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THE ROLE OF E-LEARNING RESOURCES IN MODELING PHYSICAL PROCESSES

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ABSTRACT

Now, as a result of the development of Science, Technology and innovation technologies, interest in increasing the effectiveness of education through the use of interactive methods (innovative pedagogical and information technologies, attention is increasing day by day. The article focuses on the aspects of the use of e-learning resources in modeling physical processes.

KEYWORDS: *Education, Innovation, Physics, Physical Processes.*

INTRODUCTION

Globalization, international economic integration, the processes of international division of labor, a high level of automation of production processes impose their completely new and dynamically changing requirements on the existing market of educational services. Therefore, improving the competence of teachers, who are an essential element of the educational process organization system and ensuring the quality of education, is one of the most important issues on the agenda. Training and education of competitive specialists not only in the domestic, but also in the world labor market, the education system requires teachers to have a high level of professional competence, constant and consistent improvement.

”The goal is to identify priority areas of systemic reform of higher education in the Republic of Uzbekistan, bringing to a qualitatively new level the process of training highly qualified personnel with modern knowledge and high moral qualities, independent thinking, modernization of higher education, development of the social sphere and economic sectors based on advanced educational technologies " [1]. Work in this direction has reached a new level after the Decree of the President of the Republic of Uzbekistan Shavkat Mirziyoyev "On the Strategy of actions for the further development of the Republic of Uzbekistan" dated February 7, 2017.

MAIN PART

The learning process of a modern person does not end only with a kindergarten, a school, a lyceum or a college, a higher educational institution. It is necessary that a person receives education throughout his life, that is, education should be continuous. So, continuing education is a requirement of the period. That is why there is a need for modern information technologies.

Informatization of the XXI century informatization of education in the age of admission, in every educational institution:

- The learning and learning process;

- Management of an educational institution;

- Requires informatization of the environment of the educational institution.

Currently, computers are used in the educational system mainly in four directions:

- As an object of study;

- As technical means of training;

- In the education department;

- Used in scientific and pedagogical research.

Widespread introduction of modern information and communication technologies in education:

- Informatization of branches of science;

- Intellectualization of educational activities;

- Deepening of integration processes;

- Leads to the improvement of the infrastructure of the education system and its management mechanisms.

Introduction of modern information technologies into educational processes:

- For the student to acquire professional knowledge;

- To in-depth development of the field of science by modeling the studied phenomena and processes;

-To expand the scope of independent activity of the student due to the diverse organization of educational activities;

- Individualization and differentiation of the learning process based on the introduction of interactive communication opportunities;

- Mastering the strategy of mastering the educational material by using the capabilities of the artificial intelligence system by the student;

- To the formation of an information culture in it as a member of the information society;

- The representation of the studied processes and phenomena with the help of computer technology becomes important, since it leads to an increase in the interest and activity of students to the basics of science.

The use of information and communication technologies in the modeling of physical processes is carried out mainly in two types. The first condition is technical equipment, and the second condition is something that is specifically supplied with the software. Availability of technical equipment: computers, network devices, high-speed Internet networks, equipment, etc.

The most correct way of educating modern youth is to foster talent for creative activity, taking into account personal interests, starting from school and ending with a higher educational institution and further. One of the most acute problems facing educational institutions is to

improve the quality of training of graduates-specialists. And the training of highly qualified scientific personnel is a matter of national importance.

The complexity of teaching physical and mathematical sciences today is due to the impetuosity of the era, the rapid change of computer technology and technology. As a result, numerous changes are being made to the state educational standard, especially to the curricula for physical and mathematical sciences taught in higher educational institutions. Nevertheless, special attention should be paid to the development of creative abilities of young people. Because this is one of the key factors determining the future, the progress of our country. It is known from world experience that the creative abilities of young students develop more in non-standard issues, specific problematic issues.

The progress of scientific work has been achieved by people with creative abilities in all fields of science, therefore, when teaching such students in higher educational institutions, it is necessary to pay attention to the further development of their creative abilities. Of course, students' creative abilities cannot be developed in one or more lessons. This issue needs constant and systematic special attention. As already mentioned, the creative abilities of young students develop more in non-standard issues, specific problematic issues. During the preparation of such questions and questions, teachers need to take into account the individual characteristics of each student. The analysis has shown that there are enough such questions designed to promote the creative activity of gifted students of secondary schools, gifted students of academic lyceum and professional colleges, and even methods of compiling and using such questions have been developed.

One of the main issues in the organization of physics practices is getting students sufficient physical data from the lesson process, the experiment process. as a result of experiments in laboratory work, the devices are not very difficult to manufacture and operate. In order to draw physical conclusions from the results of the obtained experiment, it will be necessary to process the data. Mathematical processing is necessary for each laboratory.

Computing machines, which have been widely developed in recent years, will be very useful in mathematical modeling of physical processes, processing of results and other works.

Creation of programs that process experimental results based on the constructed algorithm and display them on the screen using the method of mathematical modeling of physical processes. Such programs can display processes on the screen using graphical elements in mathematical modeling of various processes using formulas, using the lectures passed.

Physical processes can be experimented once on some parameter value and presented on a computer with other values of the remaining parameters. It absorbs time and saves material.

The results of the experiment can be processed and determine how well the structured mathematical model reflects the physical process. It is also possible to statistically process the results obtained after repeated laboratory work.

CONCLUSION

Thus, equations are one of the mathematical devices used to model processes studied in the natural sciences, such as physics, chemistry, biology, as well as in engineering. Therefore, it is necessary to teach students not only to find solutions to equations satisfying a particular condition, but also to investigate the features of these solutions. In other words, you will have to

look at the set of all solutions of the equations. At the same time, the opportunity to get a solution in a visual form was not always the impetus for the development of methods for approximate solution of equations, and on the other hand, the availability of mathematical software packages for their solution signals the relevance of our research.

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