



# The Use of Information Technology in Teaching Exact and Natural Sciences

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This article reveals the purpose, content and essence of using information technologies and advanced innovative pedagogical technologies in the organization of the educational process in our Republic, as well as the role of education.

**Keywords:**

information technologies, innovative technologies, quality of education, Internet, multimedia, interactive methods.

Nowadays, interest in the application of innovative technologies, pedagogical and information technologies in the educational process, attention is growing every day, one of the reasons for this is that until then, in traditional education, it remains a requirement of the period to teach students and students to acquire only ready-made knowledge, to find out for themselves the knowledge that modern technologies acquire. In this process, the teacher creates conditions for the development, formation, acquisition and education of the individual, and also performs the function of management, orientation. In the process of education, the student and students become the main figures. The use of Information Communication Technologies along with pedagogical technology and pedagogical skills ensures that students and students receive educated, mature qualifications.

Currently, a comprehensive study of the effectiveness of any educational discipline of general secondary education in its entirety or in what part of it is carried out using ICT, or the pedagogical principles of the application of ICT, its psychological characteristics, the

mechanism and factors of its influence on the process of cognition, as well as many other aspects is becoming relevant. This creates the basis for the formation of a new content and essence in the educational system, in particular in the organization and implementation of educational processes, the development of educational and methodological support, especially in increasing the efficiency of passing and mastering training.

In the successful implementation of such a huge task, it is of particular importance to convey to the teacher and students the necessary educational literature in the state language. The methodological instruction is intended for teachers operating in secondary schools, which includes knowledge of the formation of a new content and essence in the educational system, in particular, in the organization and implementation of educational processes, the development of educational and methodological support, especially in increasing the efficiency of passing and mastering training sessions. The main goal of all reforms in the field of education is to educate spiritually perfectly developed people, improve the educational

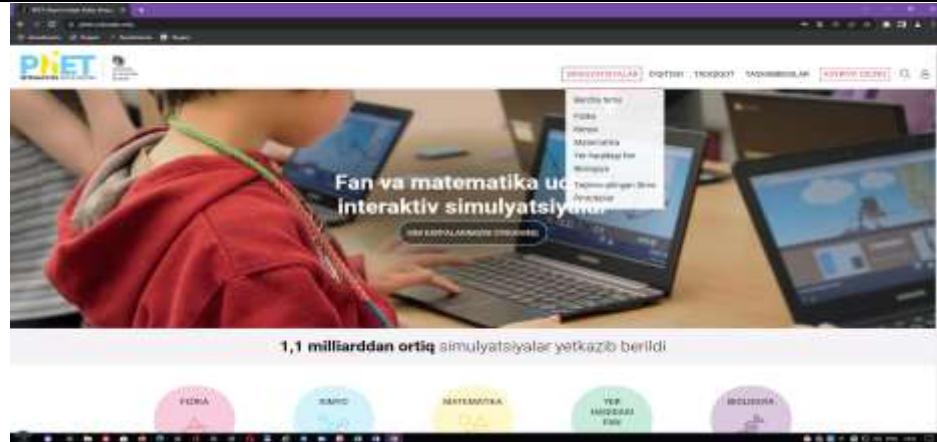
system, carry out lesson processes on the basis of new pedagogical and information technologies in accordance with the requirements of the All-Round time. That is why today special attention is paid to the effective use of modern technologies of computer and information technology in the educational and educational system. And this is due to the fact that in the process of Education, pedagogical personnel who provide students with knowledge in various disciplines can use modern means of Information Technology, first of all, increase the level of knowledge and qualifications in this area, technical support of the educational system, and create full opportunities for using the internet, an effective result can be achieved.

One of the main ways to improve the quality and effectiveness of the educational system will be the use of modern Information Communication Technologies in the educational process, including multimedia training courses, ensuring interactive interaction of the teacher and the student, attracting highly qualified personnel in the development of multimedia training courses and textbooks. Multimedia creates opportunities to describe information in different ways and create dynamic images, perceive and visualize it through the organs of vision and hearing.

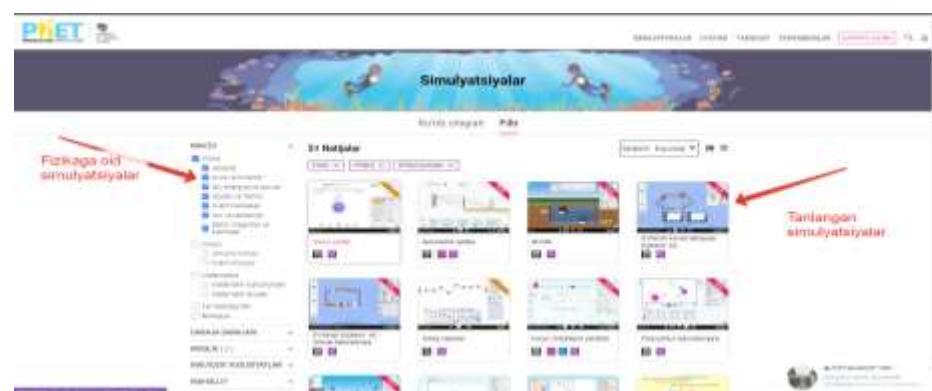
In Multimedia technologies, the fact that information is expressed in the form of images, sounds and actions, and not in the form of text, than in traditional technologies, teaches students to be more active, more attentive and curious in classes, since each information that is recommended is carried out through their participation and action. In the educational system, multimedia technologies are a tool that

positively and effectively affects students by combining theoretical, practical, visual, informative, training and control parts. In addition, the use of multimedia training courses in the educational system makes it possible to create high-quality video recordings of demonstrations of theoretical materials, virtual laboratory works and practices, animated models of imitation of various processes, for which it will be necessary to organize practical activities of students in educational classes, computer classes, in the room of technical means of teaching, in In addition to the fact that all multimedia training courses used in the educational system have passed practical application and experience, they must also have their own pedagogical characteristics. The pedagogical and psychological characteristics of multimedia training courses will depend on the form and appearance of the description and expression of educational materials used to form knowledge and skills. They should be focused not only on the process of solving examples and issues, performing practical and laboratory classes, but also on the formation of students' knowledge, skills and abilities in the entire educational process.

In our republic, the use of foreign educational technologies remains one of the most pressing issues in the coming years. Today, when conducting visual live classes, it is important to use the internet, that is, information and communication technologies. Especially when teaching the exact and natural sciences, we will reflect on some sites below. These sites Phet.colorado.edu, Khan.academiyasi.uz, Vascak.cz va crocodile clpis let's think about the programs

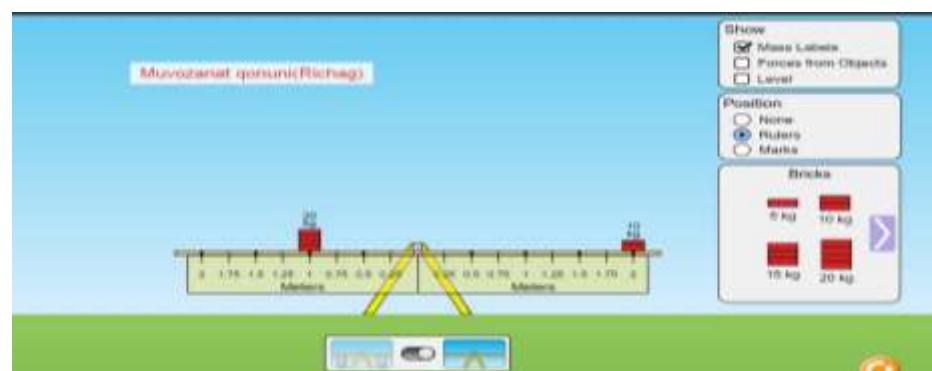


[Phet.colorado.edu](http://phet.colorado.edu) the site has more than 1.1 billion simulations, in which students and students are created opportunities for independent knowledge



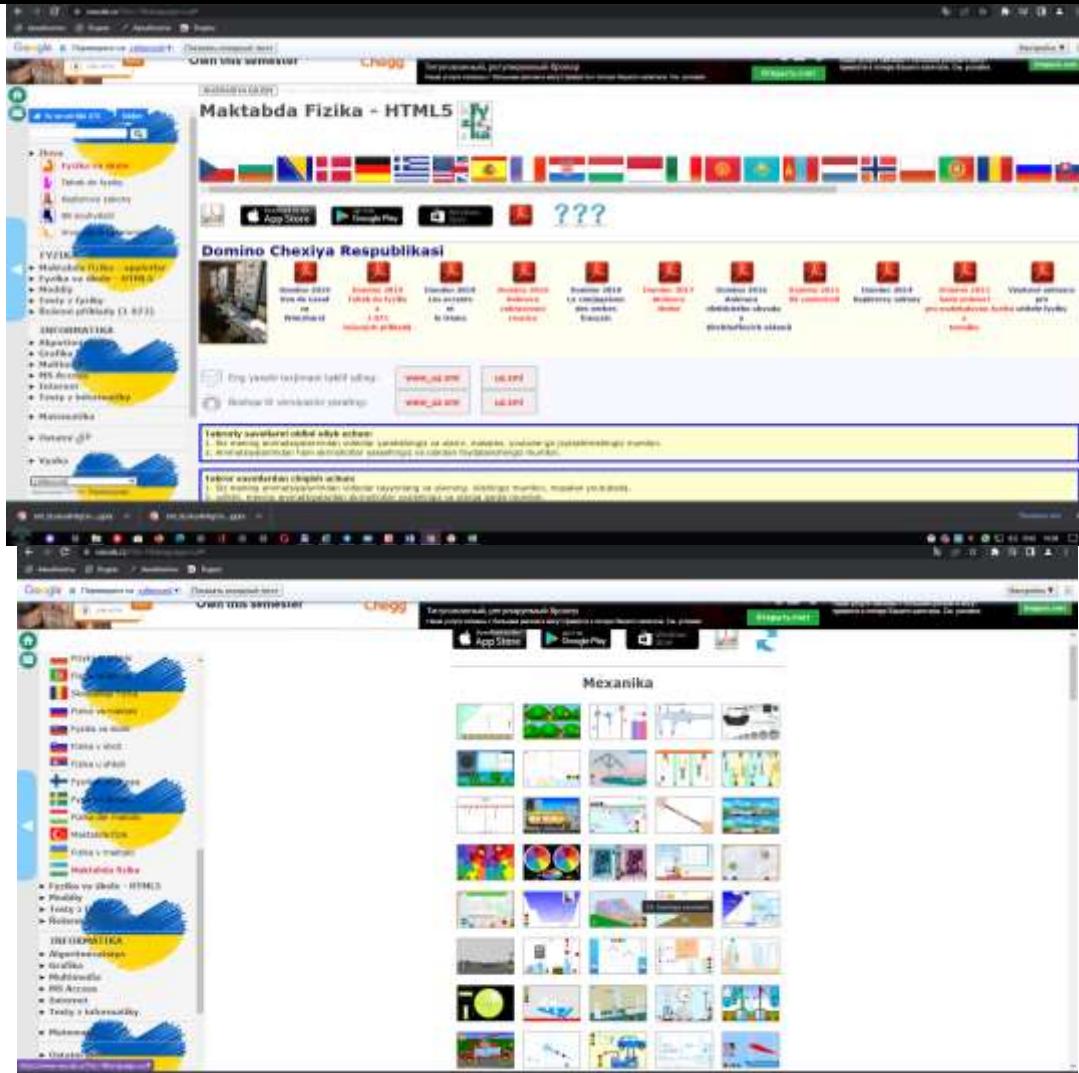
Simulations from Mathematics, Physics, Chemistry, Biology were also created through this site. Simulation means the word "similis", which can be translated from Latin as "similar", and the suffix "- ion", which is equivalent to "action and effect".

Using this site provides a wide range of opportunities for students and students to practice teaching exact and Natural Sciences. Phet simulators created the site by Viman "Physics Education Technology" (PhET)



Similar to Phet by Vladimir Vascak [vascak.cz](http://vascak.cz) the site has also been created, which also expands the scope of education for future teachers in the school by teaching students of

the higher education system the application of the extensive use of the vascak site in teaching exact and Natural Sciences



Hence, modern educational technology is an educational event that meets all the requirements of the sites presented above. Today, one of the requirements of the "national curriculum "of the" law on education " is considered to be the means of increasing the efficiency of teaching teachers in the educational process, using advanced foreign educational technologies along with new pedagogical and information technologies. A wide range of work is being carried out in the Republic on the application of information technologies in the educational process. The scientific theoretical foundations of this problem, the peculiarities of the use of foreign educational technologies in the introduction of each pedagogical technology are being developed and sufficient experience is being accumulated.

When creating multimedia training courses for the educational system, one of the

main didactic issues of this area – general methods of influencing the objects of modeling and imagination of teaching-occupies one of the most important places. The creation and use of Multimedia training courses the local computer and the internet network open up a wide range of possibilities. The placement of multimedia training courses on the computer network of the whole world, their correct application in the use of the educational process, creates opportunities for students to find information, form and expand the search and learning activities. In conclusion, when creating multimedia training courses, the main attention should be paid primarily to interactive components that are created by various software tools.

In the formation of the future generation, it is appropriate to organize distance education based on distance learning technologies, to recognize these tasks as a

positive result of their implementation in practice. Internet is a distance education based on technology, which is a modern universal form of Education, which is aimed at individual requests from students, personal needs and their interests. The effective implementation of the organization of a distance learning system based on information technology in the learning process in combination with a traditional teaching system will depend on several factors such as:

- \* availability and adequacy of a modern information and computer technology base in educational institutions;
- \* Continuity of work in the internet network;
- \* high level of passion, interest and mastery of knowledge of students receiving knowledge at a distance;
- \* involvement of educated, qualified and experienced professionals and teachers in the distance learning system;
  - availability and adequacy of the distance learning system with the necessary and high-quality teaching materials, electronic textbooks and training courses;
  - \* systematic conduct of all classes in the distance learning system.

In addition to traditional teaching tools, distance learning tools in the process of teaching and educating students also include:

- \* electronic educational publications;
- \* Computer Training Systems;
- \* audio-video training materials;
- \* educational control recommended by various sources of literature and information tests;
- \* communication with library database;
- \* virtual materials and laboratories;
- \* criteria and materials for assessing students' knowledge.

A distinctive feature of the informatized Society of the present time is, for the first time in the history of civilization, the power spent on achieving knowledge and production was more than the cost of energy, raw materials, materials and material consumption items, that is, information technology occupies a leading place among all existing technologies, in particular, new ones.

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