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THE ROLE OF MULTIMEDIA IN DEVELOPING STUDENTS' INFORMATION DESIGN COMPETENCE

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Annotation: Today, special attention is being paid to improving the quality of education in our Republic. In addition, the introduction of modern information and communication technologies into education, like developed countries, is gaining momentum. This article highlights the issues of developing students' information-design competence through multimedia.

Keywords: Information technologies, ICT capabilities, multimedia, video, audio, animation, graphics, text resources, technical support, software, virtualization, virtual training manual.

Currently, issues of improving the content and quality of education are given special importance in our republic. Also, like the developed countries of the world, they are looking for ways to introduce modern information technologies to education, to develop education, to increase its efficiency, and to improve research in the direction of introducing information and communication technologies (ICT) to education. Today, the use of ICT opportunities in the education system is gaining momentum.

Theoretical and practical types of laboratory training are used in the teaching of general vocational training subjects (GVT) in the professional education areas of higher educational institutions. Among them, a lot of time is devoted to theoretical training. High efficiency can be achieved by organizing lectures in theoretical training in the form of lecture demonstrations using multimedia tools.

Demonstrations with lectures are the first step towards the introduction of multimedia tools into the educational process. When the appropriate equipment is available (for example, a computer room, a projector or a laser printer, etc.), the teacher will have the opportunity to present a much more diverse and informative lecture material than in the traditional teaching method.

The use of multimedia technologies allows to show various moving, fast-moving events and processes.

Multimedia is the embodiment of the delivery of learning materials to learners based on software and hardware, as well as audio, video, text, graphics and animation effects. [1].

Multimedia is hardware and software that allows you to combine computer video, audio, animation, graphics and text resources to create a beautiful presentation.

It is known that the main components of ICT include text, tables, graphics, images, audio, video, and these components are used in practical work (Fig. 1).

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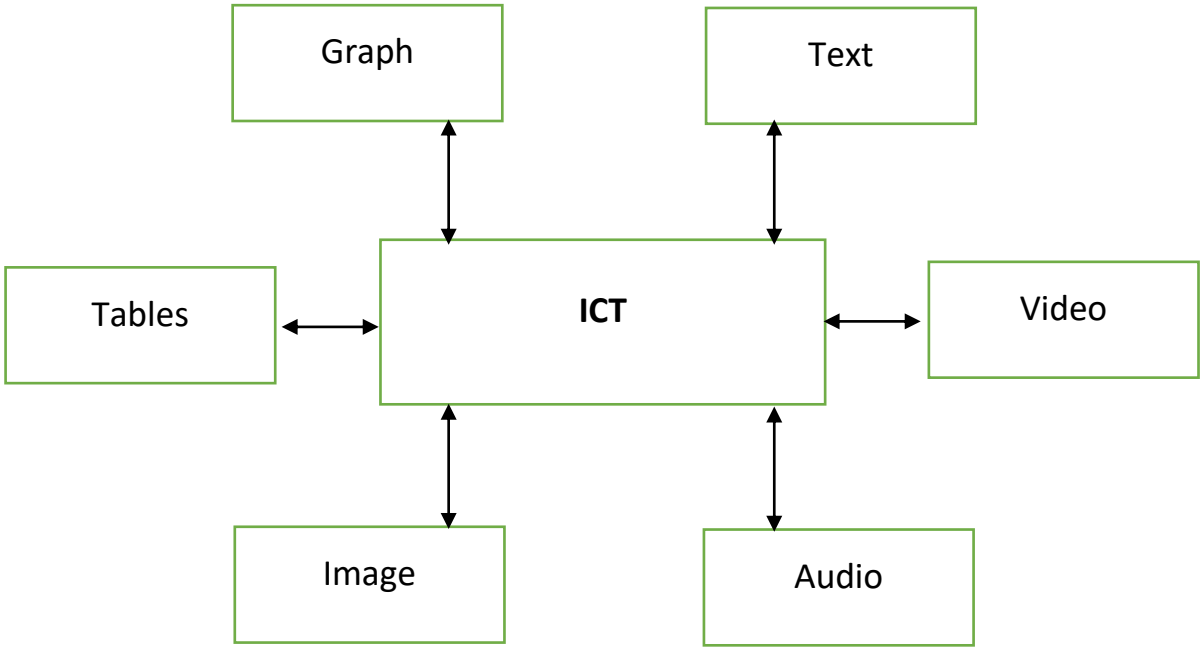

Figure 1. Information technology components

In multimedia technology, in addition to the above components, animation, music and various decorations are involved, and they are different from ICT.

Multimedia allows you to create various media environment elements, interactive presentation applications based on the technical and software capabilities of the computer. [2].

At the same time, the issue of virtualization of the educational process in order to increase the efficiency of education for students in HEIs is also important. **Virtualization of the educational process** means the educational process conducted on the basis of virtual educational manuals. In order to increase the effectiveness of education with the help of virtual training manuals, multimedia tools (animation, sound, image), graphics, schemes, tables, etc. are used.

The advantage of virtual education, in contrast to the real educational process, is that, in addition to imagining, thinking, listening, recording, the student can see every explained process, events and events in the educational process. monitors impossible, hard-to-imagine events and processes in a virtualized computer model. Every chart, graph, table, and complex wording is clearly displayed electronically. Time is saved as a result of checking the knowledge acquired by students through virtual control.

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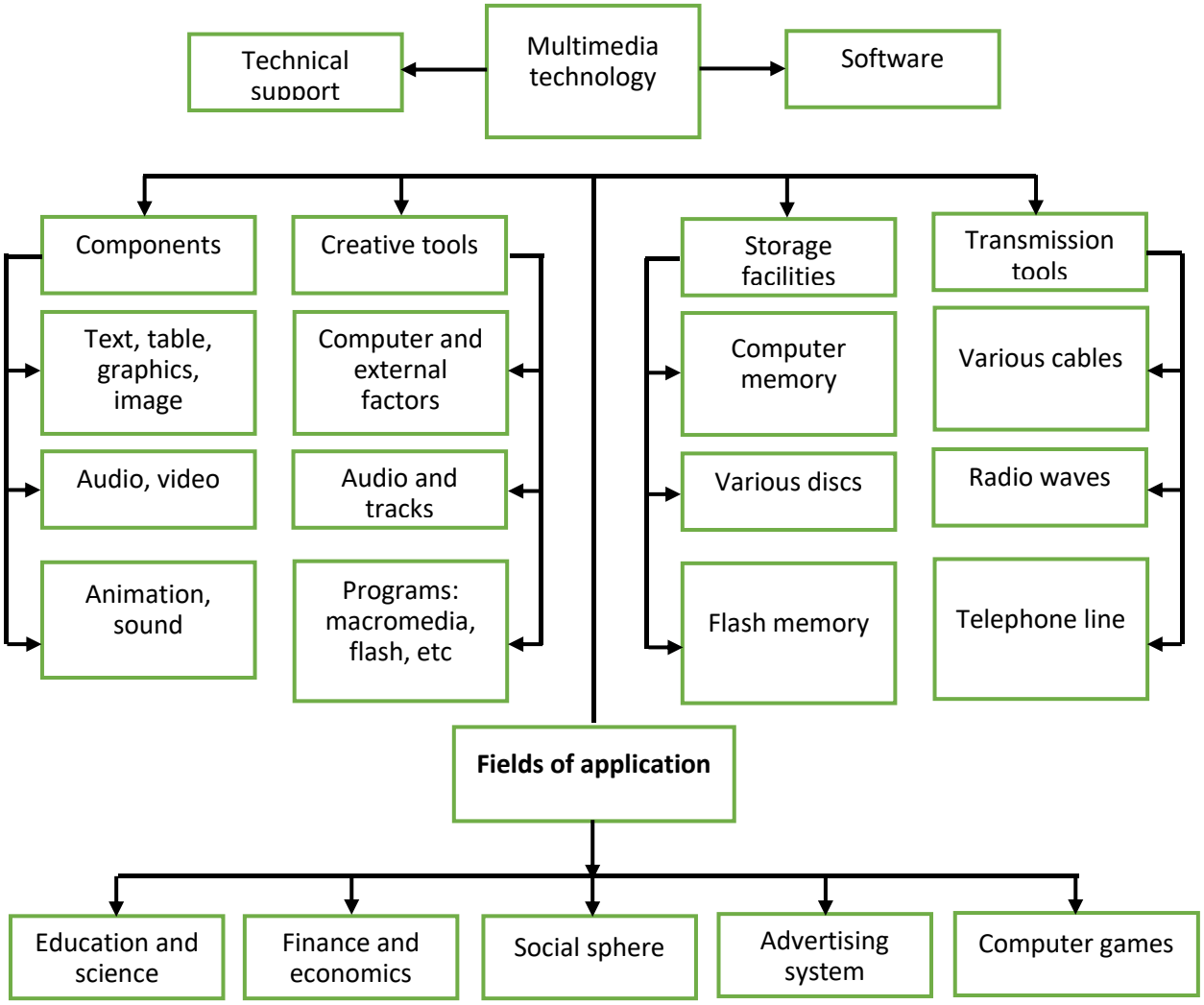

2 pictures. Description of multimedia technology

The application of multimedia technology in the field of education is carried out on the basis of ICT, multimedia technology is one of the multi-defined technologies. Below is one of them. Multimedia is a set of software and hardware tools that provide communication between a person and a computer in the recording of sound, video, graphics, text, and animations [1]. The description of multimedia technology is presented in Figure 2.

The virtual educational process, in turn, consists of a virtual lecture, virtual practical and laboratory exercises based on this lecture, and virtual control blocks for the purpose of checking the acquired knowledge, and these processes work interdependently. (Figure 3).

The advantage of a virtual lecture is that, in addition to tables, graphs, images, virtual models of complex or difficult-to-understand processes are covered with the help of multimedia technologies.

The main goal of using virtual textbooks in the educational process is to create a clear image in the mind of the student of each studied subject and to ensure that the student of the subject can

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independently use the materials of the educational process in his free time. is to ensure deep assimilation by.

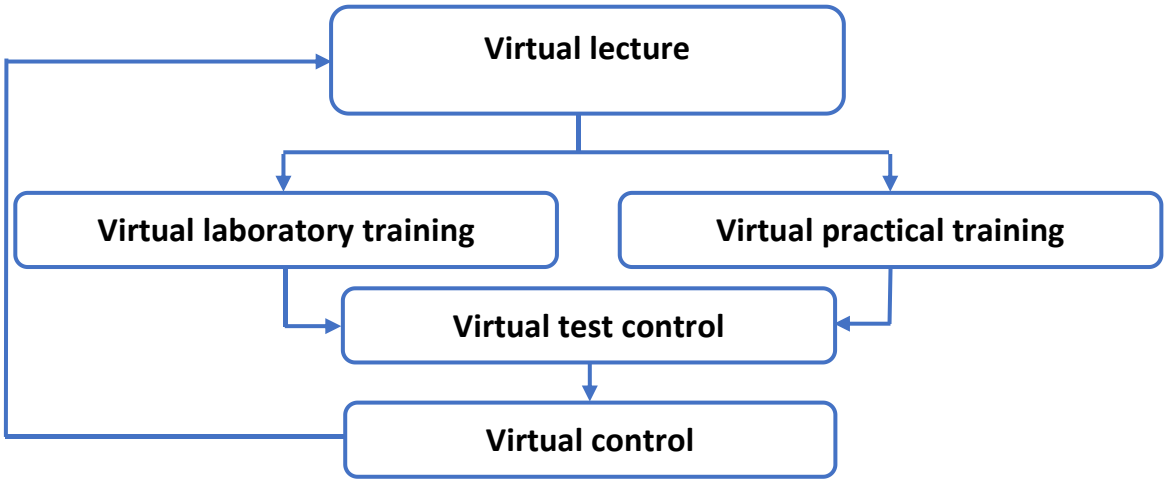

Figure 3. The structure of the virtual educational process

The practical exercises are illustrated with the help of diagrams, graphs, images and tables, and the structure of the virtual practical exercise, which consists of an electronic manual with a lecture, a laboratory exercise and references to the electronic library, is shown in Fig. 4. is reflected.

All virtual and electronic textbooks, electronic forms of science programs, control tests are created by science teachers with the help of programmers on the basis of appropriate software tools.

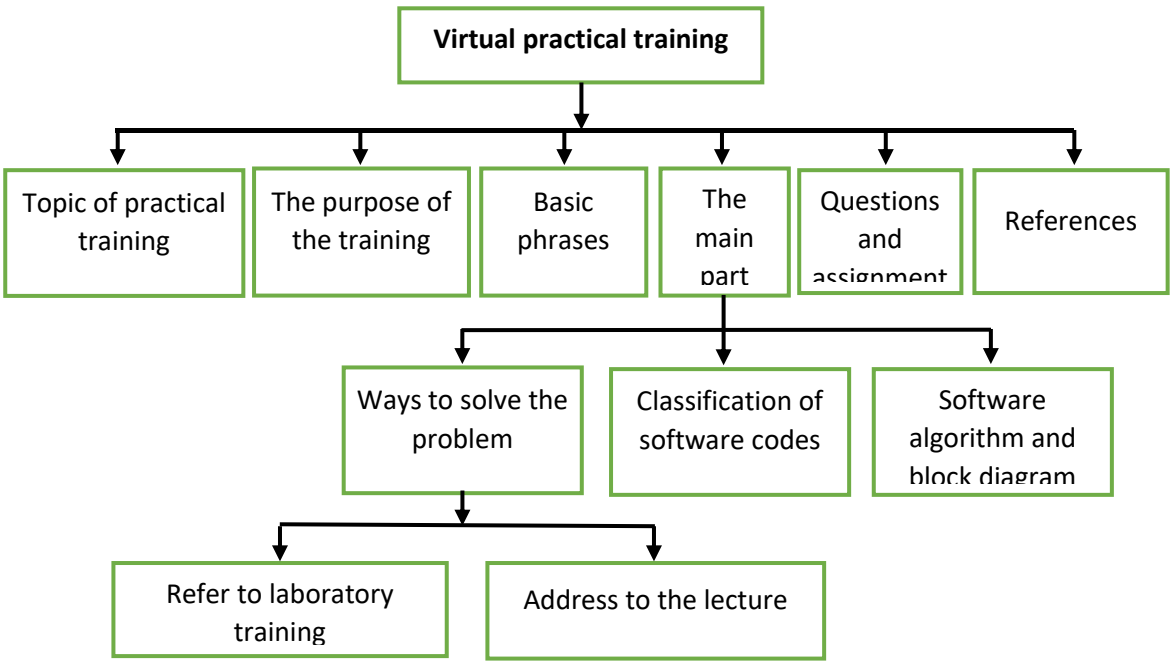

Figure 4. Virtual training structure

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The virtual control block of the educational process consists of tests created on the basis of special programs, and at the end of the test, the knowledge gained by students is analyzed.

In conclusion, in contrast to the traditional educational process, the advantage of virtual education is that, in addition to imagining, thinking, listening, and recording, the student can participate in every explained process, events, and events in the educational process. It monitors events and processes that cannot be seen with us, that are difficult to imagine, in a virtualized computer model. Time is saved as a result of checking the knowledge acquired by students through virtual control. A student who could not master the lesson or to further strengthen his knowledge has the opportunity to independently use virtual training manuals.

The virtual laboratory is an integrated information environment that includes educational, methodological, practical, reference, control-teaching and control-test materials.

Virtual laboratory: it is used as an effective teaching tool, but it does not replace the teacher in the learning process and provides the learner with the freedom to choose the pace and trajectory of learning; combining a good textbook and computer capabilities, this is ensured by the ability to store a large amount of information, visualization, text, graphic, audio and video information; is a complex set of tasks in one or another field of science, which provides the student with virtual tools for the creation and formation of the conditions of the task, as well as means of solving it, and allows the teacher to control the actions of the students.

One of the goals of creating virtual laboratories is comprehensive, complete visualization of the learning process, one of the main tasks is to fully perceive and understand the essence of the learning process.

It is known that most of the modern experimental devices consist of rather complex, bulky and expensive complexes, which are somewhat complicated in terms of price, dimensions, and conditions of use, and therefore many HEIs are in the educational process. many laboratory works and experiments are not conducted. Therefore, taking into account the possibility of using a virtual laboratory and experimental devices, one of the ways to solve existing problems, we suggest using the following types of virtual technical laboratories:

- tools and equipment, virtual laboratories;
- technical virtual laboratories;
- cognitive virtual laboratories;
- creative virtual laboratories;
- research virtual laboratories are designed for conducting research and acquiring new knowledge.

The use of virtual laboratories in the teaching process, as a rule, significantly reduces the time of performing individual laboratories, which allows to expand the laboratory practice. In addition, virtual laboratories make it possible to carry out the most expensive, life-threatening, but necessary for training experiments, even in conditions where real laboratory equipment is insufficient.

We participated in the development of two types of educational programs at Tashkent State Technical University:

1. Linear training programs for simple subjects with a predetermined sequence of parts of the educational material, in which the sequence does not depend on the progress of the learner in the

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teaching process. It is convenient to use such simple teaching programs under the guidance of a teacher.

2. Branched training programs for relatively complex subjects, where the percentage of the learning material received depends on the achievements of the learner. In these programs, there are several answers in the test part of the problem or task, one of which is considered correct.

The main features of the educational programs are imageability, flexibility, interactivity, and intellectuality.

All these features are embodied in multimedia technology, which is gradually being introduced into education in our Republic today. That is why, today, the creation of multimedia electronic textbooks on subjects is an urgent issue for the development of the modern education system and the introduction of new information technologies into the educational process.

There are also many off-the-shelf software tools available today for creating multimedia software. Such tools include Actions, Authorwore, Flash, Media Tool, PowerPoint, Toolbook and others.

Multimedia software tools not only make it easier for the teacher to perform their functions, but also increase interest in the subject, speed up the learning process, and ensure good knowledge acquisition (Fig. 5).

The use of virtual classrooms does not negate training in real classrooms and full acquaintance with professional objects.

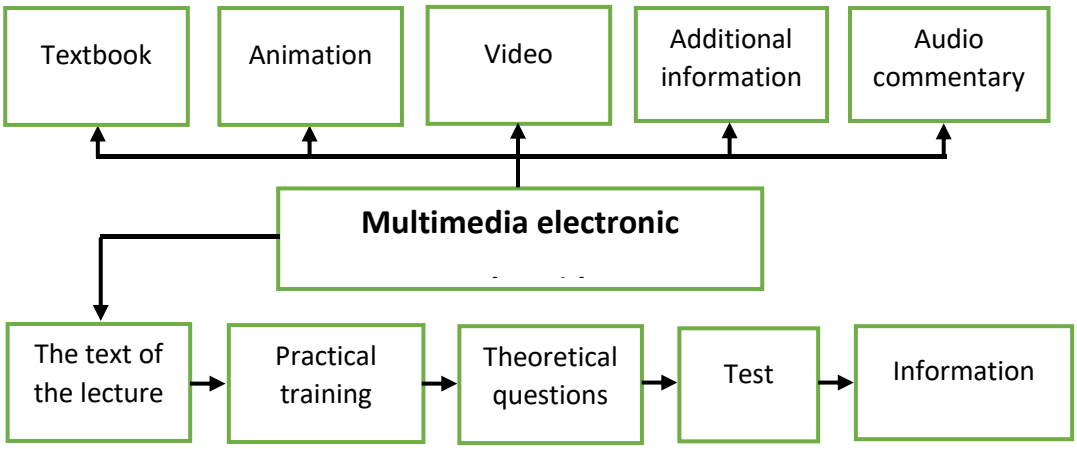

Figure 5. Overview of multimedia e-learning guide

In conclusion, it can be noted that the large-scale opportunities for multimedia educational programs, the organization of the educational process based on them, the rapid updating of educational materials based on the latest achievements of science, and similar advantages create a number of advantages. In the following years, a new term was formed in the field of ICT application in education - the concept of a virtual educational laboratory. From the point of view of professional education, the virtual educational laboratory is aimed at informing professional activities and facilitating the activities of teachers of professional education.

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