

Bildung von forschungsfähigkeiten bei begabten schülern im bildungsprozess

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Abstrakt. Bei der Organisation von Forschungsaktivitäten für begabte Schüler ist der technologische Ansatz des Lehrers von wesentlicher Bedeutung. Bei der Entwicklung von Forschungskompetenzen bei begabten Studierenden auf der Grundlage von Forschungsergebnissen ist die Theorie der erfinderischen Problemlösung im Unterricht sozialer, humanitärer und naturwissenschaftlicher Fächer von entscheidender Bedeutung. Der Artikel diskutiert den Einsatz interaktiver Methoden im Unterricht und außerschulische Aktivitäten, die darauf abzielen, die Forschungsaktivitäten begabter Schüler zu entwickeln.

Schlüsselwörter: Lehrer, Schüler, Forschungsarbeit, Wissen, Fertigkeit, Lernen, Suche, Information.

Formation of research skills in gifted students in the educational process

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Abstract. In organizing research activities for gifted students, the teacher's approach in terms of technology is essential. In developing research skills in talented students based on research results, the theory of inventive problem-solving in teaching social, humanitarian and natural science subjects is very important. The article discusses the use of interactive methods in the course of the lesson and extracurricular activities aimed at developing the research activities of gifted students.

Keywords: teacher, student, research work, knowledge, skill, learning, search, information. .

Introduction. In the 21st century, education is globally recognized as the main factor in ensuring sustainable development; in the concept of international education, calculated until 2030, "obtaining a quality education and stimulating creative abilities" are defined as urgent tasks [1]. This, in turn, requires the definition of modern didactic parameters for the development of creative and critical thinking of gifted students in the educational process and the improvement of innovative technologies.

Research activity, as the basis of creative activity, is scientifically substantiated in the works of scientists of our republic, such as R.Kh. Dzhuraev , B.Kh. Rakhimov , R.G. Golish and others. As a result of these studies, the creative activity of students was studied in certain places; various pedagogical and psychological recommendations were developed for developing their abilities and eliminating shortcomings.

Despite this, the formation of research skills in gifted students has not been separately studied as a research problem.

Methodology. Establishment of research activity of gifted students will appear as one of the methods of organizing their cognitive activity in the educational and cognitive process.

The research activity of gifted students is manifested in their design and search skills, design skills and logical thinking develop. The research activity of gifted students is the highest reflection of educational activity, it is presented as an integral part of cognitive activity. With its help, gifted students have the opportunity to conduct certain research, assimilate more and more new knowledge, and as a result, achieve a certain professional orientation. During research activities, by substantiating the results of their work, students demonstrate a deep assimilation of theoretical knowledge, the acquisition of skills to prove their point of view. In this process, they also achieve evidence that the acquired knowledge has a rationale and validity. Along with this, they develop the ability to acquire new knowledge and deep thinking.

The research activity of gifted students has the property of gradual development.

The lesson of the first stage consists of the formation of a theoretical-experimental situation, where the teacher seeks to increase students' interest in research activities. Students are aware of the importance of research activities in ensuring the success of educational activities.

At the second stage, an exploratory situation appears, which has a partially exploratory character. At this stage, it is required to solve the following tasks: observe the principle of historicism in the assimilation of knowledge; to develop the independence and activity of students; engender an inner desire in the assimilation of knowledge; to interest students in practical activities.

In turn, the third stage is based on research search. Here, students conduct research activities on material of unknown content. As a result, the research skills available to students will appear in an individual form. Students will master the skills of an objective assessment of scientific phenomena. They will set themselves goals for conducting certain scientific experiments in the future and will act towards achieving these goals.

In the process of experimental work on the formation of research skills among students based on the theory of inventive problem solving (TRIZ), the following interactive methods have been introduced into educational practice:

1. A study portfolio is a means for students to work with different sources, collect information from them, and analyze them.

Separately, it was determined that the portfolio of works gives the expected effect in clarifying contradictions from information from different sources on social and humanitarian subjects, as well as making correct scientific conclusions.

2. Method "Cause - proof - result". This method makes it possible to determine cause and effect relationships for research purposes. This method becomes effective

at the stage of explaining a new topic, it will provide an opportunity to see the future and predict the subsequent direction of reality, it shows a strong motivation for independent homework based on educational materials.

3. Method "Ideal". Being a method of developing critical thinking, it enables the formation of the following competencies: problem definition; finding a solution to a problem; choosing an effective solution.

4. Method "Chain of signs". This method is aimed at updating students' knowledge of the signs and symptoms of the objects under consideration. It is also focused on the formation of cognitive (comparison, analysis and synthesis) and managerial (drawing up an action plan) abilities. In the process of experimental work, the following forms were used: characterization of the object through the names and meanings of signs; identification of unknown sides of certain parts of the model; drawing up a work plan.

5. Method "POPR" (Position, justification, example, result). Through this method, students learn to consciously and reliably express their thoughts. This method can also be used at the stage of learning new material, as it teaches students to form an independent point of view. SOCA includes an algorithm for substantiating a point of view, giving examples and achieving results.

Results. We determined the level of formation of research skills among gifted students according to the following criteria:

- reflection in the basis of students' scientific research skills of points of view, their choice, features, advanced capabilities, levels of consciousness, evaluative relationships, volumes of understanding of objective patterns, stable inclinations, goals, interests, as well as emotional, intellectual potential;
- ability to analyze scientific phenomena;
- the ability to characterize scientific concepts;
- the ability to generalize theoretical information;
- the ability to listen carefully to teachers in the educational and cognitive process;
- possession of skills of observation of scientific phenomena;
- ability to find scientific information from different sources;
- ability to conduct small research;
- the ability to answer questions correctly and completely;
- the ability to formulate certain questions related to the educational topic;
- the ability to evaluate scientific evidence and phenomena;
- the ability to draw up a plan for writing an essay or term paper on a specific topic;
- the ability to design their activities;
- the ability to make a diary with coverage of their educational activities;
- possession of the skills to establish cultural communication with others, classmates and teachers.

Conclusion. On the basis of the synergetic-thinking method and the principles of the philosophical-anthropological approach of thinking, the following functions of the formation of research skills in gifted students are determined:

- educational - a complete reflection of the events and phenomena inherent in nature and society, while students become direct observers of this reflection;
- educational - mastering a complex of opinions, views, beliefs, assimilation of moral qualities;
- developing - ensuring the activation of thinking, orienting students to creativity, developing abilities, studying the interconnection of phenomena and actions;
- organizational - mastering the primary status of persuasion in the practical activity of a person;
- prognostic - the representation of being by relying on the knowledge and patterns inherent in nature and society.

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