

PHYSICAL SCIENCES

MODERN METHODS OF THE SCHOOL PHYSICS COURSE

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<https://doi.org/10.5281/zenodo.10817047>

Abstract

Modern studies have shown that new approaches are needed to solve the problem of forming life skills in students. In the teaching of physics lessons, we give a lot of space to these new methods. The process of computerization of the teaching of the school physics course was greatly replicated, based on the interactive form of training. The use of computers in the process of teaching physics has completely changed the old traditional teaching methodology. It should also be noted that, unlike traditional lessons, lessons conducted with interactive methods and computer technology are more interesting and profitable for students.

Studying the school physics course has a very important role in the process of preparing students for practical application of the acquired knowledge. The universality of physical methods allows reflecting the connection of theoretical material with practice at the level of universal methodology. This also determines the importance of physics in forming students' ability to solve problems encountered in life. Modern studies show that new approaches are needed to solve the problem of forming life skills in students. The analysis of the physics education system in secondary schools shows that the students' knowledge of physics comes from integrated courses such as "life science" and "technology" in elementary schools, and in basic schools, along with these subjects, they learn from the basic physics course, chemistry, biology, geography and additional optional courses. Thus, the physics education system is formed in 3 stages, primary, basic and full secondary education.

Currently, the effective application of information technologies in secondary school physics classes is closely related to the optimization of the teaching process. The process of mastering new information technologies established by applying computer technologies and using all its possibilities to effectively organize the education system of the country and to establish organized relations with educational institutions of the world countries through the international information network is underway.

Information about physical science is increasing every day, every moment. The emergence of new information and its prompt delivery to society distinguishes the Internet from a book and increases its effectiveness. It is necessary to note 3 directions of using the Internet in the process of teaching physics: The most important issue in teaching physics is expanding and deepening the volume of live observations. For this, it is necessary to show physical experiments and demonstrations to pupils and students in both natural and artificial conditions (schools, classrooms, nature). Considering that we live in the information age, we cannot imagine the activities of schools without the application of computer technologies to the teaching process. Nowadays,

computerization of schools has different training forms. For example, facultative, association, etc. can be taken. [2, 4]

Posters, pictures on the board, and illustrations in books can be used to explain the topic at the maximum level in the physics lesson. For example, to explain the nature of electric current in metals, a film can be shown on this topic. In this case, it remains to use training tools related to new information technologies: videos and computer models. Recently, the production of educational videos has become widespread. They have a high degree of visibility and have taken a worthy place in the sphere of teaching physics.

From pre-school institutions to different levels of education, different options are used during the teaching of different subjects along with informatics. The use of computers in the process of teaching physics completely changes the old traditional teaching methodology. Because, in the modern era, it is very important to build the process of computerization of physics teaching on an interactive form of training. Modeling of physical phenomena and processes is considered to be the most important component of the traditional teaching system of physics, and great opportunities are opened to this important component under the conditions of an interactive computer system. [3, 4]

Interactive features of computer models allow to change the course of time depending on the degree of control, and at the same time allow to graphically illustrate not only events as a whole, but also individual stages of the process. There are certain aspects of perspective and pedagogical purposefulness of computer use in modern physics class. Examples of them include:

1. Direct measurement of values of physical quantities as part of real measuring devices;
2. Processing, storage and visualization of the results of a natural physical experiment.

Mathematical software packages integrated into the ICT tools used in teaching physics, construction of graphs, modeling of physical processes with mathematical tools. Electronic spreadsheets are also used in physics classes, and the use of electronic spreadsheets

is methodologically very important. (eg: Microsoft Excel). Mathematical modeling of physical processes with their help ; - numerical data processing; - activities such as creating graphs and diagrams are carried out. The analysis of the current situation of the use of Information Communication Technologies in the process of teaching physics allows us to draw the following conclusions :

1. The following are the most important directions of using Information Communication Technologies tools in the process of studying the properties of objects, studying the regularities of their mutual relations in the physics course:

a) using new forms during the presentation of knowledge; b) computer modeling; c) proper use of educational demonstration equipment; d) visualization of the results of the experiment; e) organization of joint telecommunications projects.

2. In the process of studying physics, the use of software and technical tools of Information Communication Technologies and the network educational resources created on their basis realize or help to realize the following methodological aspects. We can show them the following as an example: a) provision of opportunities for solving different types of issues; b) formation and development of the ability to use mathematical expressions during the study of physical phenomena; c) development and preparation of graphic images of objects and processes studied by means of information technology; d) formation of skills to perform a physical experiment and analyze its results.

3. The use of Information Communication Technologies tools in the process of teaching physics creates the opportunity (conditions) for the implementation of the following didactic principles: a) individual and differentiated approaches b) visibility c) interactivity d) feedback.

In modern times, issues related to education, including physics, are also finding their place on the Internet. Informatization of education is a large-scale comprehensive innovation that has been introduced to educational practice in the last 15 years.

As we know, computer technologies provide many new opportunities for organizing the educational process. Therefore, you should not be satisfied with only electronic textbooks. For example, using a computer, in the simplest case, using POWER POINT or other graphic programs, you can build three-dimensional models of various physical phenomena and create various animations. Such materials greatly help students master the studied topics and think correctly on this topic. At the same time, let's agree that unlike the traditional lesson, the lesson conducted with interactive method and computer technology is more interesting for students

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