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DEVELOPMENT OF PHYSICOTECHNOLOGICAL BASIS OF UNCONVENTIONAL ENERGY SOURCES IN TEACHING THE DEPARTMENT OF ELECTROMAGNETISM ON THE BASE OF INNOVATIVE PEDAGOGICAL TECHNOLOGIES

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ABSTRACT: The article describes the systematic and structured visual study methodology of the main processes and phenomena of the "Electricity and Magnetism" department of physics.

KEYWORDS: electricity, magnetism, field, charge, electric current, polarization, gas flash, electronic emission, magnetics.

INTRODUCTION

In the course of education, the pedagogue aims to increase the level of independence and responsibility of students, to try to solve problems without the teacher's guidance, and to achieve a sense of pride in the results they have achieved today. As a result, it becomes possible to ensure the unity of the educational and educational process and to show the same issues in the audience and outside the audience with different methods. In the deep study of the electromagnetism section of physics, the study of laws and formulas related to science, the role of science today in the development of technology, the field of production and daily life, the student's scientific outlook on science, ability to increase thinking ability, mental development, self-understanding potential is explained by students' ability to use knowledge in daily life during class and professional activities.

In addition, students should be informed about their personal views on the development of their psychological characteristics, their interest in studying, work, friends, and themselves, taking into account the young people's views of their chosen methods and abilities in thoroughly mastering the electromagnetism section of Physics. It also requires an understanding of the attitude of the person, the self-demandingness, initiative, desire for research, goal, independence, will and emotional qualities, the level of determination activity and the views of mental improvement.

One of the most important issues in the educational process of teaching physics course is to increase students' interest in news in the course of the lesson, to turn passive listeners into active participants. This helps to control the quality of education. Science teachers can analyze, compare, encourage, motivate, focus on learning, develop young people in the process of self-

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generalization, and they are related to each other. they should be able to focus their attention on identifying their problems [1].

It is impossible to imagine our daily life, lifestyle, and all existing fields of science and technology and production without energy and energy sources. According to statistical data, the amount of raw materials (coal, oil, gas) that make up energy sources is decreasing sharply. This, in turn, creates the need for the development and widespread introduction of new unconventional and renewable energy types. From this point of view, the gradual formation of knowledge about the possibilities in the direction of using renewable energy resources in this field is of great importance in the process of physics education. In this information, the step-by-step formation of the physico-technological foundations of non-traditional energy sources in the course of teaching physics is highlighted as much as possible. Examples of non-traditional and renewable energy sources include solar photoenergy, wind energy, geothermal energy, and bioenergy. Solar photoenergy is the most efficient and ecologically clean of these types of energy, and it has much higher efficiency and potential. Semiconductor elements are the main raw materials in solar photoenergy. Semiconductor elements have very high electrical and optical properties and photosensitivity. Also, these substances are elements that are very sensitive to external influences. In secondary schools, it is appropriate to provide elementary concepts and information about solar photoenergy to students, that is, in physics classes. In the table below, topics related to the conversion of solar energy into electrical energy and the physical and technological basis of non-conventional energy sources are recommended [2].

Elementary concepts and information in general education schools should be as simple, convenient and understandable as possible. As an example, the process of the movement of electrons and holes in the p-n junction (potential barrier) in the photoeffect phenomenon is the basis for the formation of a clear image in the student. It is relatively easier to understand the nature of physical laws. Taking into account the age of the students and their worldview, in the process of teaching physics, there is a need to develop the physical-technological foundations of solar photoenergy. In this linked information, topics that reflect the main concepts of solar photoenergy were recommended. In addition to these recommended topics, independent works and abstracts using Internet materials, magazines and other media can be used to develop knowledge and skills. The progress of modern science and technology is causing unprecedented discoveries and innovations in the field of physics. Discoveries revealed in scientific research in solar photoenergy are leading to the development of this field. In order to convey this information to the students, the teacher should use the available opportunities to organize the lesson processes in an interesting and effective way, and to find opportunities for the lesson to pass at an "excellent" level. In this case, the use of new innovative pedagogical technologies and non-traditional types of lessons gives positive results [3].

It is expedient to include the physical-technological foundations of renewable energy sources and information on the structure, principles of operation and possibilities of use of photo-energy

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devices in the physics education of general schools as a requirement of the times. Because, now and in the future, it is impossible to imagine the lifestyle of all mankind without energy sources and energy.

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