

THE USE OF MODERN TECHNOLOGIES IN THE ORGANIZATION OF TECHNOLOGICAL SCIENCE CLASSES

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Annotation: This article presents the role of the use of modern technologies in the organization of technology classes and the main reasons for managing the educational process with their help

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In the age of rapidly developing information technology, the introduction of modern information equipment into the educational process increases the effectiveness of educational and teaching activities. With the use of information technology, you can in a short time be informed about world knowledge and scientific and technological developments. There are several types of application of information technology, including the Internet, electronic textbooks, e-mail, multimedia systems, virtual laboratory work, electronic typography, library catalogs and so on.

With the application of information technologies in the educational process, the educational needs of different social groups are met. Including: distance learning can help train people with disabilities who are difficult to access education for various reasons. It also provides an effective solution of the problem of retraining and advanced training of specialists using information technologies.

As you know, laboratory classes serve to consolidate in practice the theoretical knowledge of students acquired in lecture lessons. Therefore, there is a need to organize and conduct laboratory classes at the highest level. Especially in the teaching of specialists, this process has a significant practical value.

Therefore, in this article I will try to highlight some of the achievements of using a set of virtual laboratory works in the teaching of professional subjects. The relevance of virtual laboratory classes is evident in the training of technical specialists, since the qualifications of these specialists are determined not only by theoretical knowledge, but also by laboratory skills. Virtual laboratories are characterized by the ability to be used remotely, without additional equipment. The creation of a set of virtual laboratory works in interinstitutional cooperation, the exchange of qualifications, remote demonstration of achievements and shortcomings, familiarization with the set of virtual laboratory works created by related universities, the effective organization and conduct of laboratory classes with their direct use when necessary, the formation and creativity of students can be formed and improved. The possibilities can be listed.

Indeed, there is no doubt that in the educational process we will achieve a number of successes with the introduction and effective use of virtual laboratory work. These examples may include:

- creation of an effective management system for information and methodological support of education;
- the use of the peculiarities of computers in the organization of high-quality education;
- to study events and processes in the micro and macro universe within a complex technical and technical system using computer graphics and computer modeling tools;
- providing at a convenient scale and time the study of various real-world physical, chemical, biological and social processes, which go through at large and small speeds;
- the ability to create great opportunities for improving education, raising it to the level of world development;
- to connect students with world science and achievements;
- with the creation and implementation of virtual laboratories, it is possible to create the necessary conditions for solving computer graphics, artistic problems used in the educational process, giving students computer graphics lessons, their independent study, development, and the development of independent thinking skills.

The use of a set of virtual laboratory works in order to consolidate the theoretical knowledge of students in practice provides the following advantages:

- the ability to perform laboratory work, assemble schemes, see the work on the screen realistically, perceive, see mistakes instantaneously, correct them and take measures to prevent such defects again;
- no adverse technical events occur while performing virtual laboratory work;
- creating the illusion of real-time presence on the screen, a comfortable situation arises when viewing and studying any large and small details of laboratory work (graphs, schemes, tables, etc.);
- it is possible to imitate reality, expand the range of influence on the development and activities of processes by participating in the processes taking place on the screen;
- if necessary, new and valuable information can be obtained by changing the given magnitudes (speed, acceleration, current strength, voltage, frequency, capacity, resistance, mass, force of gravity, height, length, etc.);
- There are great opportunities to transfer, accept, and exchange qualifications of such a set of laboratory works to other universities via the Internet.

When conducting laboratory lessons, methodological instructions designed to clarify the topic (which reflects the topic, purpose, content of the work, the list of necessary equipment, the order of work, the formula, table, scheme, graph, control questions and other data) and the technical

means necessary to perform the work (measuring instruments: voltmeters, ammeters, wattmeters, etc.; elements of electrical and radio engineering: resistor, transistor, capacitor, vacuum lamps, diode, triode, transformer, resistor gauge, etc., as well as current sources of different voltages) are required. Unfortunately, in some laboratory rooms, these two resources are not enough.

The technical means intended for the assigned work do not meet the requirements of the time. To solve this problem, we have advanced ideas that are expected to be effective in the organization and conduct of laboratory classes in the subject of technology education.

We have mentioned above that in order to do laboratory work you need two sources (a methodological manual and a technical means). It is possible to embody all these resources simultaneously by computer technology. For example, in the subject of technology education, one might use the simplest programs such as Electronics Workbench, Scratch, tinkercad, canva, chatGPT, and many others. The programs have the following convenient facilities for laboratory and practical work:

- almost all of the technical means designed to perform the work are present in the program;
- convenient to assemble schemes and get results;
- there is an opportunity to do several tasks or one task several times during one paired lesson;
- students will be able to master the content of the work, since it does not take a lot of time to complete laboratory work;
- using the program, students can complete all the specified laboratory work, master it, independently repeat it;
- Teachers will be able not only to easily complete the amount of hours allotted for laboratory work, but also to revise, analyze, strengthen the lesson.

Many more of these conveniences can be mentioned. The abovementioned programs "Electronics Workbench", "Scratch", "tinkercad" are designed to perform not only the fundamental work of laboratory work, but also the work that embodies the latest achievements of modern science and technology made of integrated circuits. Currently, in addition to "Electronics Workbench", "Scratch", "tinkercad", a number of other new, perfectly three-dimensional programs have been created, the possibilities of which cover a wide range of areas. With the help of such programs, it is possible to do laboratory classes not only in the field of technology education, but also in all subjects of general education.

CONCLUSION

In general, we are promoting the idea that it would be desirable to use the capabilities of computer technology in order to effectively perform the practical work defined in the work plan of the subject of technology education. It will be more effective if the laboratory rooms are fully equipped with modern equipment, but when doing laboratory work that is not equipped according to modern requirements, a set of virtual laboratory work and using the method we

have shown will definitely pay off, not only in the teaching of technology education, but also in other disciplines.

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