

TEACHING PHYSICS PEDAGOGUES TO NEW PEDAGOGICAL TECHNOLOGIES IN THE PREPARATION OF BACHELORS

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Abstract

Along with the transition to the market economy, we have risen to another level of development, which in turn puts the task of training high-quality pedagogical personnel before HEIs. The demand for teachers with modern pedagogical technology and methodology is increasing at all levels of the continuous education system established in the republic. Therefore, equipping students with pedagogical technologies is one of the important tasks of higher pedagogical education.

Keywords: technology, pedagogy, information technology, multimedia, critical temperature, interactive, evaporation, condensation.

ENTER

There are a number of works dedicated to the use of new pedagogical and information technologies in the training of physical educators. In particular, in the work of B. Mirzakhmedov and S. Makhmudova, the theoretical and practical aspects of organizing the student's "educational and creative activity" in modern physics education are analyzed in detail in this work. It was during the implementation of the problem experiment that the description of the periodicity of the student's educational and creative activity, the types and stages of conflicts and the model of the activity was created. Models for managing and controlling such activities of the student, using innovative technologies and interactive methods have been developed.

In the lesson, the technology of creating a problem situation, its importance for every physics student is analyzed.

In this work, the authors reported that on the basis of the physics department of TATU, a multimedia room and information technology resources were created for lecturing in a multimedia environment, modeling physical processes in practical training. Electronic resources with a total size of 4 GB are collected, including video files, animation clips, visual color images, graphics, presentation files and software products.

Based on the effectiveness of using the modular system in teaching physics in higher education institutions, the possibilities of using this method for students of vocational colleges were studied. In particular, "Evaporation and condensation. Saturated and unsaturated vapors. Boil. Dependence of boiling temperature on atmospheric pressure. Critical temperature. Liquefaction of gases. The methodology of teaching the topic "air humidity" in a modular system is described.

The experience of using modern information technologies in physics teaching processes in HEIs, in particular, EHM programs belonging to the optics department, is described.

Pedagogical and psychological effects expected with the introduction of information technologies into the educational process were discussed.

Pedagogical and didactic aspects of increasing the effectiveness of education as a result of the introduction of information technologies into the process of physics education were discussed. The

increase in the activity of students, the formation of deep knowledge, the formation of intellectual and practical skills is the result of the preparation and application of independent assignments of a practical nature using computers in physics classes.

Today, the "creative ability" of mankind is sufficiently described in the philosophical and pedagogical-psychological literature. For example, in the encyclopedic dictionary, creativity is described as human activity, and it is understood that the act in question is qualitatively new and not done by others, originality and historical importance.

In the dictionary of cultural studies, "Creativity is such an activity in human culture that the novelty created by a person during his activity is characterized by the fact that there is no analogue in nature."

In psychology, on the basis of this term, "the psychological process of creating valuable, priceless innovation" is understood.

Philosophers consider creativity to be the creation of total innovation, the creation of new images as a result of the activity of the human spirit, in short, creative fantasy.

In one word, we can call all these words creative activity, that is, qualitatively new activity that no one has done before. So, we can consider creativity and creative activity as the main factor that indicates the level of creativity.

We can understand the creative activity as a qualitative and quantitative, as well as a practical process of creation of unique innovation as a result of the activity of humanity or a certain team. The cause of creative activity is the emergence of a problematic situation, which cannot be solved by traditional methods. As a result of the formation of a non-standard hypothesis, the ability to see the non-traditional interconnection of the considered problems is the result of creative activity. So, we can understand deep thinking through optimal, creative thinking on the basis of creative activity, as well as critical attitude in the right situation.

We can explain creative activity mainly in the following three types:

1. Advancing new solutions to the problem in question.
2. Determining the principle possibilities of putting the innovation into practice with detailing, concretization (adjustment) of the problem under consideration (part, division into pieces).
3. Applying new ideas to life and objectifying them during the activity.

This classification of creative activity was created on the basis of modern science and forms the basis of scientific creativity. Applying the qualities of creativity to the teaching process is a form of human activity and forms a person who is a social subject with qualitative new advantages that are important for the whole society.

During the creative activity, students develop their creative abilities and develop such characters as self-confidence and independent work. Participation of students in active creative activities during teaching increases their interest and enthusiasm in solving the problem. New facets of thinking levels, understanding of the nature of connections with other disciplines develop.

Our vision of creative issues plays a key role in the development of creative ability for our work. In this case, the issues raised form the basis of our pedagogical goal and take into account the level of student and collective preparation.

In the work of M. Mirinoyatov, methods of introduction to the principle of operation of the semiconductor laser, which is widely used in modern optoelectronics, are described, intended for students of academic lyceums and vocational colleges, as well as higher education institutions. One of the important aspects of this work is that it details the physical basis of how lasers work. It can be used effectively in organizing students' independent work.

Pedagogical aspects of increasing students' interest in learning in the computer environment are the main object of S.A. Bogdanov's research. In his research, the following important aspects of increasing

students' interest in learning based on the introduction of computers into education are shown separately:

- ✓ provision of spiritual and educational growth.
- ✓ formation of experience of personal and interpersonal relations.
- ✓ expansion of the scope of knowledge, mastering of methods of activity.

Increasing students' interest in learning in a didactic computer environment is based on a conceptual model based on the methodological principles of approaches such as integrity, complementarity, activity, informativeness, individuality.

SUMMARY

The technology of increasing students' interest in learning in a didactic computer environment consists of such a process that the activities of all subjects-students are directed to a single didactic task - the development of personal qualities such as interest in learning with the help of pedagogical tools.

It is appropriate to use the results of a number of fundamental-methodical and dissertation researches published in recent years in order to teach new pedagogic and information technologies in the preparation of physics bachelors.

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