be able to understand the interaction between integrity and its components, to correctly formulate questions for obtaining information, to be able to evaluate alternative, based on the use of the science of logic, it allows the formation of skills such as being able to conduct feedback and establish causal connections.

The technology for the development of critical thinking is a set of various methods aimed at intriguing students (arousing research, creative activity in it), creating conditions for generalizing information to it, as well as developing skills of critical thinking, self – analysis and reflection (reflection). The thinking activity of students and the ability to work with information requires the formation of logical skills such as analysis, classification, inference, promotion of hypotheses, proof, and so on.

K. Meredith, J. Steele and C. According to Temple's view, "critical reasoning implies curiosity and the use of research techniques: to put issues before oneself and to carry out a systematic search for answers" (6). In their view, critical thinking is not limited to facts, but rather an attempt to understand the causes and consequences of these facts. Cause-and-effect relationships are determined through systematic thinking.

Systematic thinking is a competency that manifests itself in behavior as a decision-making skill, referring to one whole and its parts, as well as to the interconnections between parts. In a broader sense, this includes the ability to analyze" soft " skills, make chamalab decisions, and assess risks and opportunities. In other words, analytical, critical and creative thinking are elements of systematic thinking (See Figure 1).

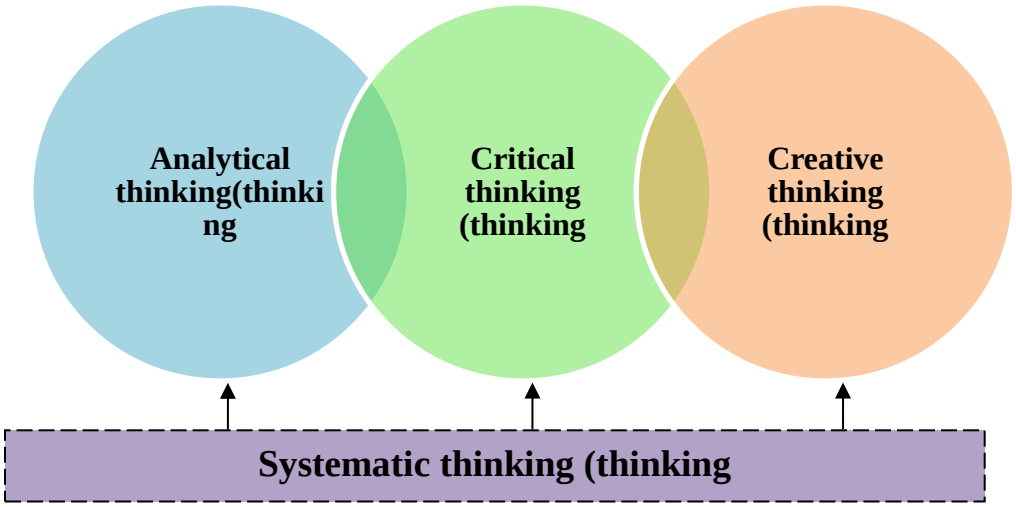

Figure 1. The role of critical thinking in systematic thinking

It should be noted that analytical thinking is the process of understanding a situation or state by dividing it into smaller parts or observing its foundations step by step on the principle of causality. Analytical thinking involves systematically regulating parts of a problem or situation, systematically comparing different properties or aspects, placing priorities in the right place-to-place, determining time-dependent consistency, and cause-and-effect relationships.

Comparing or otherwise evaluating different aspects, as well as placing priorities in place, are also, at the same time, indicators of critical thinking. This means that critical thinking uses logic laws such as analytical thinking - another similar aspect of them. However, while analytical thinking is aimed at using information provided for analysis and forecasting, critical thinking will be focused on looking for evidence (information), examining them in order to come to a single solution that most effectively solves this or that issue. Therefore, critical thinking is closely related to analytical thinking, which makes it seem difficult to find the exact ratio of the volume of these concepts.

The concepts of critical and creative thinking are also inextricably linked. These concepts are used and developed in the same context when it comes to forms of work such as" mental attack". Creative thinking is thinking that leads to finding a fundamentally new or improved solution to one issue or another. Critical thinking involves verifying the scope of application of proposed solutions for the purpose of determining. While creative thinking focuses on creating new ideas, critical thinking focuses on opening up their shortcomings. To effectively solve the issue, both types of thinking are required, although they are used separately: creative thinking interferes with critical thinking, and vice versa. To distinguish truly useful, effective solutions, creative thinking must be complemented by critical thinking. Hence, the purpose of critical thinking is to test the proposed ideas, that is, whether they can be applied; to find answers to questions such as how to improve them.

One of the directions for optimizing school geography education can be educational technologies aimed at developing critical thinking skills in students. Improving the methodology of

geography education is directly related to the creative thinking of students, the choice of effective methods and methods aimed at the formation of their geographical culture, the search for new tools and forms, in particular, interactive educational technologies.

Interactive education is a special form of organizing an educational (educational) process, the essence of which covers the collaborative activities of educators on the assimilation of educational material, the exchange of knowledge, ideas and methods of activity. In other words, interactive education is education based on the organization of joint activities of students on the path to mastering knowledge, skills, qualifications and certain competencies, that is, their interaction [7; 8].

Interactive technologies in geography education include the organization and development of dialogical communication, which leads to interaction, understanding of each other and solving common problems together. Interactive Geographic Education promotes the development of analytical, critical and creative thinking skills.

Interactive technologies appear as an important condition and result of a comprehensive approach to geography education [9; 10]. After all, the teacher's deep knowledge of only his subject, that is, geography, often does not provide the opportunity to learn the most optimal creative. Every geography teacher knows very well that, no matter where he works, the success of training directly depends in many ways on the emergence of activity in the educational process. Due to the fact that students apply knowledge acquired not only in geography, but also in various fields of Science in everyday activities, their practical skills become more identified and gain vital importance.

Geographical activity enriches the life experience of students in different ways, gives them geographical material that can be applied in their further professional activities in the acquisition of scientific concepts and the opening of laws. Thanks to geographical activity, cognitive processes such as perception, perception, imagination and thinking are realized at the same time, and many units of mental functions are formed in students. Since the subject of" geography " is the territorial relationship between nature and society, the elements of the system of knowledge belonging to other disciplines are most often used in its system of scientific knowledge: this can be the theoretical-methodological basis for designing interdisciplinary training based on interactive education.

The principle of instructional education with new content is followed by the introduction of modern educational and technical means into the interactive educational process. In the education of interactive geography, the principle of demonstrativeness is of great importance, the territorial aspects of the interaction between nature and society (land, water, air, plain, Mountain, River, Lake, City, Village, Road, field, landscape, border, areal, shape, size, proportion, relative position, etc.) are revealed through maps, drawings, diagrams, tables, drawings and other instructional tools.

Various forms and methods of interactive education can be used in geographical training or in the implementation of independent work through the means of information and communication technologies. The fact is that a student who has mastered communication technologies in global, regional and local computer networks can actively participate in the learning process based on collaborative learning, working in groups, design activities and the like. In addition, the reader can use information resources in the internal information space (Internet) to solve certain problems. In the process of such education, the student becomes not only the object of teacher

influence, but also the subject of interactive interactions with the pedagogical community and other students. Such communication significantly increases the level of study and understanding of the content of natural and economic-social geographical sciences. After all, on maps without various scales of writing, the content is widely used in geography education, such as performing various practical and creative works, drawing diagrams and drawings, working with tables and conditional signs. They also help to study this science in depth on the basis of instructional tools.

At present, both new geographical knowledge and values are acquired and studied using a personal computer. Information and communication technologies are laid down on the basis of programs developed in geography, personal computers serve as a didactic tool for accelerating the process of geography education, deepening students ' knowledge and expanding their worldview. In this case, efficiency is achieved by automating a number of mapping and graphic operations. The relevance of such a program is that students will learn how to apply the acquired geographical knowledge in real conditions. The geographical material under study will have a practical, creative-research nature. In particular, students may be offered tasks with a creative element as early as the process of performing the first mapagraphic work.

For example, at the stage of studying new material in interactive geography lessons, a computer can be used in different ways:

1) to provide students with new information in the presentation form using the Microsoft Power Point program;

2) provide students with instructions for new material based on a graphical interface (graphic user interface) using special programs;

3) to provide new material to students by creating instructional or developmental programs;

4) show the practical part of the new material using Paint, Adobe Photoshop and similar programs.

The educational process can be effectively organized by making maps, diagrams and drawings of various contents through the tool" interactive Kulman". This makes it possible to carry out cognitive processes such as perception, perception, imagination and analytical thinking. Critical thinking, in particular, the development of spatial (territorial) thinking, is closely related to intelligence (intelligence). It is worth noting that in the process of completing tasks for practicing methods of creating maps of different content based on tools such as ZeeMaps, Scribble Maps, Animaps in geography education, even low-mastering students can work with enthusiasm. Graphic methods for presenting information provide an active approach to education, form analysis and synthesis skills and independent research practices in students, allow the implementation of the principles of stratification and individualization of the educational process and the processes of spatial and critical thinking.

Therefore, the use of interactive forms, methods and technologies in the organization of educational and cognitive activities of students in geography education serves to further develop their critical thinking and activity.

The peculiarity of the development of critical thinking is characterized by the presence of three stages in it (see Figure 2):

1) Call (Call) stage;

2) the stage of perception (understanding) ,

3) the stage of thinking (reflection).

During the call (call) phase, the activation process takes place and all students are attracted to it. The goal is to remember the existing knowledge of the

given topic, to put the questions in the middle, the answer of which should be found, and to form an associative line, that is, a chain of words connected with each other by certain signs.

At the stage of comprehension (understanding), work with information (information) is organized (reading the text, thinking and analyzing the facts obtained).

The knowledge gained at the stage of thinking (reflection) is processed as a result of creative activity and the corresponding conclusions are drawn.

Based on the optimal use of interactive technologies in geography education, the main features of critical thinking in students are not sufficiently formed: analysis and classification skills (see Table 1), according to the results of the emphatic experimental-test work carried out to study the possibilities of developing students ' critical thinking skills.

From the analysis of Table 1, it is known that in 39.58% of the respondents, both skills studied are formed at a low level, in only 14.58%, at a high level.

Table 1.

The level of formation of the skill of analysis and classification of geographical objects and concepts in students

№	Degrees	Analysis skill		Classification skill		General	
		ko'rsatkichlar:					
		people	%	people	%	people	%
1	High	4	16, 66	3	12,50	7	14,58
2	Middle	12	50,00	10	41,66	22	45,83
3	Low	8	33,33	11	45,83	19	39,58

Consistent use of the cluster method in the system of geography classes and extracurricular activities makes it possible to effectively develop critical thinking skills in students.

A cluster (English cluster – accumulation, feather, shajara) is a union of several monoecious elements that can be viewed as an independent unit with certain properties. Cluster is a graphical form of information structure. The term also has the alternative "growing together".

There are the following step-by-step rules for creating a cluster:

Step 1-a keyword or phrase with an idea or topic "cell" is written in the middle of clean paper (class board) ;

Stage 2-students write down everything that is remembered (remembered) on this topic. As a result, all words or phrases that represent ideas, facts and visions that fit this theme are spread (scattered) around the subject ("flame-wave" or" mixed-build " model);

Stage 3-systematization is carried out. "Mixed-build" records, that is, those or those concepts that are recorded, are categorized into groups, depending on what aspect of the content the facts reflect (the model of the "planet and its satellites");

Stage 4 – words that appear according to the records, that is, "satellites" are connected by a straight line with the underlying concept - "planet". Around the "satellites", in turn, other" satellites" appear and New logical connections are established. The result is a structure that graphically reflects the feedback on this topic, that

is, the underlying concept, and determines its information field.

In the system of geography lessons and extracurricular activities, there is an opportunity to use the cluster method, that is, its method, at all three stages of the development of critical thinking:

1) in the call (call) phase, students represent all their knowledge, hypotheses and set of words on the relevant geographical keyword or phrase in the form they wish on paper. It serves to stimulate the students ' geographical cognitive activity and to form in them the motivation of logical thinking before starting to study the subject.

2) the use of the cluster method at the stage of comprehension (understanding) makes it possible to organize parts, elements of the educational material in the form of a structure.

3) in the stage of thinking (reflection), the cluster method acts as a systematization of the acquired knowledge.

Therefore, the cluster can be used as a general plan of the lesson throughout the lesson, that is, at all stages of it. In particular, at the beginning of the lesson, students collect all the information they have on the topic and record it on paper. During the course of the lesson, new information is gradually entered (added) into the drawing. It is recommended to highlight them in different colors. This method develops the skills of aiming, predicting, filling and analyzing on the basis of emphasizing (distinguishing) the basic concept.

The cluster is usually developed in the form of a branch (shingil, shajara) or in a planetary model with satellites. In the center is the head concept, thought; on the sides are located large meaningful units connected by straight lines to the head concept. These units can be words, phrases, sentences that represent ideas, thoughts, facts, visions and groups related to a particular topic. And around the “satellites” of the central planet, units can be located that more fully reveal the topic and expand logical connections, but with less significant meaning. With the help of thoughts and facts in the material under study, it is important to be able to substantiate them and identify concepts.

The cluster can be made on a board, a separate sheet, or a board in each student's notebook when completing an individual task, depending on the organization of the lesson. When forming a cluster, it is recommended to use chalk, pencils, pens and felt-tip pens of different colors. This action allows you to clearly distinguish some aspects, more clearly reflect the general picture, and simplify the process of systematization of all information and information.

A number of recommendations for the formation of a cluster have been developed. When creating it, it will be necessary to express and write everything that is remembered, even if they are some kind of assumptions or visions, without hesitation, that is, without fear. Some feedback that is incorrect or inaccurate during the work may be corrected or completed. Students have their own imagination and inner feelings in Izmi and can confidently continue to work until all ideas are over. Meaningful units-it is necessary to try to establish as much communication between them as possible, not afraid that the number of words will increase. In the process of analysis, all words, concepts are put into the system and fall into place.

As an example, in a geography lesson, in the study of the topic “natural geographical District of Kyzylkum” (Grade 7), we consider the construction of the cluster “Kyzylkum Desert”. At the beginning of the work, students express all their knowledge, assumptions and imagination on this issue. For example, the geographical position of the Redcum desert, climate, soils, flora, fauna and the like. The teacher writes them on the board in the form of a drawing. After that, the textbook reads the

corresponding part of the text of the topic. During acquaintance with the Material (or as a result of reading), the drawing is filled with new facts. The teacher adds them to the drawing on the board with colored chalk. At the conclusion of the lesson, the appearance of the cluster formed on the board is analyzed based on the discussion of the correctness or inaccuracy of the initial thoughts and the generalization of the data obtained (see Figure 3).

The cluster method can be used effectively in the study of various topics in all types of classes. This method can be used in the organization of individual, group and collective forms of Education. The transition from one organizational form to another is allowed. This is determined by the goals and objectives of the lesson, the capabilities of the teacher and the student team. For example, the cluster takes the form of a solo work in the call (call) phase, creating its own cluster in each reader's notebook. On the basis of the personal drawings of the student and the knowledge gained in the lesson, a general graphic drawing is drawn as a joint discussion of the material mentioned with the formation of new knowledge. The cluster can be used in the lesson as a methodical method, as well as homework.

The use of the cluster method in geography education makes it possible to cover a large amount of geographic information, to simultaneously involve all students in the learning process, so that students are active and sincere in the process and are not afraid to make mistakes or make mistakes. Therefore, in the process of applying the cluster method, students form critical thinking skills such as asking questions or putting the issue in between, distinguishing, analyzing, establishing a cause - and-effect relationship, regulating, systematizing, drawing conclusions.

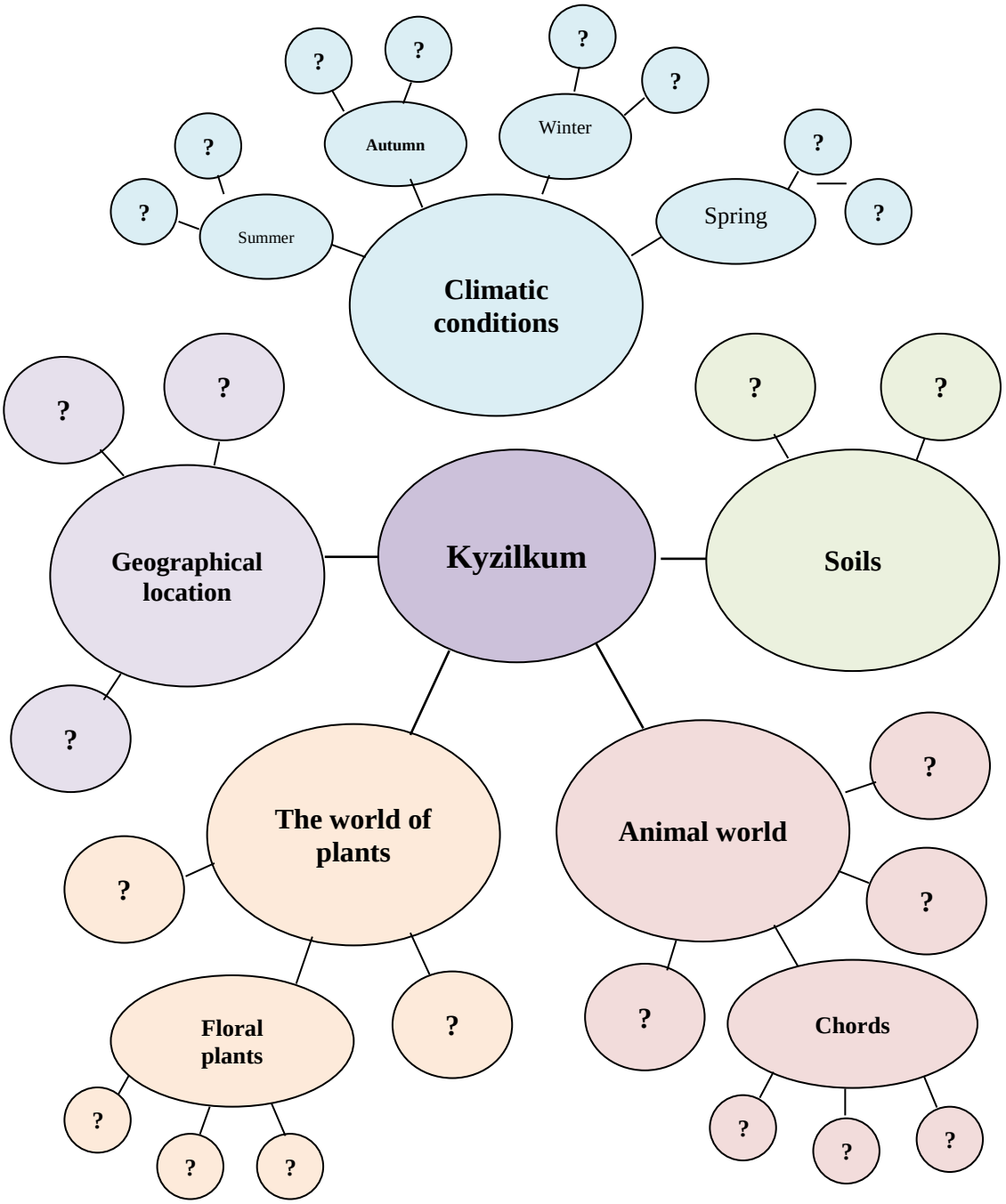

Figure 3. "Kyzilkum" cluster

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