

TEACHING OF PHYSICS FOR STUDENTS OF NATURAL DIRECTION WITH INNOVATION TECHNOLOGIES

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Annotation. The article deals with the methodology of teaching physical science in the field of natural science (mathematics). In the field of natural science education the necessary theoretical methods for the use of new pedagogical technologies in teaching physics and, consequently, the formation of students' scientific thinking and world outlook are provided.

Keywords: natural sciences, mathematics, pedagogical technologies, methodology, Ampere Force, experiment, creative activity.

Преподавание физики студентов естественного направления с инновационными технологиями

Аннотация. В статье изучена методика преподавания предмета физики для студентов направления естествоведения (математика). Обоснованы использование новых педагогических технологий в преподавании предмета физики в направлении естествоведения и следовательно, использование необходимые теоретические методы для формирования образа научного мышления и мировоззрения студентов.

Ключевые слова: направления естествоведения, математика, педагогические технологии, методика, сила Ампера, эксперимент, творческая деятельность.

One of the major tasks of our country in the field of education is one of the major tasks of manufacturing, service and training of competitive personnel in all spheres of our society based on modern requirements. In recent years, a number of reforms have been undertaken to develop both traditional and non-traditional ways of organizing the learning process, to improve teacher training and, thus, to improve the quality of education.

Therefore, in today's education systematic, technological approach and innovative pedagogical technologies are characterized by wide application and guaranteed results. Therefore, each teacher is well aware of the essence and purpose of this process, can motivate it in a separate approach to students, in contrast to traditional teaching, to teach them independently, not only to teach, but to teach freely in the classroom. to have the ability to think. This requires that a

professor who is working in the field of education should be well aware of the new pedagogical technologies, modern information and communication technologies, and the experience of teaching new interactive methods of teaching.

In recent years, a large-scale work is being carried out in our country to create a system of higher education that meets the priorities of socio-economic development and international standards. At the same time, such concepts as innovation, innovative ideas, innovative technologies in improving the quality of education in higher education institutions speak of large-scale reforms implemented in the country, social and economic reforms. The widespread use of the achievements of world science and innovation in modern conditions is an important factor in the consistent and sustainable development of all spheres of public and state life, the formation of a worthy future of the country. Additional measures to improve the quality of education and ensure their active participation in the wide-scale reforms implemented in the country by President Sh. these decisions were also highlighted [2].

In the modern educational environment, increasing the independent work of students of higher education institutions, developing their creative abilities requires the use of advanced pedagogical technologies and educational literature of the next generation. At the same time, the emergence of information and communication technologies today requires the development of new forms and means of knowledge transfer.

It is worth noting that there are specific requirements and conditions for teaching physics in natural sciences. Teaching physics in the natural science education groups should focus on developing a student's scientific thinking. The syllabus should have a theoretical material and a system of tasks needed to enable students to study physics independently and to study their physics [6]. Necessary conditions for achievement of planned results in teaching physics in natural sciences:

- ability and ability of a physics teacher to carry out a basic physics curriculum in natural science classes;
- conscious perception of the topics being studied by students;
- availability of educational and methodical packages that meet the requirements of state educational standards when conducting classes in physics.

Based on the foregoing, we consider the principles for selecting the content of physical activity for groups in the field of natural sciences of education and the criteria that arise from them:

1. The content of the physics course must be determined by the mandatory minimum knowledge of the subject. The teacher should be able to form physical

concepts in students through demonstration of experimental experience and laboratory work.

2. In passing the material, the teacher should be able to present the existing experimental facts, models used to study the hypothesis, theories, implications and experimental results proposed to explain these facts.

3. It is important that the laboratory work by the students in the field of natural science focuses on the creation of independent and creative activities that underpin universal educational activities. A possible option for individualizing work in the lab is to select non-standard tasks that are creative, and these are related to project activities or the use of information technology [2].

When teaching physics classes in natural sciences, it is desirable to take into account the peculiarities of students' thinking: many laws are taught without formulas (students are given final formulas), without giving complex computational problems. It is necessary to use sophisticated schemes of macro- and micro-processes, principles of design and operation of technical devices, snippets of video films, demonstration of unique photographs, graphs, formulas, animation of studied processes and events, movement and development objects. For example, it is not possible to directly observe nuclear changes, electrons in the magnetic field, and so it is possible to model such phenomena and experiences. Students are active and meaningful with visual aid, which increases the effectiveness of their impact on mental development and the acquisition of learning materials.

Sometimes it is necessary to replicate the experiment with animation and draw a conclusion from the rule or law based on it. The presentation method is widely used to explain new material, in which you can specify drawings, graphs, concepts or laws, formulas, thematic tasks, and conclusions [4].

For example, when adopting the ampere directional rule, it is first necessary to demonstrate the experience of the interaction of parallel conductors with current.

Then you can focus on your e-learning products developed by the POWER POINT program: create an experimental diagram, determine the directional polarity of the circuit, the direction of the circuit, the magnetic induction vector created by the second conductor, the direction of driving force, and the left arm. . Make sure there are no rules and exceptions in this case. To test students' knowledge of a particular topic on a small scale, we can conduct a preliminary survey in the following form: place a puzzle on the presentation slide, showing the order of the question in each.

Selecting the number, the student answers the question, the check is done. Clicking on the puzzle will remove it from the slide. Students will repeat the topic by answering the questions. Thus, we will gradually open a message hidden to

students under puzzles, such as the title of the new topic being studied in the section, and so on.

In conclusion, it is important to note that creating an image of an event that will help students gain physical knowledge successfully through electronic textbooks and demonstrations is important in shaping their physical worldview. Thus, the use of information and communication technologies will allow us to move from passive assimilation of learning material to conscious acquisition of knowledge, which will make the learning process more interesting and effective.

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