

USE OF INTERACTIVE MULTIMEDIA TECHNOLOGIES IN TEACHING INFORMATION CYCLE DISCIPLINES

Atajonova Saidakhon Borataliyevna, Sayidova Mexrinoz
Andijan machine-building institute

Abstract: The article discusses the use of interactive multimedia technologies in teaching information science disciplines. Modern educational technologies play an important role in improving the quality of education, especially in technical disciplines. Interactive multimedia, such as virtual laboratories, animations and educational platforms, contribute to a deeper assimilation of the material by students. The purpose of the article is to study the influence of these technologies on the learning process and develop recommendations for their effective use, consider the role of multimedia technologies in teaching information science disciplines, determine their impact on the educational process and suggest methods for their effective use in technical education.

Keywords: Interactive multimedia technologies, information science disciplines, virtual laboratories, digital learning, technical education, innovative methods, electronic educational resources.

Introduction. Modern technologies are rapidly changing the educational environment, offering new methods of interaction between students and teachers. One of such innovations is the introduction of interactive multimedia technologies in the teaching of information science disciplines. Interactive technologies allow students to be more actively involved in the educational process, providing opportunities for modeling complex systems, interacting with virtual objects and conducting experiments in a digital environment. The introduction of multimedia technologies in the educational process helps students not only better understand the educational material, but also develop the skills of independent thinking and analysis. The introduction of multimedia technologies in the educational process has revealed both a number of positive aspects and several difficult moments. For example, the use of a special projector in the educational process requires training in the organization of the educational process and finding multimedia educational materials [1-3].

To prepare future competent specialists, a professional educational institution includes an important condition - the study of significant volumes of scientific information. This is due to the fact that for future specialists, research activities occupy the main place among the types of activities being formed. Therefore, students face a difficult task: in addition to learning the educational material, they need to conduct an analytical study of large volumes of information [4].

Research methods. The use of Internet technologies and multimedia in education allows for the personalization of the learning process, making it more interactive and visually attractive. Through the use of various types of information and interactive elements, students are actively involved in the learning process, which contributes to better assimilation of the material. In addition, multimedia contributes to the development of such important skills as independent work, information search and critical thinking. Multimedia technologies, such as presentations, animation and interactive applications, have high pedagogical potential. They make learning more visual, interesting and effective. Thanks to multimedia, students can actively participate in the learning process, which contributes to a deeper assimilation of the material [4,5].

The idea of creating multimedia that combines text, graphics, sound and video in a single interactive space originated in the middle of the 20th century. The MEMEX concept proposed by Vanniver Bush laid the foundation for the development of hypertext and hypermedia, which were later combined into the concept of multimedia. This technology, designed to provide convenient search and processing of information by semantic content, is widely used today in various fields of activity [6].

Analysis of foreign practice shows significant changes in the role of the teacher. The modern teacher increasingly acts as a facilitator, creating conditions for independent work of students and the development of their critical thinking. Multimedia technologies, in turn, provide teachers with powerful tools for creating interactive and personalized educational materials, which helps to increase the effectiveness of the educational process [7-9].

Research results. The role of the teacher in the digital age is undergoing significant changes. If previously the teacher was the main source of information, now he or she is becoming more of a conductor of knowledge and organizer of the educational process [10-13]. Computer and multimedia programs allow the teacher to:

- ***Create interactive educational materials:*** Develop a variety of tasks, tests and projects.
- ***Organize group work:*** Ensure that students work together on projects.
- ***Provide individual support to each student:*** Provide each student with the necessary support and feedback.

The main changes caused by the introduction of computer technologies in education (Figure 1):

- ***Increased learning efficiency:*** Through the use of a variety of multimedia resources and interactive methods.
- ***Individualization of learning:*** The ability to adapt the educational process to the needs of each student.
- ***Develop new skills:*** Develop students' skills such as working with information, critical thinking, and collaboration.

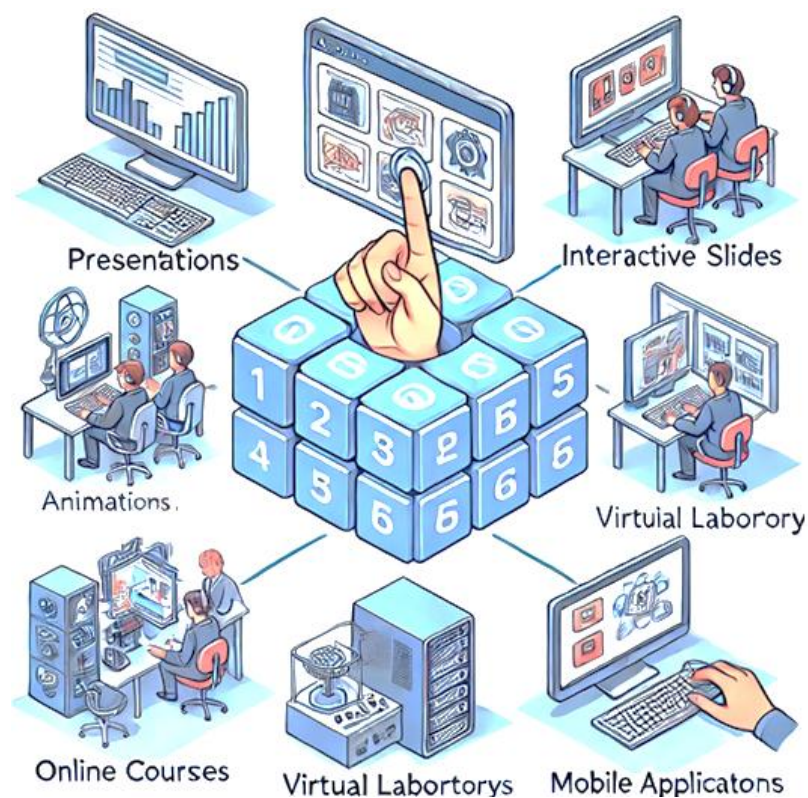


Рисунок-1.

Thus, the computer and multimedia programs have become an integral part of modern education, expanding the capabilities of teachers and opening up new prospects for students.

Conclusion. The use of interactive multimedia technologies in teaching information cycle disciplines opens up broad opportunities for improving the quality of the educational process. They allow creating a more interactive and dynamic learning environment where students can better master complex theoretical concepts through visualization and practical tasks. Virtual laboratories, simulations and other multimedia tools have a significant impact on the development of critical thinking and professional skills in students. The introduction of such technologies into the educational process requires the development of methodological recommendations for teachers and the creation of special training courses.

References:

1. Morozova, E. V. Interactive technologies in education: theory and practice. - Moscow: Academy Publishing House, 2019. (In Russian)
2. Mayer, R. E. (2009). Multimedia Learning (2nd ed.). Cambridge University Press.
3. Laurillard, D. (2012). Teaching as a Design Science: Building Pedagogical Patterns for Learning and Technology. Routledge.
4. Petrov, A. S. Digital educational resources in universities: problems and prospects. - St. Petersburg: Piter, 2020.(In Russian)

5. . Clark, R. C., & Mayer, R. E. (2016). e-Learning and the Science of Instruction: Proven Guidelines for Consumers and Designers of Multimedia Learning (4th ed.). Wiley
6. Ilyin, I. V. Virtual laboratories as a means of improving the quality of education in technical universities. — M.: MEPhI Publishing House, 2021.(In Russian)
7. Ivanova, L. N. Using multimedia technologies in the educational process. // Pedagogy and education. 2020. No. 3. P. 45-50.(In Russian)
8. Simonov, D. P., Chernyshev A. I. Innovative teaching methods at a technical university. — Nizhny Novgorod: UNN, 2022.(In Russian)
9. Shank, P. (Ed.). (2011). The Online Learning Handbook: Developing and Using Web-based Learning. John Wiley & Sons.(In Russian)
10. Rasulova Tursunoy Pazildzhanova. (2024). Project-based learning as an innovative approach to developing practical skills and professional competences in students of technical universities. International Journal of Pedagogics, 4(10), 143–148. <https://doi.org/10.37547/ijp/Volume04Issue10-24>
11. Atajonova S.B. Prospects for the development of innovative training methods in higher education// "Science Week of the Higher School of International Educational Programs" conference collection with international participation St. Petersburg, Russia 03.2024
12. Kasimakhunova A.M., Atajonova S.B. Increasing the creativity of the teacher in teaching students in the field of semiconductor technology// "AIP Publishing" AIP Conf. Proc.3045, 020010 (2024) <https://doi.org/10.1063/5.0197659>
13. Atajonova S.B. Research on the implementation of innovative teaching methods in higher education// Scientific and technical journal Mechanical Engineering. Andijan. 2-Special. issue, 12.2023 pp. 859-866 (In Russian)