

## THEORETICAL AND PRACTICAL FUNDAMENTALS OF THE ELECTRONIC LITERATURE CREATION SYSTEM

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### ABSTRACT

In this article, electronic educational literature in the modern education system The theoretical and practical foundations of the electronic educational literature creation system are covered.

**Keywords:** electronic textbook, distance education, multimedia, graphics.

### INTRODUCTION

electronic educational literature is currently at a certain stage of development . Of course, there are objective reasons for this. The organization of the educational system is different in each period due to changes in the social system and ideological views. During social-economic, scientific-technical development , there were different pedagogical approaches to the process of achieving the goal of the educational system . Therefore , with the theoretical and practical improvement of the organization of the educational process, the creation of electronic educational literature began to take on a modern character. In addition , Decree No. PF-3080 "On further development of computerization and introduction of information and communication technologies " adopted on May 30, 2002 and Decree of the Cabinet of Ministers on June 6, 2002 " Computerization "Decree No. 200 on the further development and introduction of information and communication technologies " to form a national system of information, to introduce and use modern information technologies in all areas, to enjoy the world 's information resources e made it a task to improve. The main goal of the zero education system is to train mature, highly qualified, moral, enlightened, competitive personnel who can think independently. Today, we need to master the advanced technologies in the field of creating electronic educational literature more widely and deeply, and develop the software for their application in our own way .

The second phase of the implementation of the national personnel training program dedicated to improving the quality of education depends primarily on the development of information technologies and distance learning, as well as the creation of electronic educational literature. Based on the essence of the Law on Education and the National Personnel Training Program, the Cabinet of Ministers of the Republic of Uzbekistan "Development of computer and information technologies in 2001-2005 , access to Internet-international information systems" Based on the decision of May 23 on the measures to organize the development of the program for ensuring penetration of the department of application and development of the educational

process has been opened, and the department is engaged in the creation of electronic educational literature. The main tasks of the department are as follows:

Introduction of modern information technologies and distance education system into the educational process;

electronic textbooks, training manuals and lecture texts;

Providing practical assistance in organizing practice and laboratory classes through simulation and creating virtual stands;

and implementing various effective computer programs for the educational process, electronic textbooks and office work ;

Providing practical assistance in creating an electronic catalog and an electronic library of the educational institution's library;

Internet - establishing the use of international information systems in the educational process;

Creating a local system of the educational institution;

Creating a web page of the educational institution and enriching it with new information;

Organization and implementation of video conferences with higher educational institutions of our republic ;

Qualified programmers, designers and operators are serving in the department. As there are 4 categories of electronic textbooks , the main purpose of using them is as follows:

a new information - educational method, increasing the efficiency, quality and productivity of the educational process by using modern information and pedagogical, information and computer technologies ;

wide use of modern educational resources - electronic textbooks in the continuous education system , the organization of their libraries in a certain sense, the practical implementation of distance education methods and the global world el e introduction to ktron educational system.

Electronic textbooks should have the following forms ;

presentation of educational material using multimedia , i.e. visual , hypertext , sound, electronic board forms of information delivery ;

compilation of all training manuals in one place, including various educational literature - textbooks, dictionaries, sets of problems and practical - laboratory exercises ;

establishing an interactive system between the learner and the teacher ;

a certain part of the tasks of management and control of the teacher's educational process to modern computer training tools;

effective control of the level of knowledge acquisition and question-and-answer on the student's acceptance - advice explanation, information search ;

use of mathematical and simulation models of scientific data studied through computer visualization ;

introduction of new information and improvement of educational material ;

of creating educational materials ;

the student's independent learning activity;

possibilities of organizing the method of distance education in education ;

complex case together with traditional educational literature .

multimedia tools we mentioned above are of great importance in practice. Especially electronic is the main tool for creating educational literature. So what is multimedia? How and in what areas is it used? It is necessary for us to answer a wide range of questions .

"Multimedia is a rapidly developing modern information technology . Its distinctive features include :

- various types of information : integrates traditional (text, tables, decorations, etc.), original (speech, music, excerpts from video films, TV frames, animation, etc.) types into one software product.



Figure 1. Types of information used in multimedia .

Such integration uses various devices for recording and displaying information: microphones, audio systems, optical CDs, televisions , video recorders , video cameras , and electronic musical instruments . is performed under computer control;

- work at a certain time, unlike text and graphics, which are static in nature, audio and video signals are viewed only at a certain time interval. For processing and displaying video and audio information on a computer , the mobility of the central processor , the bandwidth of the data bus, operational ( efficient ) and video memory , large capacity external memory (mass memory), the volume and speed of exchange of computer input - output channels are required to be approximately doubled;

- a new level of interactive communication between a person and a computer, in which the user receives extensive and comprehensive information during the communication process, which allows to improve the conditions of education, work or recreation. [20 :- p. 366,304]

According to the order of the Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan dated December 28, 1998 No. 356 "On providing higher educational

institutions with a multimedia complex", education of students based on multimedia tools assigned the task of providing and retraining personnel. [6]

The concept of multimedia entered our lives in the early 90s . Many experts analyze this term in different ways.

" Multimedia is the delivery of educational materials to teachers based on the effects of audio , video, text, graphics and animation (movement of objects in space) based on the software and technical tools of informatics . b e is the appearance of a person incarnate. [20 :- p. 366,304]

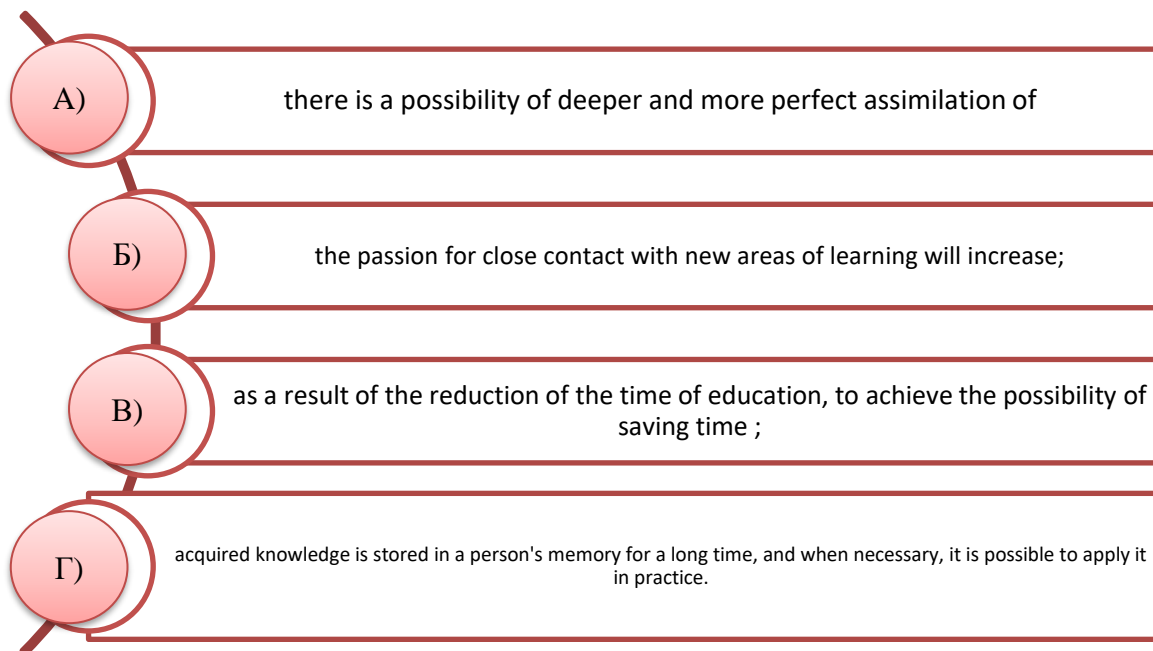
This method of teaching in developed countries is currently being applied in the field of education. In fact, every family ca n't have fun without multimedia tools . The gross turnover of multimedia tools in 1981 was 4 billion . If it was US dollars , in 1994 it was 16 billion. formed the US dollar. Nowadays, it is impossible to imagine every computer sold without multimedia tools . In the 70s, attempts to widen the use of computers in the field of education failed , first of all , due to their extremely low productivity. Practice shows that teaching students on the basis of multimedia tools is doubly effective and can save time. On the basis of multimedia tools , it is possible to save up to 30% of the time in learning , and the acquired knowledge is retained in the memory for a long time. If the students receive the given materials on the basis of viewing (video), the retention of information in memory increases by 25-30%. In addition, when training materials are presented in the form of audio, video and graphics, the retention of the materials increases by 75%. We were once again convinced of this in the process of learning foreign languages based on multimedia tools .

"Figure 2 below shows a fragment of a multimedia system developed by American specialists for learning English.



Picture 2 . A clip from the Multimedia system.

students based on multimedia tools has the following advantages:



3 : Advantages of teaching students based on multimedia tools

It should be mentioned that prestigious organizations such as the World Monetary Fund, the World Bank, and the European Union Commission have great experience in the retraining of personnel. We were once again convinced of this as a participant of seminars and conferences organized by these organizations . First of all, the use of modern computer technologies in the educational process is commendable ." [20 ;- p. 366,304. ]

However, there are some objective problems in the way of wide use of multimedia tools . The most important of these is the development of computer programs that guide the learning materials , laws , and other guidelines that students need . It is not possible to use multimedia elements in the developed computer programs and to produce CDs in our republic . These require a certain amount of funds to be raised upfront.

Extensive use of modern computer technology in the process of education and retraining of students will develop mature and highly qualified specialists in the future .

If we talk about the fields of application of multimedia tools . The use of multimedia in the fields of education and training (Computer Based Training - SBT) is intended for personal use and for setting up business activities . The scope of application of multimedia in these fields is increasing day by day. Because the knowledge that provides a high professional qualification is always changing . Today's rate of growth requires constant innovation , especially in the field of technology . Therefore, a company based on competition should be more flexible in its activities . This is the right path for both ordinary employees and leaders. A computer- based teaching system is needed , but a specialized group must be formed to produce such a system . To date, computer - assisted training has been used more in the manufacturing sector for employee training and development. Opel employees are promoting a new method of team training .

The first use of computers for teaching in the 1970s was very ineffective . Because the production quality of technical and software tools at that time was not very high. In addition, the programs were not very flexible.

Today, training programs are designed in such a way that the user can use different training options. That is, he determines the speed of teaching , the size of the material and its level of complexity during the mastering of the educational material .

Many studies have recognized the success of computer - based learning systems. It is difficult to make an objective comparison with the old traditional teaching methods , however, the emphasis on working with a variable interactive program on a multimedia basis has doubled Saving time for learning a specific material is an average of 30% compared to traditional educational methods , the acquired knowledge is stored in the memory for a long time.

Mark e ting experts already (before the advent of multimedia applications in the reading system ) found a strong correlation between reading style and recall of modified material in multiple experiments . proved that there is a connection. For example, only a quarter of the material heard remains in memory . If the student has the opportunity to absorb this material by viewing , the amount of material left in the memory increases by thirty percent. 50% of the material is retained in the memory if the material is learned through both sight and hearing if the student is involved in the learning process, for example, an interactive learning program such as a multimedia application if it is used, the utilization rate is 75%.

We would like to emphasize here that it is difficult to give even approximate numerical data , since different studies give different results in this regard . The different results of the experiment are not only due to incorrect conclusions of the experiment, but also depend on different parameters . That is, it is impossible to find two groups of people with the same ability to learn and remember . Therefore, please note that the information presented in this topic is average .

Taking into account the above-mentioned factors, large companies that allocate a certain amount of financial resources to training each year can save a lot of money. For example, DEC saved \$40 million in training and retraining costs by using computer technology .

This method of acquiring knowledge is caused by:

- deeper and better understanding of the studied material ;
- convince the student to come into contact with a new field of science;
- saving time due to a significant reduction in teaching time ;
- acquired knowledge remains in the memory for a long time and is quickly recalled when it is necessary to use it in practice .

According to the research of the Prognos Institute of Switzerland, which deals with the multimedia market , multimedia will be widely used in enterprises in the near future . It is true that the cost of hardware is decreasing, but the cost of implementing a training system using high - speed computing is increasing.

It usually takes 200-250 programmer hours to create one hour of instructional time of one training program. Despite improvements in the quality and availability of software development tools , the costs of curriculum development continue to rise. Because the requirements for the program interface are increasing, it is necessary to include new and new multimedia elements in the programs .

Of course, achieving success in a certain sense also depends on the goal. If we proceed from the renewal of practical activity methods, the method of teaching using the interactive program of multimedia is waiting for great victories in the future .

Another disadvantage is that the order to create a training system using a computerized system is associated with the disclosure of information and production secrets of a third party. It should not be forgotten that such multimedia applications remain in the interest of the consumer market, and this interest is associated with a constant decrease in the price of the necessary devices . Lotus, for example, has training CDs with multimedia content .

Multimedia systems are currently used in the field of education and vocational training, in publishing activities (e - books), for computerization of business ( advertising , customer service), in information centers (library, ice y) and so on are successfully used.

Computer teaching multimedia systems, which allow one teacher to increase the number of students, occupy a special place in deepening knowledge , shortening the duration of teaching and allow students to connect directly to a topic of interest compared to videotape courses, where information is presented sequentially . In addition, these systems are equipped with effective means of evaluating and controlling the processes of acquiring knowledge and acquiring skills.

E-books have become possible thanks to the availability of inexpensive mass storage devices in the form of information . The term electronic book refers to a new type of book in which the pages are displayed on a display screen . In other words, this information interactive system provides page-by-page organized access to information for the user (reader).

A CD-ROM with a capacity of 650 Mb can record one of the following volumes of information :

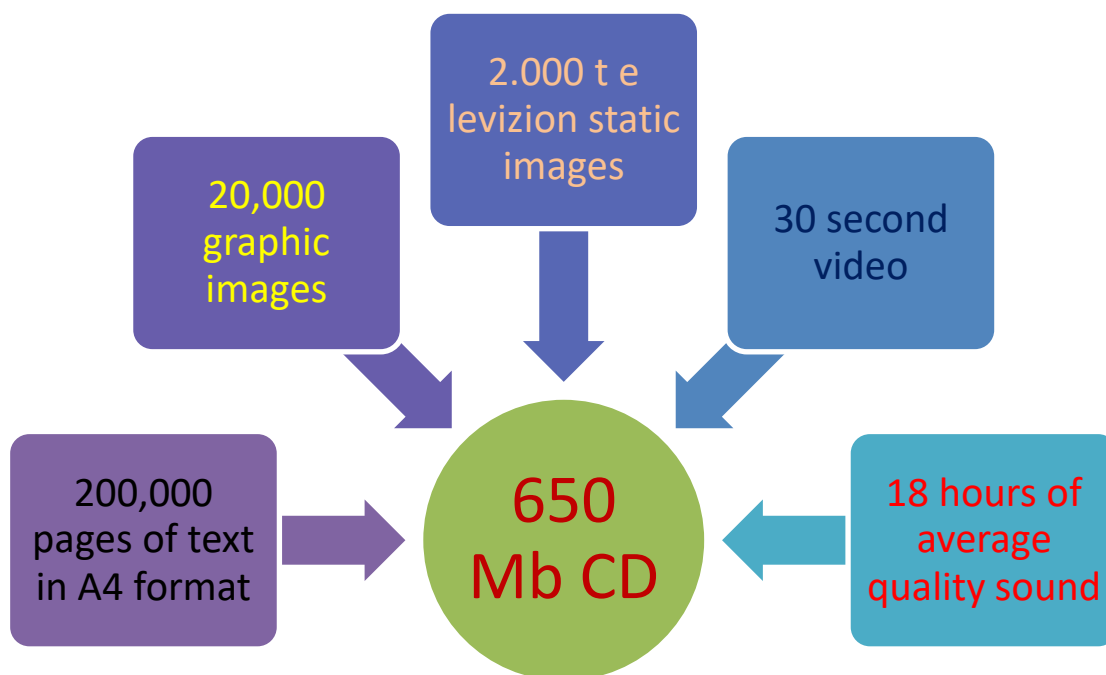


Figure 4: 650 Mb CD capacity.

The information on electronic book pages can be of three types : aesthetic ( denoting the "nice" appearance of the book and enhancing its effect on the reader), information (revealing the

content of the book) and control (icon, material presented in the form of icons, dialog boxes, dynamic menus , etc. ).

Electronic books can be divided into four classes: public information, teacher and examiner.

The first type of electronic books contains a huge amount of information on a specific topic. Crolier Encyclopedia , Comptons Multimedia Encyclopedia, Microsoft Bookself and other such popular products can serve as examples .

The second type of electronic book is not the same as the first, but the information contained in these books is not so extensive and has a purpose-oriented nature. For example, Oxford Textbook of Medicine on Compact Disk, Elsevies Active Library on Concussion , etc.

A third type of e - books is more common in practice and can be used in education, in kindergartens (for example, Brotherbirds Living Book) and in continuing education courses. Additionally, these books may contain works of fiction (eg Herman Melville's Moby Dick, Gustave Flaubert's Madame Bovary, Michael Crichton's Jurassic Park, Adam Hitchhiker's Guide to the Galaxy).

Three important components in different books ; There is a question bank, a test and answer module , and an expert system that uses student responses for analysis and evaluation . For this type of multimedia systems , a plate from the English Plantinum, shown in Figure 3, can be cited .

The above classification of electronic books is not the only one. For example: the type of information stored in electronic books, text books, static pictures, printed books , "talking" books with moving pictures, multimedia - books , hyper dia - books, int e l l e ctual e l e Classification according to ktron books , polyme dia — books, teleme dia — books and cyberne tic books was proposed.

"Apparently, only some of the mentioned concepts need further explanation.

Multimedia - books are written on one carrier (INFORMATION or magnetic disk) and organized in one line (correctly), that is, text, audio, static images and video are used, where the necessary information is presented consistently . Polymedia-books, unlike the previous ones, use a combination of several different carriers (CD-ROM, magnetic disk, paper, etc.) to present information to the reader. Although hypermedia - books, multimedia - has a lot in common with books , it differs in the unique organization of its information , for example, the reader uses the "mouse" to move the main material to one side . yib, can ask for corrections and comments on the system of terms and concepts according to the context and the method used . The prospect of the last two books is undoubtedly interesting .

Telemedia uses tele - communication capabilities to support an interactive system that distributes books for distance learning .

Cybernetic books also contain mathematical modeling tools and thus provide the reader with the opportunity to comprehensively study and research the described events and objects .



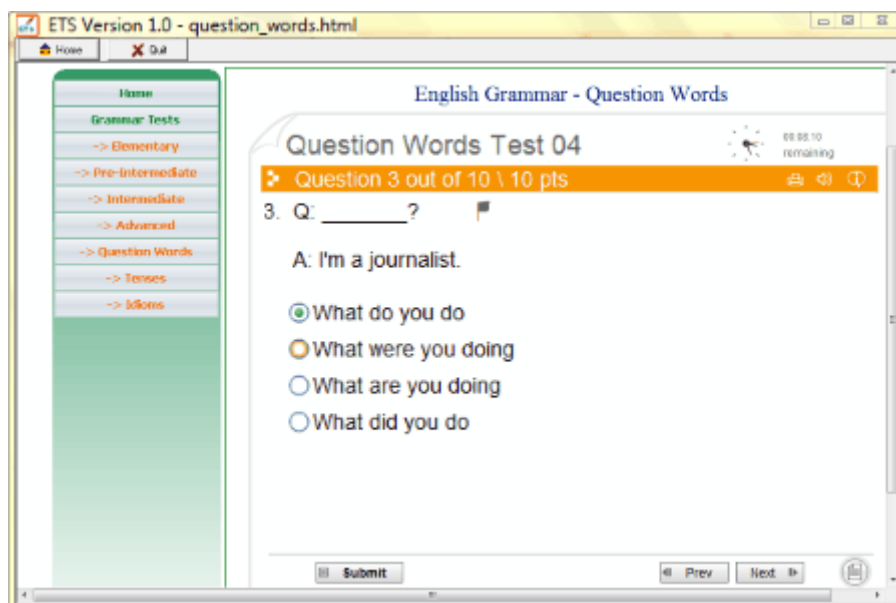


Figure 3. An example of exam-taking systems

such a large number of practical multimedia systems, the Learning English in Multimedia teacher system can be distinguished. It is designed for the purposes of teaching English for beginners and was developed by IPAPFIRI (Italy). A screenshot from the English Platinum multimedia system, which the authors use in their practice, is shown in Figure 4 below. [20 ; p. 366,304]

on the principle of modules, each module corresponds to one or another life situation. Relevant words, concepts, sentences and sentences are introduced for the situations under consideration and the corresponding actions. In this way, listeners fill up their vocabulary, learn the rules of grammar and syntax.

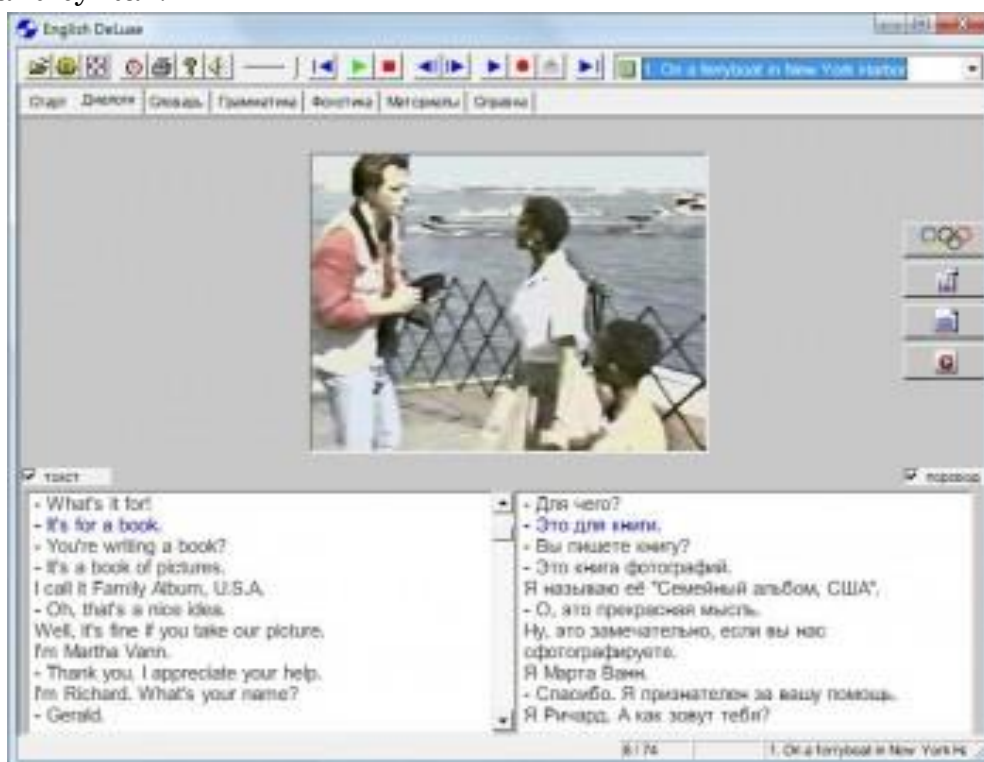


Figure 4. A clip from the English Platinum multimedia system

Computer - aided instruction is complemented by the use of videotapes and audiotapes for listening and pronunciation control , as well as two study guides with grammar rules . Such a method of self-control increases the effectiveness of the teaching process." [20 :- p. 366,304]

In the conditions of distance education, traditional forms of laboratory work are supplemented with virtual laboratories. Virtual laboratory work uses the technology of mathematical modeling to simulate physical experiments , in order to achieve effective interactive interaction of the user with the modeling environment , the software and hardware of visual , computer graphics and animation . attracts many means .

As part of the concept of virtual laboratory, a technical concept called "virtual instrument" is taken, it is a set of hardware and software tools added to the computer in such a way that this set allows the user to interact with the computer in the way of a simple electronic device specially designed for him. As a result of working with the virtual instrument through the graphical interface, the user enters the usual panel imitating the real control panel of the desired instrument on the monitor screen, and has the opportunity to work on simulated models of real signals and the results of pre-obtained real experiments stored in files of relevant data.

Designer of virtual laboratory work is a universal software system aimed at managing tools for measuring, collecting, displaying and processing experimental data. In general, this constructor can be viewed as an integrated environment for creating, configuring and executing hardware software complexes for collecting, processing and displaying measured information, measuring, testing and control system programs.

The appearance of virtual laboratory work created in this environment will mainly consist of three parts:

- front panel ;
- block diagram;
- connector - icon.

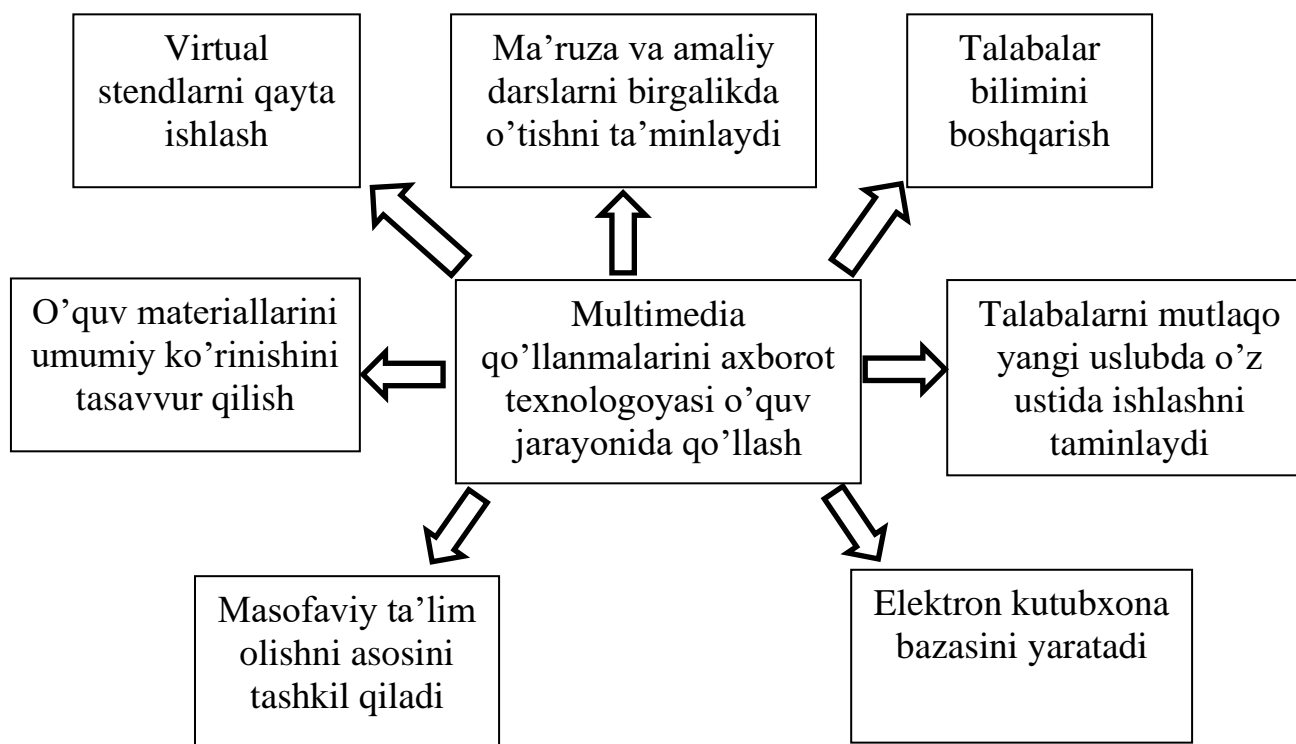
The front panel is an interactive graphical user interface that simulates the front view of a physical device. It consists of graphical representations of various button, knob, digital and logic controls to conveniently display the results of the experiment on the computer screen . Using a "mouse", the operator can simulate the movements of the control bodies of the physical device in the virtual laboratory.

A block diagram is a program in the form of a graphic, in which an algorithm for performing a task is given. A virtual instrument takes instructions from a block diagram and executes them in a graphical programming language.

A connector - icon - is a graphic symbol of a virtual instrument, which indicates the conventional symbol of this instrument in the general hierarchy of virtual instruments and defines the scheme of the input and output terminals of the virtual instrument.

The use of multimedia guides in the educational process of information technology can be represented in the following diagram 1:

1-sxema. Multimedia qo'llanmalarini axborot texnologiyasi o'quv jarayonida qo'llanishi



It is necessary to pay attention to the following when creating electronic literature in a multimedia environment, embodying the above points:

- compatibility of the topics and materials of the existing specified subject with pre-formed and approved sample and work programs;
- that the materials of each topic are covered in a sufficient and complete way, and are filled with appropriate graphic images, animations, tables;
- in the process of mastering the materials of each topic or section, control questions will be asked to control one's knowledge, at the same time there will be test questions for each chapter and the answers will be included. If a positive answer is obtained in the course of tests, arrange for permission to move to the next chapter, otherwise, ensure that they cannot continue reading the book;
- highlighting key key phrases in a given topic or section and setting up pointers (hyperlinks) to get more information on them when needed.
- several technologies for creating electronic textbooks can be developed and demonstrated.

the simplest and most convenient options can be as follows:

- 1) Entering and editing knowledge and subject materials on the selected subject in the Microsoft Word text editor.
- 2) Transfer complex graphic images and drawings to computer memory using a scanner.
- 3) Placing graphics, video images and various drawings on relevant pages.

Organization of topics of each subject in the form of separate files and pages.

- 5) Create a home page and set up links (hyperlinks) to refer to topics through the table of contents.
- 6) Create a test program in one of the object-oriented, visual programming languages and link it to the main page.
- 7) Enter test questions and answers and save it in a separate file.
- 8) Use and review of the prepared e - learning textbook .

As we know, the Internet network is mainly used in the establishment of a remote system. For this purpose, e -learning materials prepared should be composed of files in HTML structure . Currently, programs that create WEB pages without knowing the HTML language have been developed. For example, we can take the Front Page program for this. Macromedia Flash, 3D max programs for creating complex animations.

### REFERENCES

1. A.M. Abduvokhidov., B.Kh. Pozilov and others. Modern information technologies. — Tashkent. 2001 year. 54 pages
2. A.M. Abduvokhidov, S.A. Novosardova. Modern information technology and economics. - Tashkent. 2001 90 pages
3. Techniques and Technology of distance education. International Scientific - Practical Conference. Collection of lectures. Tashkent, 2002. 126,128,129,130,139 - pages.
4. Creation of electronic educational literature based on Information and Communication Technologies: experience, problems and prospects. Collection of Lectures of the Republican Scientific and Practical Conference on the topic, Tashkent, 2004. 27,51,52,63,54,61. Pages.
5. V.G. Potemkin. Sistema injenernix i nauchnix raschetov Matlab 5.x: —Tom 1,2. Moscow: "Dialogmyfi", 1999. 366,304 pages.