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TECHNOLOGIZATION OF HEURISTIC ACTIVITIES IN THE DEVELOPMENT OF CREATIVE ABILITIES IN STUDENTS

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Abstract
The article identifies effective ways to prepare future technology teachers for creative activities in higher pedagogical educational institutions and selects its specific content, as well as specific methods and means of generalizing the technical creativity, social and professional readiness of future specialists in the educational process.

Keywords: creativity, heuristic, problem-based learning, creative activity, physiological qualities, intellectual qualities, sensitivity, research situation.

Introduction

Since the first years of independence, the development of the education system in our country has been elevated to the level of state policy, ensuring that our children acquire modern knowledge and professions in conditions that meet world standards, grow up as physically and spiritually mature people, realize their abilities and talents, intellectual potential, and cultivate feelings of loyalty and selflessness to the Motherland in the hearts of our youth.

The Resolution of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev dated April 20, 2017 - On measures for the further development of the higher education system is significant in that it is both a logical continuation of the work being carried out to reform the education system in our country and is aimed at raising it to a new level. One of the most important aspects of the resolution is that it places special emphasis on adhering to international standards in the training of highly qualified specialists, creating conditions at their level, and training personnel with modern knowledge and skills in line with their spirit and requirements.

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Literature Analysis

An analysis of psychological and pedagogical research shows that the issue of developing a person's creative abilities and ability to be creative was reflected in the studies of G.Ya. Bush, S.S. Gusev, the psychological aspects were studied by L.S. Vygotsky, S.L. Rubinstein, E.Goziev, B.Kodirov, M.G. Davletshin, the psychological and pedagogical aspects of creative activity were studied by D.B. Bogoyavlensky, A.M. Veyna, D.N. Perkins. The didactic aspects of technical creativity were analyzed in the works of Yu.K. Babansky, V.G. Razumovsky, E.I. Rozhkova and others, and the forms, methods and techniques of organizing technical creativity were analyzed in the works of P.N. Andrianov, D.M. Komsky, Yu.S. Stolyarov. The philosophical theory of creative activity and its social nature were revealed by A.T. Shumilin and others. The issues of developing students' independent and creative work activities have been studied by D. Jalolova, O. Koysinov, and others.

Methodology

Psychologist N.D. Levitov proved that creative activity is formed on the basis of the following criteria [6;23b]:

- independence of thinking;
- speed and consistency of learning material;
- speed of mental approximation (ingenuity) in solving non-standard tasks;
- ability to distinguish the important from the unimportant by delving deeply into the essence of the phenomena being studied.

By the conditions for the formation of creative activity in students, we mean, first of all, the process of the emergence, implementation and development of these conditions.

They are:

1. Knowledge, skills and qualifications that students must acquire in this regard in the formation of their creative activity.
2. The connection between theoretical knowledge and practice in the formation of creative activity.
3. Heuristics of exercises for the formation of creative activity, problem situations.
4. Technological approach to the formation of students' creative activity.

These conditions are implemented as follows:

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The following requirements are imposed on the knowledge, skills, and abilities that students must acquire in the formation of their creative activity.
-the extent to which they have mastered the program materials;
-the basic concepts and rules of the subjects;
-the ability to independently complete tasks on the chosen topic;
-understand the main problems in the subjects being studied;
-the ability to use educational materials and technical means, information technology when completing tasks;
-the ability to demonstrate and develop their abilities;
-the ability to set achievable goals for themselves on the subject, make plans, and evaluate results;
-the ability to substantiate their opinions when studying the subjects;
-the ability to recommend their own options, etc.
These requirements allow the teacher to know the interests of students in learning, their educational activities, individual inclinations and help determine the structure of the educational process in this regard.
Based on the above requirements, priority areas for the purposeful organization of problem-based education are determined.
A purposeful approach is understood as a specially organized structure of the educational process or the system of content, methods and forms of education, aimed at the development of creative activity.
One of the main tasks of pedagogy is to create conditions that ensure the comprehensive development of students' creative activity. At the same time, it is necessary to identify students who demonstrate deep interests, aspirations and abilities in certain areas, and to create all opportunities for their further development. For this, it is important to: create conditions for the development of students' creative activity. In this regard:
Preparing students for innovative activities to develop their creative activity.
1. Creating cooperative activities in the relationship between teachers and students.
2. Using innovative technologies of cognition in the development of creative activity.
In the current era, heuristic and problem-based learning, associated with the independent search and discovery of some truth by students, is actively entering the learning process.

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Heuristics (from the Greek peshtsko - I seek, I find) means. The technologization of heuristic activity is a necessary and legitimate process, as much as the creative abilities of students are.

A single training session, systematic training on the course of study, takes place on the basis of heuristically oriented activity [7;110b].

Technological action on the creation and development of heuristic situations is a way to ensure the results of creativity. Below we will consider technological guidelines for teachers on the preparation and conduct of heuristic situations:

1. Identify the main educational object of the situation being studied (thing, concept, phenomenon, process, tradition, item, etc.). In this case, identify the object and the problem that is interesting for students; help students find their personal internal connection with the object being studied, direct them to think about how to prepare problems that are personally significant for them. For this, personal experience and the expected educational results of students are assumed.

2. Students are given a problem or task with an unknown solution. The implementation of this task is effective only when there is educational excitement in the classroom and students demonstrate their activity by completing the task.

The description of the task can be the result of a team discussion of the problem. The goal is achieved only if the task described by the students is not just interesting, but also new for the teacher.

3. Creating an opportunity for students to personally solve a situation (task) that has arisen or is created. This is considered the main stage of the heuristic situation. In this case, it is necessary to identify a sign of creativity from any educational result.

4. Demonstration of students' educational creativity: discussing assignments, definitions, symbols, drawings, projects, models, etc. in a team, organizing exhibitions, writing mutual written reviews, giving presentations with lectures.

5. After demonstrating educational creativity, be able to justify it with drawings, stories, definitions, scientists' opinions, information from textbooks, personal knowledge and imagination.

6. Organizing students' activities to compare, contrast, classify creativity. If students have their own views or creativity, they are helped to understand the reasons for changing their views. The development of educational situations is ensured.

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7. Thinking and analyzing students' understanding of the methods used for cognition, the problem that has arisen and ways to solve it. Assisting students in determining their individual results. Determining the results of collective learning. The main technological elements of exploratory learning situations are: motivation, posing problems, solving the problem by the participants of the situation, demonstrating learning results, comparing them with each other.

Conclusion

The learning situation is organized by the teacher in the following way: the necessary material and learning object are allocated, the relationship between them is studied, the main concepts are selected. The general object of research, the need to search for its meaning, and the need to search for new methods and types of activity can be the basis of a heuristic situation.

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