METHODS OF USING CREATIVE PEDAGOGICAL TECHNOLOGIES IN TEACHING VOCATIONAL EDUCATION SCIENCES

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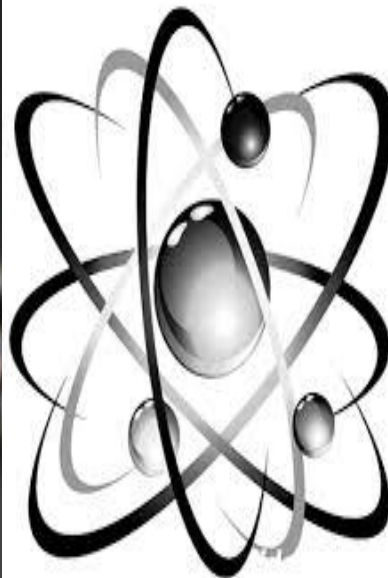
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(Monograph)

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The monograph mainly focuses on the independent study of students and the creation of a unified information-educational environment in the management of the educational system in technical schools in the field of ICT, and the provision of lessons to students using information and telecommunication technologies, as well as the timely delivery of knowledge to their owners. was taken as the main goal of the graduation work, and was dedicated to the creation of methods of using creative pedagogical technologies in the teaching of vocational education.

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INTRODUCTION

Today, information technologies and software tools include all spheres of life. Modern interactive methods are being used in schools and technical institutes, as well as the use of software in the teaching of specific subjects.

The President paid special attention to the prospects for the development of the education system and explained in detail its purpose and ways of implementation. It should be emphasized that it is a methodological basis based on the instructions of our president, and it is of great importance in determining the actual issues of scientific-practical and methodological research conducted in the educational system.

The responsible and complex issues put before the experts of the education system by our state are implemented by solving the most urgent issues at a high level and widely introducing them into practice.

Special attention is paid to the improvement of the electronic government system in the action strategy on the five priority areas of development of the Republic of Uzbekistan in 2017-2021 (07.02.2017.PF-4947).

On October 8, 2019, the signing of the decree of the President of the Republic of Uzbekistan No. PF-5847 "On the approval of the concept of the development of the higher education system of the Republic of Uzbekistan until 2030" accelerated the reforms in the higher education system, it was good quality implementation. This document was based on tasks such as the development of integration of science, education and production in order to accelerate intellectual development, train competitive personnel, effectively organize scientific and innovative activities, and strengthen international cooperation. As President Sh.Mirziyoyev said, the development of specialists who can compete with experts in developed countries, meet the requirements of large companies for employees, become customers of world scientific research institutes, and work wholeheartedly in the development of the economic, social, and educational sectors of our country. Sure

CHAPTER I.
CONDITIONS FOR THE INTRODUCTION OF CREATIVE PEDAGOGICAL AND INFORMATION TECHNOLOGIES IN THE VOCATIONAL EDUCATION SYSTEM.

1.1 The role of pedagogical and information technologies in the educational process

The modern education system provides the use of various innovative technologies. The development of new information technologies in education includes software tools that implement methodological ideas related to semi-automatic or automatic access to educational information, verification of the accuracy of obtained results, assessment of initial and continuing training, etc. encourages application development.

Audiovisual information provided by technical means allows students to use additional psychological effects compared to standard, classic classes (type size, image size, color scheme, etc.). They make it easier to remember and understand the studied material. Such programs that help in the study of sciences:

- ➢ Introductory lecture - an educational video or lecture given by a well-known expert in a particular field of knowledge.
- ➢ Modular lecture - a lecture delivered by a highly qualified science teacher via satellite television.
- ➢ A modular slide-lecture is a set of slides (from 100 to 200 per lecture) that provide a textual and graphical presentation of the lecture, together with an audio presentation by the teacher.

The use of modern technologies that allow solving the "fazal" problem is to introduce students to the "natural objects" they create or systems that use the theoretical principles they have just learned. Thus, television and video conferencing greatly contribute to the study of various subjects. Today, information technologies are entering all aspects of life. Education cannot stand aside, and information technology must take its rightful place in the educational process.

New technologies cannot replace the teacher, the textbook or the classroom, they help to focus the knowledge of the students, creating new opportunities for the development of the entire educational system. Not developing technologies for technology's sake, but using them to maintain and develop students' interest in knowledge and learning is an urgent task of modern education.

Modern information technologies provide students with the opportunity to use non-traditional information sources, increase the efficiency of independent work, create completely new opportunities for creativity, acquisition and strengthening of various professional skills. [6].

Information technology of education allows the teacher to achieve didactic goals to apply specific types of educational work and any combination of them, i.e. design of educational environment, allows to implement radically new forms and methods of teaching. The teacher will have additional opportunities to support and direct the development of the student's personality, creative research and organization of their joint activities, development and selection of the best options for educational programs. It opens up the opportunity to abandon the regular activities of the teacher, typical of traditional teaching, to give him forms of intellectual work. Information technology frees the teacher from providing the audience with a significant part of the educational material and routine operations related to the development of skills and abilities.

Telecommunication technologies have opened completely new opportunities for students and teachers. Experts' observations showed that working on computer networks actualizes students' need to be a member of a social community. In recent years, the use of computers in special educational institutions in Russia has been expanding. Methods aimed at the development of children, taking into account their age and individual abilities, and organizing their communication are being developed. Particular attention is paid to the use of modern information technologies in solving the problems of integrating children with disabilities into the life of modern society. For this group of children, information technology is often the only means of obtaining a full-fledged education, a competitive

profession and fair communication.

1.2. Use of information technology in the vocational education system

The last decades were characterized by the rapid development of informatization, the emergence of new generation information technologies that are actively entering all aspects of life. Today, the higher education system cannot be imagined without information technologies. In the modern conditions of development, new opportunities are opening up for higher education to meet the educational needs of both students and teachers. [1].

In connection with the increasing trend of the share and importance of information technologies in solving scientific research, methodological and pedagogical problems, there is a problem of improving teaching methods, creating information infrastructure, information content, as well as ensuring access for all. to the information resources of the participants of the educational process. First of all, university teachers are interested in finding ways to create optimal conditions for using information resources in the educational process. [2].

When organizing the educational process, it should be taken into account that modern first-year students, as a rule, are confident users, have extensive experience in working in a virtual environment, are familiar with the global network and must quickly find what they need. information. During the period of studying at school, the virtual information environment is gradually becoming the dominant environment of their "habitation". Young people who have the skills to work with the information environment quickly prefer methods of acquiring knowledge in academic subjects electronically. In addition, many of them consider the traditional methods of "teacher-student" in the classroom and "student-notebook" at home to be outdated, especially if the book is published "on paper" in a printing house. lsa. . A new generation of students came to study at universities. Of course, the innovation does not aim to completely replace the teacher. Face-to-face interaction in the classroom is still the most important form of learning [3].

Xuddi shu vaqt oralig'ida o'zlashtirilishi kerak bo'lgan fanlar bo'yicha o'quv problems related to increasing the volume of data remain relevant. One of the ways to solve these problems can be the use of multimedia in the educational process or the so-called multimedia learning.

Multimedia learning theory includes several principles of learning with or through multimedia technologies, namely that optimal learning occurs only when verbal and visual material is presented synchronously. Experience shows that visualization is a universal way, but it is not as simple as it seems. All this depends on the availability of appropriate information resources, as well as the skills of working with them, which are necessary for effective work of teachers and students. Studies show that using a single, but well-executed fragment in educational materials is more effective than using poorly executed multimedia programs.

Informatization of education implies the availability and education of specialists with high information culture, analytical skills and humanistic value system.

The problem of forming the information culture of a person is still not sufficiently developed. Before the spread of personal computers and the advent of the Internet, the introduction of the development of information culture among representatives of the middle and older generations who received general and professional education began. Today, it is important to create an "educational environment" that ensures the formation of both individual components of information culture and information culture as a whole. Informatization currently covers all the main components of the educational environment.

It is impossible to train a qualified specialist in any field without using modern information and educational technologies. At the same time, it is important to arm the future specialist with knowledge of the modern information environment and educational software, to ensure the formation of his readiness to use various information technologies in professional activities.

Information and communication technologies mean technical, software, systems and devices working on the basis of computer technologies, modern tools and systems of information exchange that ensure data collection, storage, processing, transmission and exploitation. information management.

The use of computer technologies does not violate the deadlines of education, but allows for a deeper study of this or that theoretical issue. At the same time, students will have the opportunity to study the studied processes and phenomena in more detail, to study important theoretical issues that cannot be studied without interactive models. At the same time, the teacher can focus the attention of the audience on some difficult moments.

The highest effectiveness of training is achieved if:

➢ educational information cannot be studied in real conditions;

➢ visualization of objects and events is more complete than traditional mass media;

➢ it is possible to change the time scales of events, stop and repeat the movement of the computer model;

➢ tools for solving and analyzing interactive tasks using analytical and graphical methods have been developed;

➢ electronic means of testing the results of educational activities were created.

Educational electronic publications must meet traditional didactic requirements, for example, scientific content, ease of use, appearance, consistency and coherence of learning, solidity of knowledge acquisition, unity of educational, developmental and educational functions of education.

Currently, the main aspects that are being focused on in the development of multimedia courses and telecommunications tools are to increase the level of visualization, to provide interactivity, the presence of virtual workshops, computer laboratories, as well as appropriate instructions for their use.

Thus, the use of information technology can be offered in different ways:

❖ for visual display, training and testing purposes;

❖ as a computer design environment;

❖ for ready-made computer laboratory complexes in experiments, measuring physical quantities, performing laboratory work;

❖ as computer aided independent design studies;

❖ for telecommunications during training.

The specific positive aspects of computer technology that students are familiar with are universality, visibility, accessibility, and variability.

Thus, the use of information and communication technologies in the process of professional training of future specialists helps to develop students' creative abilities, professional skills and abilities, stimulates mental activity and activates cognitive interest in the studied material, professionally relevant education understanding of information, an active position in the formation of professional competencies. , mastering new information technologies, gaining practical experience.

One of the ways to effectively introduce information technologies into the educational process in higher education institutions is the creation and use of new generation educational tools and didactic materials - electronic educational tools.

Research shows that the task of creating modern electronic textbooks is to create an information computer product that contains maximum useful information in a usable form, convenient for use by the teacher both in the lesson and in preparation for it. should consist of creation. and improves learning efficiency and visibility.

Electronic textbooks are fundamentally different from the existing ones, because they correspond to the educational process and its participants: the teacher and the student, the goals, content and structure of the educational subject, and the nature of the educational activity. . Certain elements of the textbook technologically support modern teaching methods (project method, student-oriented educational technology, cooperative teaching method, game technology, etc.)

The educational process organized on the basis of the use of this type of electronic educational complex is aimed at: improving the quality of mastering both theoretical knowledge and practical skills; provide the possibility of modeling technical and organizational conditions for the implementation of various operations and works; to ensure the formation of different types of skills for the formation of reasonable methods of educational activity of students: technical and organizational, mental, emotional-motor.

The creation of electronic teaching-methodical complexes of educational subjects is not only today's task, but also yesterday's. Professor B.V. Palchevsky: "At the same time, the delay in the development and implementation of the next radical innovation is fraught with stagnation of the entire educational system. Therefore, the main innovations have a special social value, they need more experience than others. They should be the object of research» [5].

The electronic teaching-methodological complex (EUMK) should include the following elements in addition to the set of teaching-methodical documents, teaching and control tools developed in the higher school of the Russian Federation for each subject [5]:

   - science learning technology - for the teacher;

   - synopsis of the subject unit - for the student;

   - means of education.

All electronic documents in the EUMC are multimedia, they always contain elements of interactivity, this is not a simple translation of printed materials into an electronic document in doc or pdf format.

Students can use it for independent study of some subjects of academic subjects, learn to solve educational and practical problems, test their knowledge in the process of completing test tasks, and apply practical knowledge on this subject in the surrounding reality. can get At the same time, progress is constantly monitored, individual tasks can be completed and achievement levels can be set.

In the electronic set, teachers and students are provided with various didactic information materials, that is, methodological developments and lecture texts that

can be used in preparing for classes on this topic; videos where the teacher can explain the new learning material; In addition, there are methodological recommendations on the use of models in the educational process, didactic materials are offered with electronic models and illustrations that help to consider the studied topic from different angles, help to focus the attention of students on the most important terms, features, definitions.

Educational complexes also contain materials that introduce the teacher to projective technology, and can be used to organize students' independent work and organize their scientific and research work.

In the development of electronic educational complexes, existing and well-known programs are used: Excel, PowerPoint, Word, Windows Media Player, Delphi. Complexes are created as a collection of web pages that can be viewed using the Internet Explorer browser. The use of information products prepared with the help of an instrumental environment radically changes the roles: the teacher ceases to be a source of information and acts as a tutor who accompanies the student in the information field and encourages him to active learning activities.

Such educational information complexes are flexible, i.e. the teacher can use its elements at will, modeling new classes and forms of work taking into account the psychological characteristics of students [6] and software characteristics [7].

Electronic educational complexes can be used to organize independent work of students during the educational process (studying abstracts, watching videos, doing practical work); when shown by the teacher in the lesson (showing videos, interactive models and animations), including the use of a multimedia projector on a screen or an interactive whiteboard.

Electronic educational complexes can be used for conducting virtual laboratory work, independent practical work of students (solving examples from the database of questions and assignments); for electronic certification of students (test). Elements of electronic educational complexes are suitable for preparing the teacher for a lesson or test, for students to perform creative work under the guidance of the teacher, as well as for developing test materials and simulators

independently.

Thus, the electronic teaching-methodical complex (EUMK) provides the continuity and completeness of the didactic cycle of the educational process and contains organized and systematized theoretical, practical, control materials built on the principles of interactivity. is a software multimedia product. , openness of information, remoteness and formality. knowledge assessment procedures.

1.3 Use of creative pedagogical technologies in vocational technical schools

Today, the theoretical and practical problems of training skilled workers and specialists in primary and secondary vocational education have not been sufficiently studied. As an educational institution of secondary vocational education, Technikum implements multi-level, multifunctional, various programs of vocational education. It is an important factor in improving the quality of training future personnel. lib is to quickly and systematically update its content.

The essence of the concepts of "Creativity" and "Creative pedagogy". Not so long ago, the concept of "creative pedagogy" began to be used in modern pedagogy. However, the need to find innovative and creative approaches to the teaching process ensured the formation of "Creative pedagogy" as an independent subject among pedagogical disciplines. The basis of this subject is the history of pedagogy, general and professional pedagogy, and methodological ideas of such disciplines as psychology, teaching methodology of special subjects, educational technology, and professional ethics. The general principles of the science of "creative pedagogy" serve to create the necessary conditions for the professional development of specialists, including future specialists. The essence of pedagogical technologies, as well as the emergence of opportunities for personal development.

"Creative pedagogy" must be able to guarantee the following two conditions:

1) attracting the attention of students who have low mastery of academic subjects and consider them boring to learn the basics of science by teachers;

2) to provide opportunities for teachers to use them effectively in the classroom by recommending strategies and tools that serve to stimulate creative thinking and

creative activity results in students.

The successful application of multidisciplinary pedagogical innovations requires an understanding of the fundamentals and principles of technology-integrated construction and knowledge of competent implementation, modern features of the technology of the educational process, and normative requirements for its effective use.

Must be a specialist with a secondary vocational education, a general level of culture, responsibility, literacy, discipline, and professional skills necessary to ensure the competitiveness of the goods and services produced. self-determination, competence. For implementation, these requirements require the construction of a theory of pedagogical technology capable of optimizing the personal and professional development of modern college students. Equally important is the study of efficiency. Analysis of the content, goals and values of a modern professional education in a college environment was carried out by us on the basis of leading pedagogical concepts and approaches. Cause-and-effect relationships are based between the level of personal and professional development of students, their professional direction and motivation; The main professional level of competencies, as well as the organization of education that develops the personality of college systems.

It is adapted to the structural components of the pedagogical technology, taking into account the modern requirements for the educational process of the college. They are defined based on the logic of subordination of its levels: from conceptual to grounding pedagogical technology in college - before choosing diagnostic tools, learning models and selection criteria for the current situation of students. optimal model for specific conditions of the educational process. The educational system of a modern technical school performs the following functions:

culturological (transmission of culture, inclusion of a person in the cultural space); socialization (relationships of the formation of the young generation, value orientations, life ideals prevail in society);

developing personality (the direction of the pedagogical process is the

unique personality of each student, the natural development of his intellectual potential).

The scientific conditions for the development of the theory of the personal development system of the technical school education system were determined, as a result of which the main tasks, leading goals and tasks of the modern technical school education system were determined.

The development of vocational education, progress in its specific areas can be carried out by replacing outdated and ineffective training with new and more effective training materials for these conditions.

Pedagogical technology has a special place in this. When choosing pedagogical technologies, it is necessary to analyze them depending on the degree of satisfaction of the following requirements:

compliance with the concept and the realities and possibilities of the educational institution of technology;

sufficient consistency of technologies and systematic compatibility with the existing pedagogic process;

management of technology, availability of diagnostic tools for its maintenance; Evaluating the effectiveness of new technology compared to existing results [9].

The main component necessary for the organization of a new technological process is its development mechanism. As such a mechanism, we can recommend V.M.'s "Design Technology". Monaksova [8]. His goals:

- ❖ study integrated technology design (methodological systems).;
- ❖ setting educational goals to create the most adequate pedagogical process;
- ❖ select and create a diagnostic system that allows teachers to meaningfully interpret the results;
- ❖ development of preventive difficulties and rational corrective work system students;
- ❖ creation of technological dynamics of general pedagogical skill

development;

The selection of technologies involves the disclosure of their main features, allowing further reproduction in the educational process.

Despite the recognition of the theoretical and practical importance of development, it is very difficult to master technological approaches and successfully implement them into a real pedagogical process. This is mainly due to the conservatism characteristic of pedagogical systems, commitment to traditional, but not always effective, methods of organizing the educational process. In addition, the concept of "technology" is still vague. misunderstanding of its important features in the pedagogical process, methods, tools, conditions of use. Some of the author's developments, when they are put into mass practice, have low efficiency, which leads to the "rejection" of some innovations [7].

Often there are violations at the mass pedagogical level in the course of their implementation of a number of technologies in the practice at the level of advanced pedagogical experience. Often, pedagogically, there is no necessary level of competence in a certain field, which leads to serious mistakes in the implementation of another technology [3].

These factors to a certain extent explain the existence of disagreements in the understanding of the nature of pedagogical technology and its most characteristic features. Modern foreign and domestic scientists and pedagogues-practitioners reflect different opinions.

Looking at the problems of pedagogical technologies. In order to overcome the narrow interpretation of the goals of pedagogical technologies, a more detailed understanding of the terminological diversity is needed.

The semantic content of the concepts "technology", "educational technology","Pedagogical technology" and "educational technology".

Basically, that is. it is recommended to use the concept of "technology" and the new - "technological" approach on the basis of the system. analysis and design of pedagogical processes. Technology is from the Greek words techno (art, craft, science) and logos (concept, doctrine). With the help of technology, intellectual

information is translated into practical solutions. Technology is both a method of activity and how a person participates in activity [12].

In education, modern technologies are considered as a tool through which a new educational paradigm can be implemented. Technology is a procedural category. Therefore, on the one hand, it defines the content and method of activity, and on the other hand, it is the means, tools, mechanisms and other material and technical means, methods and forms related to the system that carry out and control this activity.

The essence of technology is to find such methods that activate the technological process and allow to achieve the desired results at the lowest cost. In general, pedagogical technology can be expressed in three aspects:

1) scientific (pedagogical technology is a part of pedagogical science that studies and develops goals;

2) content and methods of teaching and designing pedagogical processes);

3) procedural-descriptive (description (algorithm) of the process, goals, content, methods and means of achieving the set planned results training); procedurally effective (implementation of technological (pedagogical) process, performance of all personal, instrumental functions) and methodical pedagogical tools).

Pedagogical technology also serves as a learning science. The most reasonable methods of education and methods used in learning, as a system of principles and rules, and as a real process of learning. teachings. Based on this, the concept of "pedagogical technology" in education is used in three hierarchically subordinate levels of practice.

The first level is general pedagogical (general didactic). General pedagogical technology describes the overall educational process in a certain region, educational institution, at a certain level of education. Here, pedagogical technology is synonymous with the pedagogical system: it includes a set of goals, content, tools and methods of teaching, algorithm of activity of subjects and

objects of processing.

In addition, there is a certain methodological (thematic) level. Special-subject pedagogical technology is used in the sense of "special methodology".

These are a set of methods and tools for the implementation of a certain content of education and training within a subject, class, teacher (methodology of teaching subjects, methods of compensatory education, working methods of a teacher, educator).

The third is the local (modular) level. Local technology is the technology of separate parts of education, the process of solving certain didactic and educational tasks (technology is some types of activity, the formation of concepts, the education of the individual, personal qualities, the technology of the lesson, the acquisition of new knowledge, the technology of repeating and controlling the material, independent work technology, etc.).

There are also technological microstructures: techniques, joints, elements, etc.. Located in a logical technological chain, they form. Comprehensive pedagogical technology (technological process).

Pedagogical technology is called a complex consisting of some. Planned learning outcomes, tools for diagnosing the current state of trainees, a set of learning models, as well as criteria for choosing the optimal models for specific conditions.

As a component of pedagogical technology, the teaching model includes: methods and forms related to didactics, as well as pedagogical techniques, i.e. tools and techniques. They are filled with personal characteristics teachers (intuition, behavior, facial expressions, gestures, attitudes, etc.).

A component of pedagogical technology is educational technology as a procedural part of the didactic system. Its structure includes the following:

- ❖ conceptual framework;
- ❖ content part (purpose, content of education);
- ❖ procedural part (organization of the educational process, educational methods and forms, student activity, teacher's activity - educational

management process, educational process diagnostics) [11].

Thus, in the concept of "educational technology" it is necessary to distinguish the set of information necessary for the implementation of a certain educational process, and the educational process itself, its organization, structure and supply. Selection of educational technologies that provide a person-oriented direction of the appropriate educational process.

The advantages of these technologies are not only to strengthen the role and ratio of independent work of students, also the focus of these technologies is on the development of the creative potential of a person, individualization and differentiation of the educational process, effective self-control and self-assessment of educational results..

Educational technology is really a description of the learning process and a guide to the achievement of learning objectives. Whatever technology is chosen, it should be based on the following principles:

- confidence in the professional skills of teachers and teachers;
- compliance with physiological and hygienic standards of student work;
- preparing students for education at any stage of the educational process;

Teaching technology considers two main stages in the teacher's professional activity: the design stage and the project implementation stage of the educational process. The stage of designing the training process is the so-called technological map aimed at the development of technological recipes and design procedures - a kind of passport for the future training process. In the technological map, it should be integrated and concise. The main parameters of the educational process that ensure success are listed in the study:

- goal setting;
- content;
- methodology;
- self-dosing work;

       - diagnostics;

- correction.

Analysis of the professional direction of education and training, around which pedagogic system should be built, the main object emphasizes the personality model of the future specialist, divided according to the main objectives of each stage of training. In the initial, adaptation stage, the direction of the main educational process reflects the tasks of general familiarization with the future labor activity and its processes, as well as the acquisition of initial professional knowledge and skills surrounding the process of forming the future professional personality.

At the main stage, the task of mastering professional activity at the level of knowledge and skills of the mastered types of work is set.

Also, attitude to production activities. At the last stage, the basic training of specialists in acquiring professional skills is completed.

Teaching technology includes the systematic management of this process, which includes two interrelated processes: organization of student activity and control of this activity.

The presence of feedback in the implementation of educational technologies is their main feature. Any educational technology should be mobile, that is, mobile, able to change quickly and adapt to the requirements of the modern educational process. If the monitoring of the educational process is carried out in accordance with certain rules, then the developed technology can be said to be about targeted management of education, which is carried out according to an equally precise algorithm. Then the control algorithm to maintain the system of correction of learning and cognitive activity sufficient stability in achieving the set learning goals. In practice, education, various methods of current and final quality control known knowledge, that is. pedagogical dimensions. The most common methods of oral inquiry and written tests. For oral inquiry, various questionnaires (tickets), and for writing - tasks. As a rule, these types of control and materials for their implementation do not depend on any diagnostic goals. Therefore, the main task of

eliminating formalism in a vocational school is the diagnostic determination of goals. Preparation and development of materials for objective and independent control of the quality of student knowledge. This problem is solved with specially created diagnostic materials, that is, test tasks and tests developed according to certain rules.

Pedagogical technologies include the construction of such educational strategies that require mastering not only certain knowledge, but also skills.

So, the essence of pedagogical technologies is reflected in the changing nature and style of education. In addition to the development of mental potential, students undergo personal development, i.e. the educational process itself implies a different position of the teacher and the student in education: they play the role of equal participants in the educational process.

Currently, it is relevant to try to develop a comprehensive pedagogical technology that develops a person at three levels of interaction:

-general pedagogical (covering the educational process of the educational institution as a whole);

subject (which regulates the selection and implementation of content) professional education in each academic discipline);

modular (technological development of certain types of future professional activities, education of personal qualities of future specialists, etc.), which can be carried out within the framework of one educational institution.

Scientific reasoning and methodologically obtained information can be used in the design of the educational process of secondary vocational education institutions, the development of the theory of the college's personality-developing educational system. Educational practice colleges can base the general pedagogical level on the goals, content, forms, tools and methods of teaching, the algorithm of the activities of the subjects of the educational process, as well as the pedagogy that regulates their subject and modular implementation methods. technology pedagogical technology levels.

CHAPTER II.

METHODOLOGY OF CREATING CREATIVE PRDAGOGICAL ELECTRONIC TEXTBOOKS FOR TEACHING VOCATIONAL EDUCATION USING AUTO PlAY TECHNOLOGY.

2.1 Auto Play Media Studio information about the technology of creating electronic textbooks.

Auto Play Media Studio is a program for visually creating autoplay disc skins. The disk autostart shell is a small program with a set of functions for viewing and working with the contents of a disk. Of course, this is a very narrow definition of the capabilities of Autoplay Media Studio. With it, you can create electronic textbooks, CD \ DVD, business cards, presentations, simple games, electronic photo albums, a collection of easy-to-view video files, etc. And all this without knowing programming languages. Autoplay Media Studio includes many visual tools and settings that allow you to create programs "quickly and easily"..

Of course, you can create multimedia autorun menus in other similar programs. However, Autoplay Media Studio is a professional product that provides more options for creating not only menus, but also full-fledged interfaces for software products.

Thanks to the intuitive interface and easy integration of various multimedia objects, even complete beginners can achieve impressive results. The program has many different built-in functions (more than 800).

Automatic Media Studio is a program designed to create CD/DVD automatic launch menu. A large number of templates are attached to the program, but you can create your own project with your own keys for different discs: music, movies, data, etc. When working with the program, you can fully customize the components, add additional "chips": Flash animation, video files, slideshows, links to web pages, etc. Any element can be assigned a specific action. For example, if you hover over an image with the mouse cursor, a text with annotations may appear, and when you click the "Play" button, the movie will start playing. This

program creates all the necessary files for autorun and its graphical shell. The user will only need to burn the finished project to a CD / DVD.

- automatic media Studio has a wide range of possibilities and a rich set of tools for developing multimedia projects. You can use the program not only to create automatic launch files, but also to develop, for example, an interactive training program or a multimedia presentation.

- automatic media Studio - does not require programming knowledge and is very quickly mastered, in addition, the package is ready to design menus with various buttons to launch programs, play sounds, print files, open Internet sites and other things easily includes templates. Make the CD interface the most friendly and beautiful.

The projects created using this product do not lag behind professional developments created in high-level programming languages in terms of functionality. The finished project can be written to optical media with an automatic launch menu. The package has an intuitive interface. There is a built-in programming language to extend the basic capabilities of the program.

In addition to its main purpose, automatic Media Studio can be used to create your own interactive multimedia programs - various program installation menus, electronic business cards, educational materials, etc.

AutoPlay is created by the media object model presented at the end of the work studio. This model consists of a group of individual pages, similar to how it is done on Internet sites. On these pages, you can place objects that can be graphics, text, video.

Areas of the Autoplay Media Studio application:
- ✚ Automatic launch menu for disks (for games, software products, etc.);
- ✚ Reporting (annual financial statements, etc.);
- ✚ Electronic books;
- ✚ Digital magazines;
- ✚ Interactive presentations, slide shows;
- ✚ Software development;

- Lessons;
- Personal web browsers;
- Multimedia business cards;
- Pre-releases;
- Business planning;
- Virtual photo albums;
- And others.

Consider a number of areas where autoplay can be used media studio CD-ROM autorun menu it all started here. Auto Media Studio is the de facto industry standard for creating professional menus for optical media applications. In a few minutes, you can create a menu for viewing documents, browsing the contents of a disk, going to an Internet resource, sending e-mail messages, and more.

Multimedia business cards

Creating original multimedia applications is not a big problem in this tool environment. As a base, you can get the templates and examples that are included in the standard delivery.

Own web browsers

Ready-made templates include an example of a native browser. By improving it a little, you can create a full-featured tool for working with network resources.

Interactive applications for education

Integration of various information presentation formats (text, audio, video) with the use of navigation tools allows creating convenient, high-quality training courses.

Own audio players

just create your own player with playlist support and navigation

Slide show

If you use Autoplay, the ability to create colorful photo slideshows with music and navigation won't be a big problem

Interactive presentations

Creating interactive presentations with video attachments, audio, links to network resources takes only a few minutes. You can use both ready-made templates and create presentations from scratch.

Catalogs

The latest versions of the program have tools for working with databases. Therefore, developers have the opportunity to create illustrated catalogs with data search and sorting functions.Promotional CDs and business cards

Using the built-in programming language, as well as filling the product with flash animation, you can create bright advertising brochures and business cards in optical media.

Resume, electronic portfolio

Electronic portfolios created using AutoPlay look very impressive and modern. Media Studio. Implementation requires digital photos, videos, and descriptive text associated with navigational elements. Naturally, the list can be continued indefinitely. The above are a few areas grouped thematically.

Autoplay Media Studio interface：

Let's get acquainted with the interface of the Autoplay Media Studio program in detail. Start Autoplay Media Studio and select "Create New Project":

In the list of templates that appear, select " Empty Project " and set the name of the project. For example, Project2.

We get a new clean project. In his example, we will get acquainted with the interface of the program.
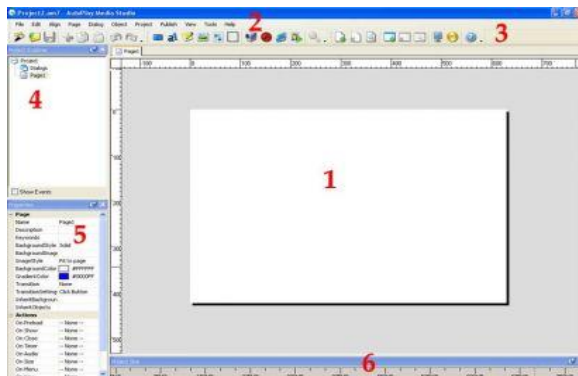
1 - the field of work of the program. Here we place the objects of our application: text, graphics, video, objects for working with sound, tables, etc.

2 - the main menu of the program, like most software products, has an internal hierarchical structure. To access the menu items, left-click on the menu name once and select the desired item in the opened list with the left mouse button.

3. A set of the most frequently used operations presented in the form of graphic elements. To activate any item, you need to click once with the left mouse button. A corresponding dialog box will open for each item. When you hover your mouse over an item, a pop-up tip will appear about the item's purpose.

4.(project Explorer) - project explorer. It is designed to work with the objects participating in the project, that is, with the objects that exist in the project workspace (1). With this window, we can group objects, temporarily hide some objects, for example. With this window we can change the properties of several objects (previously selected).

5. (Features) - features. properties window of the selected object. Using this window, we can change any parameters of the selected object: width, height, color,

labels, location on the workspace, etc.

6. (Project Size) - project size. In this block we can monitor project parameter like size in Mb. Needed for navigation: adapt our project to the selected medium (CD / DVD) or not. Using the View menu item, you can fill the program interface with additional toolbars.

You can hide unnecessary things. Windows can be dragged around the application workspace to arrange tools individually. You can hide unnecessary things. You can drag and drop windows around the program workspace to arrange tools individually. To do this, hold the window by the title bar (blue area) with the left mouse button and drag it without releasing the left mouse button.
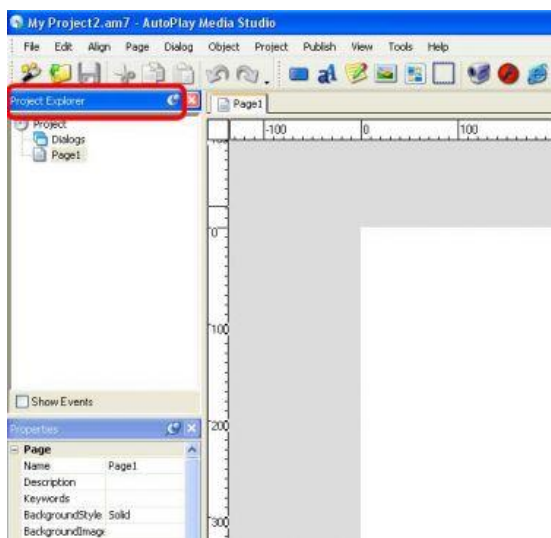
Release the left button in the right place - the tool will be installed on the page. You can always go back to the default tool layout by clicking the View - Layouts - Reset buttons.
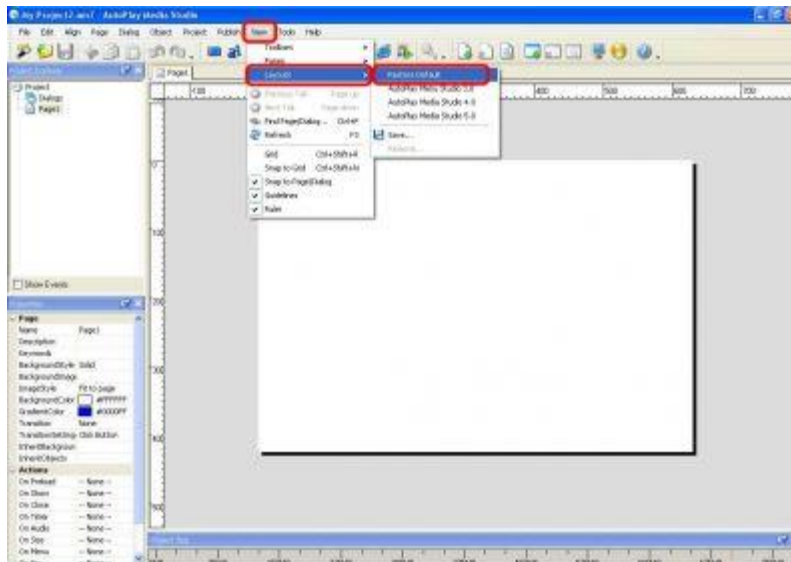
We considered the main tools of the Autoplay program. Media Studio. In more detail, each of the tools can be considered in the process of studying various practical examples.

Autoplay Features Media Studio

Automatic Media Studio is a powerful software product originally aimed at creating self-running discs. A lot of time has passed since the first versions of the program were released. To date, the functionality of the product has been significantly expanded. And work on the development of the program continues.

The program is widely used by world famous brands and ordinary users. The use of autoplay Media Studio allows you to create full-featured interactive multimedia applications, web applications, database management tools in the shortest possible time without using software development tools (C, C++, Java, Visual). will give. main). At the same time, getting a product of no less high quality than applications written using programming languages and software development tools.

The main advantage of AutoPlay media Studio is ease of use. A friendly interface allows you to create the simplest program in the first minutes of familiarization with the program. And together with the Drag technology and the Embedded programming language, Drop does not limit the programmer in writing projects of any direction and level of complexity.

In addition to the capabilities of the program itself, the program developer has

many plugins that can be downloaded both from the program's official website and from third-party developers.

Project creation in the program is completely visual, dragging and dropping images, text, music and video, drop-down lists and web content directly into the development environment using the mouse. More than 250 actions built into the library add interactivity to your projects.

2.2 Creating a creative electronic textbook for teaching vocational education using Auto Play Media Studio electronic textbook creation technology

The concept of "e-books" is used by many experts in the field of educational technologies, but the definition is not generally accepted. Today, there are a large number of electronic documents called electronic books, the doctrine of creating electronic books has only just begun to develop. E-books are a computer tool, a pedagogical program, which primarily combines printed publications, serves for individual learning and provides new information that allows students to test the knowledge and skills they have acquired to a limited extent. Electronic books guarantee the continuity and completeness of the didactic cycle of the educational process, provide theoretical materials, monitor educational activities and knowledge levels, as well as information-search activities, simulation with computer visualization and service functions with interactive feedback. The above interpretations allow a wide range of electronic documents to be considered as electronic books. It can be text documents or complex interactive environments, since the computer system must be used both for reading Word documents and for studying electronic materials with a high level of structured organization. The presence of tests, visualizations, etc., they can be present in electronic documents of any complexity. The general definition of electronic books includes various electronic courses, textbooks, self-study guides, educational methodological complexes, educational materials provided in distance education systems (SDO) are included. Depending on the goals set by the authors and the capabilities of the developers, e-books can have different qualities. In the literature, there is a

classification of e-books, e-guides or teaching-methodical sets according to various criteria: availability of interactivity; by availability; the most important criteria in today's classification are the following characteristics: the presence and form of presentation (structure) of the material.

According to availability, all e-books can be divided into:

* online (online), you can work only through the Internet;

* offline (offline), you can work independently on any computer or other electronic device, for example, a computer.

Electronic online textbooks are available for use on the Internet or in small corporate networks. Placing electronic books on the network allows the developer (teacher) to quickly make changes, correct errors, which is their main advantage. Another plus is the opportunity to organize communication between students and teachers.

Offline e-books can be read on any personal computer (sometimes you need to install a special program). The main formats of independent electronic books are pdf, html, flash, nb (Mathmatica system format), various presentations (PowerPoint format and its analogues), text documents and various multimedia applications. You can create an independent e-book at home using any available tool. All e-books can be divided into four types in the form of presentation of material. This allows you to build the "pyramid" of the evolution of electronic books from the simplest "text document" to the most modern "training courses". Fig. 1. Typology of electronic books according to the level of presentation of material. "Text document" is a simple electronic book. It can be an electronic version of a paper textbook or self-development. However, the written text of the textbook in MS Word alone, without formatting and in a simple mess, cannot be called an e-book. Since a paper textbook is primarily a book-essay compiled according to GOST and certain standards, similar design requirements should also apply to electronic publications (although there are no state standards yet). Written text is a blank space that needs to be drawn (collected) following certain standards. Text document e-book is the main type of e-book, it can be used only as an

auxiliary material in the educational process, but such an e-book can be prepared and used by any teacher. The basis for creating a high-level e-book (independently and by experts with attraction).

An electronic book "e-book" is a "text document" with simple navigation elements added: hyperlinks, bookmarks, and a table of contents. This type is the most common and is called an electronic book in the literature. Most often these are e-books in html, pdf format. "E-course" e-books are usually created using distance learning systems (DLS). E-book, unlike the previous types, can have additional modules: game, information, entertainment. In the group, there are various forums for communication between students and the teacher. An electronic course includes a mandatory knowledge testing system and unnecessary information such as links or entertainment. The introduction of electronic information-educational resources, for example, electronic books and textbooks, into the educational process helps to develop students' independent, searching, scientific-research activities, and increase their knowledge and professional interests.

An e-book as a new type of educational tool can be an open or partially open system, for example, a system that allows changes to be made to the content and structure of a textbook. In this case, of course, there should be a restriction on the unauthorized modification of the textbook in order not to violate the "copyright and related rights" law. Second, if such an opportunity is provided, only an experienced teacher should be allowed to do so, so as not to spoil the general structure and content of the e-book. Making changes to the e-book is, first of all, to adapt it to a specific curriculum, material skills and technical base, personal experience of the teacher, the current state of the subject, the basic level of student preparation, the level of preparation, the subject. may be required to accommodate the number of hours devoted to study and others. It should be noted that the e-book should not only reproduce printed publications, but also use all modern advances in computer technology.

The electronic book must have the following mandatory elements (blocks):

* methods of learning the theoretical foundations of science (informational component);

* practical training support measures;

* knowledge control measures in science;

* tools of teacher-student interaction in learning science;

* instructions for studying science in general and individual subjects within them;

* means of controlling the process of learning the discipline.

The above components are interrelated.

The structure of the manual is mainly determined by the use of e-books to organize students' independent work, and it is necessary to clearly define which sections and in what order are studied and related to each other.

Thematic material prepared for electronic publication in the form of an electronic catalog must meet the following requirements:

* the exact structure of the thematic material (by sections, topics, paragraphs) and a certain sequence of studying its elements;

* complexity and depth of the structure of thematic materials;

* the presence of recommendations for the study of the discipline;

* the content of the provided information material;

* clarity and clarity of main ideas;

* the presence of internal (for example, a glossary of terms) and external (for example, for any program) elements of educational materials;

* availability of graphic design and visual materials (explanatory schemes, drawings, video and audio attachments, etc.);

* integration of secondary and current knowledge level, etc;

The main feature of the e-book is to combine the necessary theoretical material with various and carefully selected tests, each of which is accompanied by comments.

After choosing the answer, whether it is chosen correctly or not, the student should see a detailed solution to this or a similar problem. It helps to better understand the studied material. The importance of e-books increases in the

conditions of insufficient educational materials in various subjects. By definition, an electronic book is a computer containing educational information prepared and structured in a certain way, as well as a system of exercises for understanding and strengthening it, scenarios of educational work and programs that implement them. system. computer assisted learning. Thus, an e-book should cover all types of training in science and should include at least three components: theoretical, practical parts and control of knowledge. Although informational education does not sufficiently develop students' creative abilities and does not allow for individualization, this type of education takes a lot of time. Informative and visual education helps to learn large and very complex materials. An electronic book, including not only textual and graphic information, but also audio and video frames, allows you to customize your reading and, unlike a regular (printed) textbook, has interactive capabilities. For example, on demand, a student who introduces him (e-book) to an activity conducted under the guidance of a teacher can provide the necessary information. Although the number of questions that can be asked by the computer to students and especially to the computer is very low compared to the questions that can be asked in communication with the teacher, their range is gradually expanding. It is very important that the student has the opportunity to use the same electronic resource during lectures, practical training and during independent work, their use in the didactic process creates a holistic image of the studied topic. When developing and creating electronic books, as well as other educational programs, it is necessary to follow the psychological principles of human-computer interaction. Disruption often manifests as: "too much help, too little help, too little judgment, too much informational communication, interruptions in the computer, i.e. the computer may respond to a problem or question that is not significantly resolved, insufficient help" motivation, extreme category". And this can lead to an increase instead of the expected reduction in study time, a decrease in motivation to learn, etc.

I want to create an electronic textbook for Creative Education using creative pedagogical technologies in the Auto Play media Studio program. Creative

pedagogical technologies and educational methods are used in the electronic textbook.

For this purpose, we collect a database of lectures, practical exercises, laboratories, presentations, and creative methods on the science of creative education..

Now we will start working on the electronic textbook

Figure 1. Electronic textbook on creative education

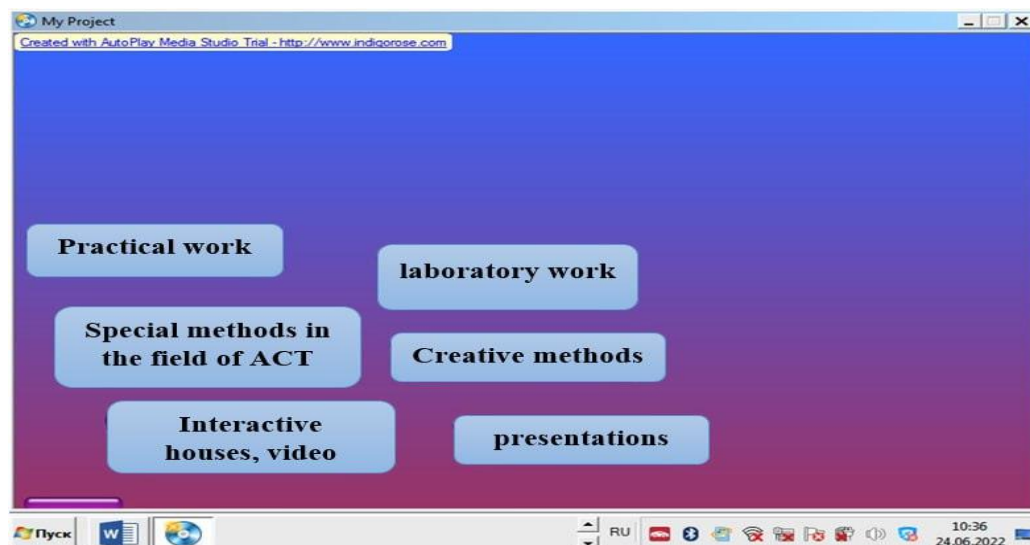I made a tutorial background using special buttons.

Figure 2.

The second title of the electronic textbook on creative education is ready. The second page contains practical works, laboratories, special methods, teaching

methods, presentations and videos on the subject of creative education. You can go to the desired material by clicking on the button.
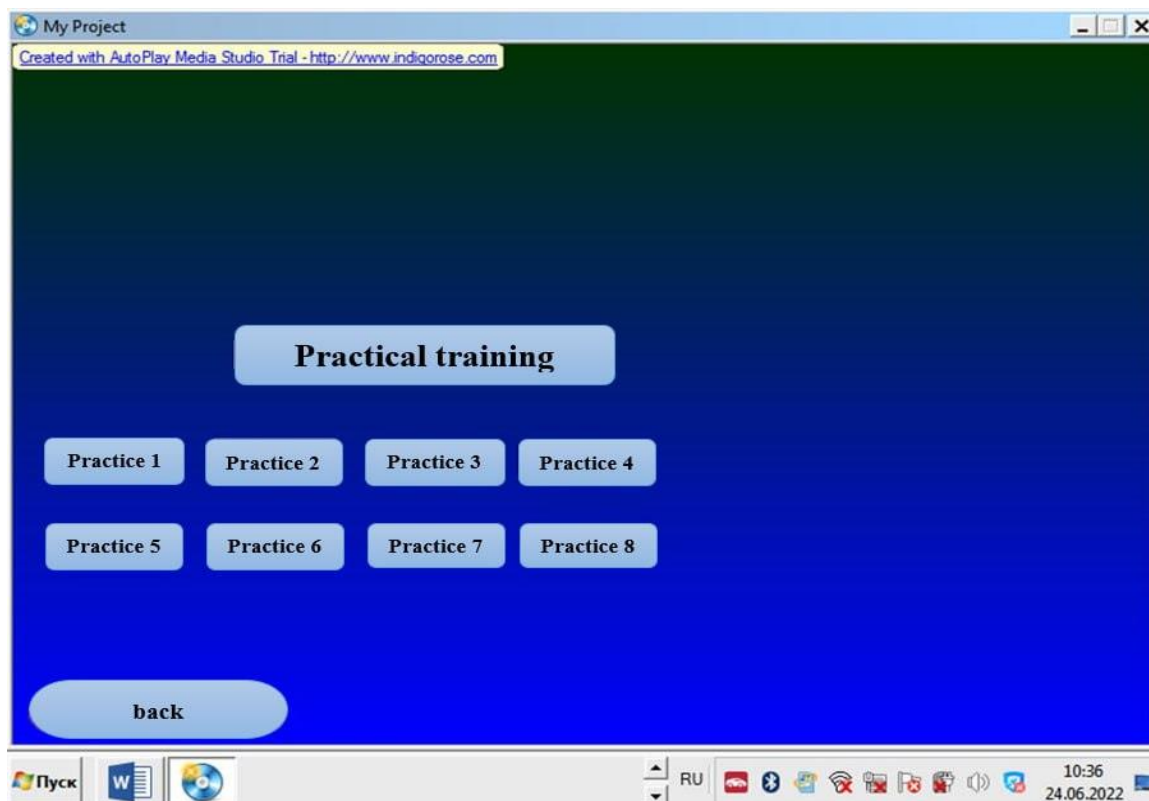

Figure 3.

Moved to the next title through the practical exercises button. This title includes practical training during the semester. You can go to the training by clicking on the practical training you have chosen. In the practical training, the practical topics related to the background are fully covered.

Figure 4.
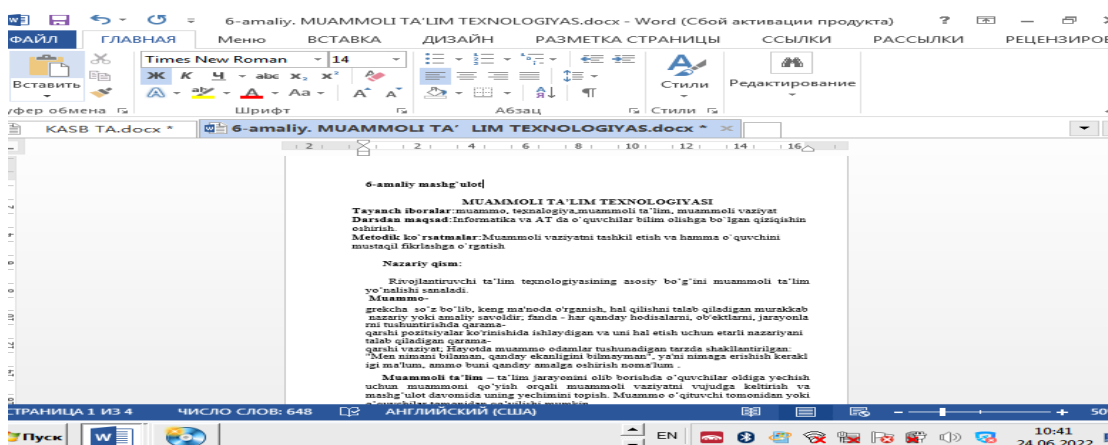
35

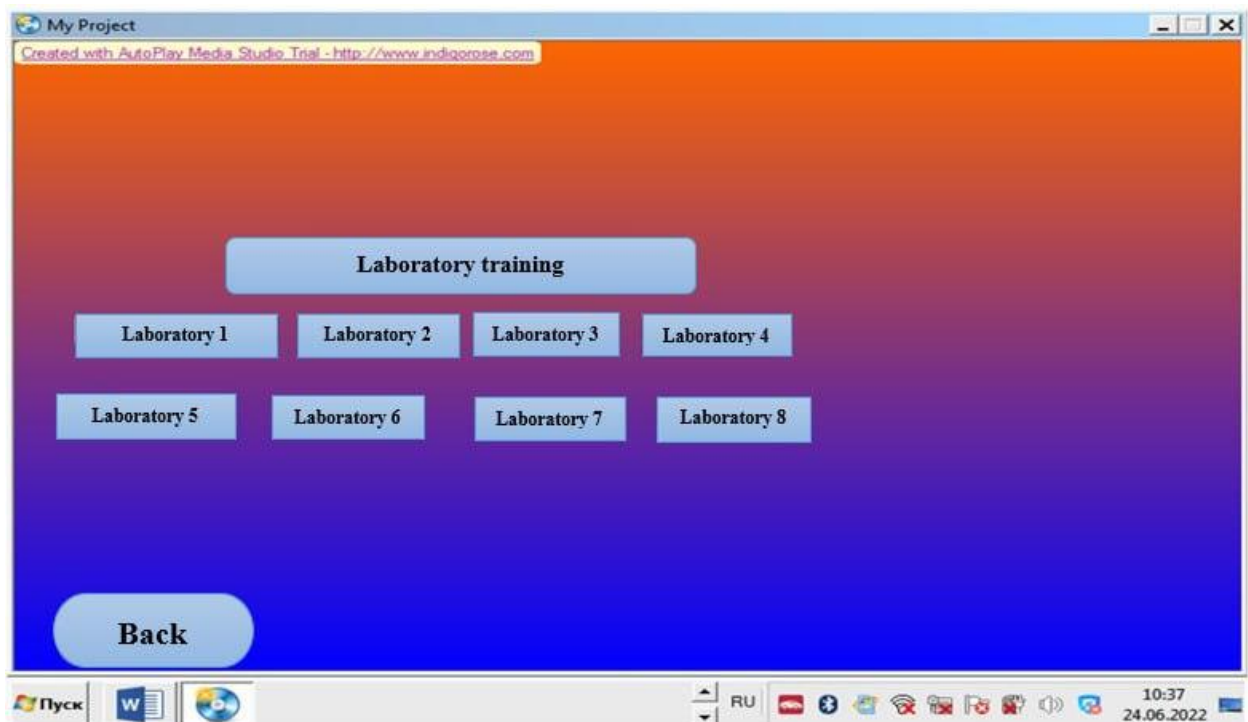When the 6th practical training button is pressed, it reveals the topic we need.
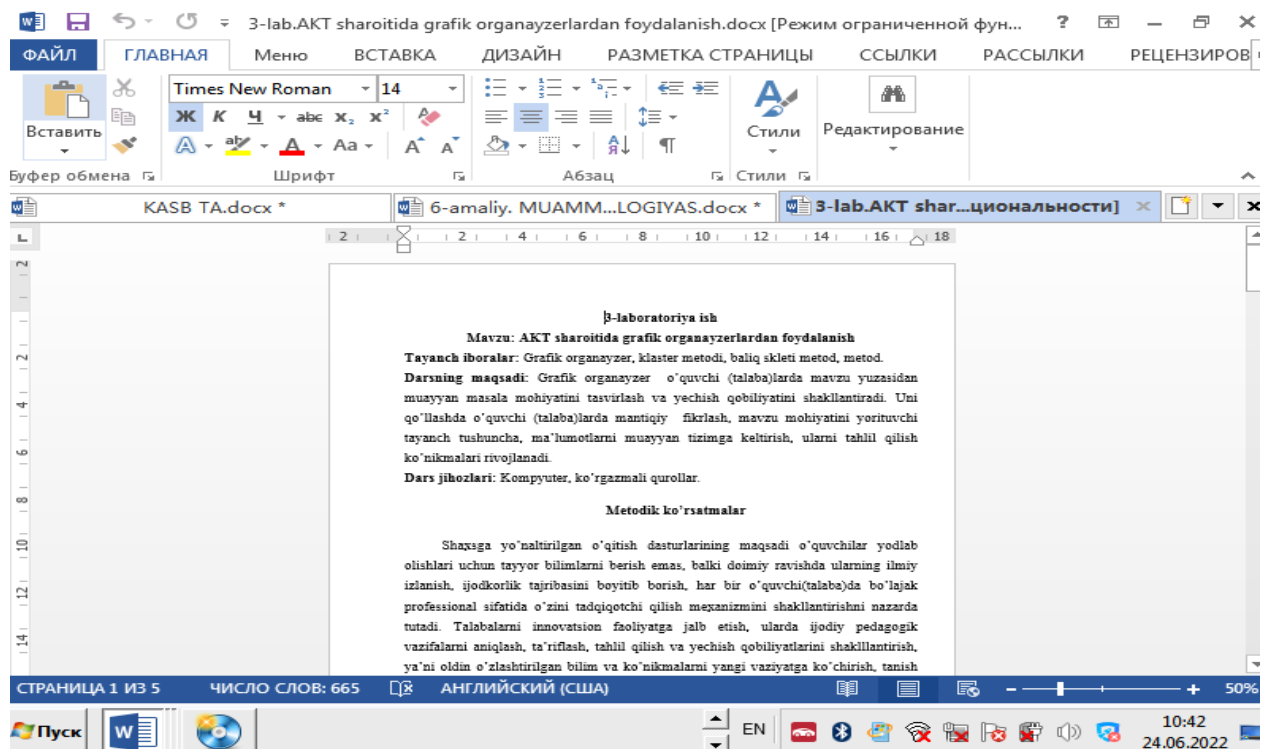

Figure 5.

Figure 6 You can get full information for laboratory training.

Vocational education teachers use the knowledge and skills that students

have acquired during theoretical training and deepen them while conducting practical training in special subjects. The intended purpose of the practical training largely determines the methodology of conducting it, the methods of the teacher of a special subject to guide the work of students, the procedure for performing some experimental or practical work, and so on. After the students have mastered the theoretical material and become familiar with the studied phenomena and processes, it is much easier to conduct practical training with them. In this case, the teacher's training information on the new topic will be very short and clear.
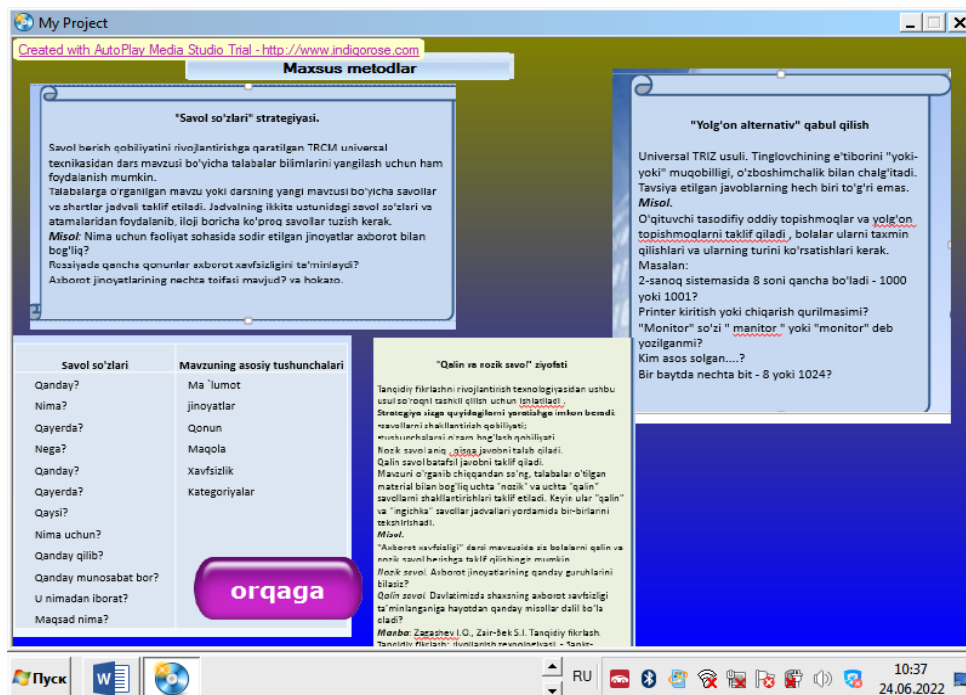
Figure 7

"False alternative" acceptance

Universal TRIZ method. The listener's attention is distracted by the "either-or" alternative, which is arbitrary. None of the suggested answers are correct.

An example.

The teacher offers random simple riddles and false riddles, the children have to guess them and indicate their type. For example:

What is the number 8 in number 2 - 1000 or 1001?

Is a printer an input or output device?

Universal TRIZ method

"Question Words" Strategy.

The universal technique of TRCM aimed at developing the ability to ask questions can also be used to update students' knowledge of the subject of the lesson.

Students are offered a table of questions and terms on the studied topic or a new topic of the lesson. Make as many questions as possible using the question words and terms in the two columns of the table.

"Question Words" Strategy. The following questions are asked using this method:

Question words	Basic concepts of the subject
How?	Information
What?	crimes
Where?	Law
Why?	Article
How?	Security
Where?	Categories
Which one?	
What for?	
How?	
What is the relationship?	
What does it consist of?	
What is the purpose?	

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Students are offered a table of questions and terms on the studied topic or a new topic of the lesson. Make as many questions as possible using the question words and terms in the two columns of the table.
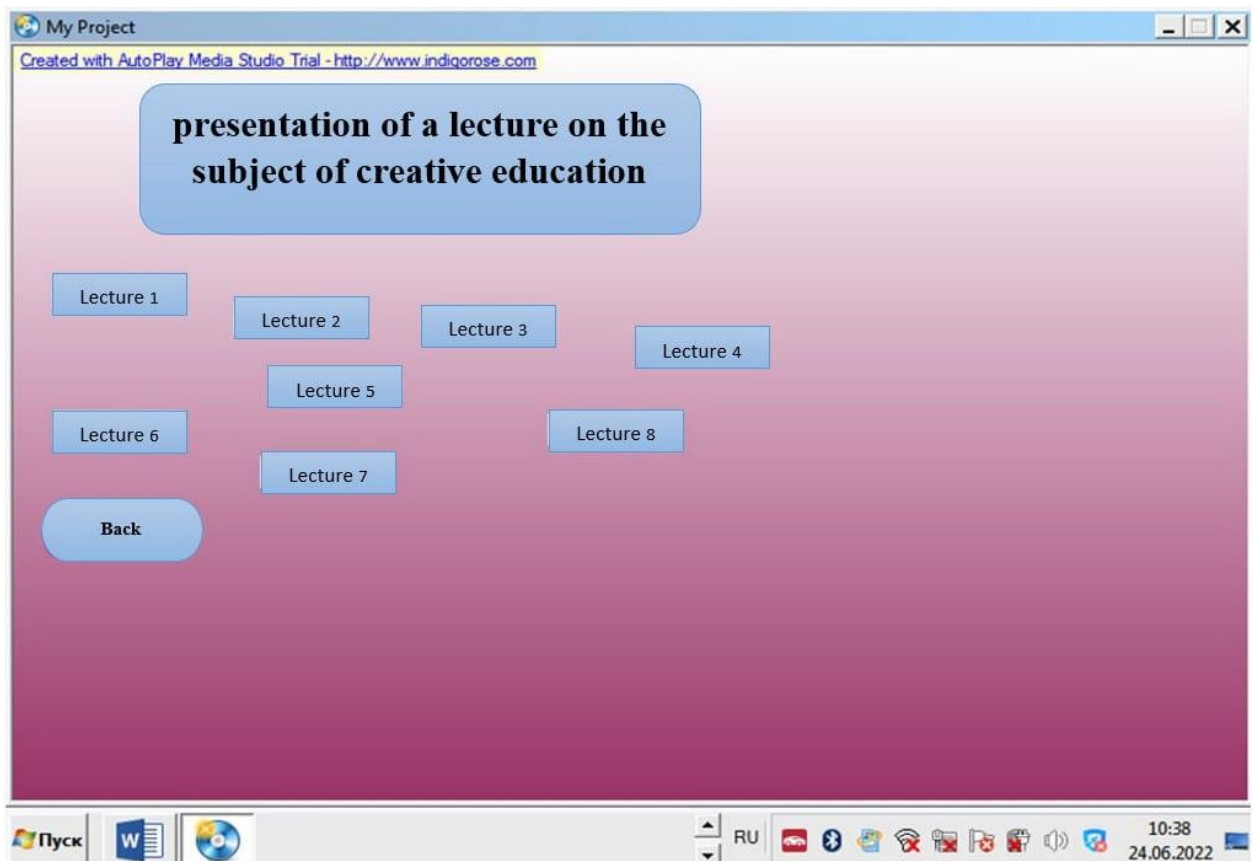
Figure 8.

You can learn the topic you need by using the buttons.
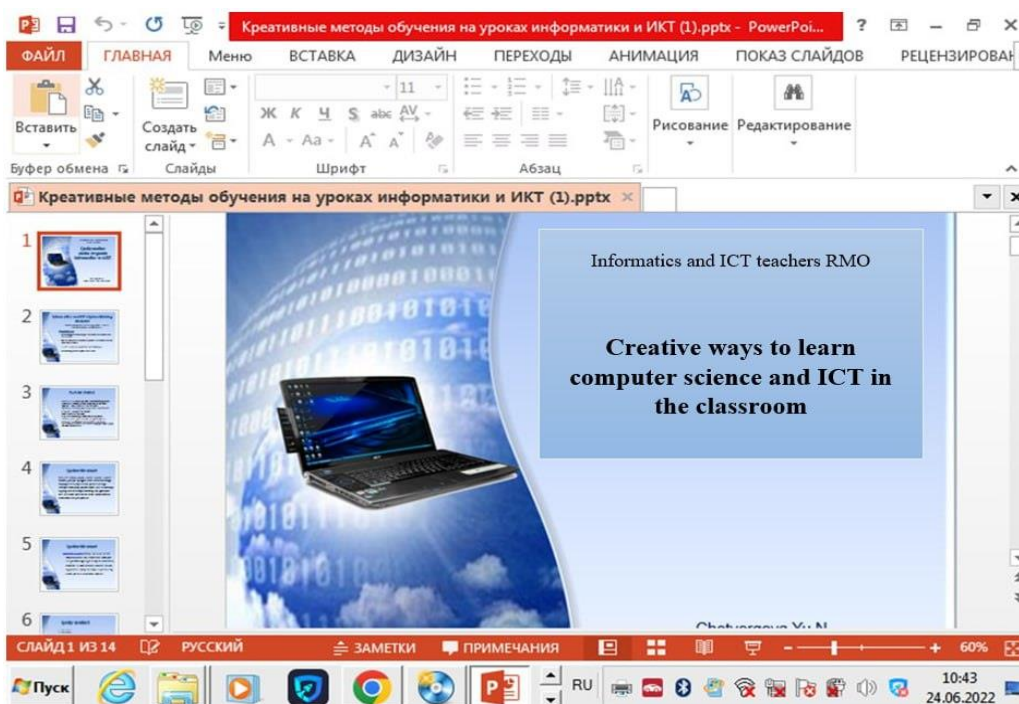
Figure 9.

After choosing a lecture, a presentation on this topic will be shown.

Much has been said and written about how to make a presentation. Nevertheless, today, students and high school students are taking on the task of preparing presentations for their projects. And then - and teachers with teachers, watching dozens of template slides and reading microscopic text written in red letters on a bright green background.

Figure 10

It is possible to include special video lessons, videos of interactive games in electronic lesson technology for teaching vocational subjects. I took this opportunity to post a video tutorial.

The choice of methods and methods depends on the problem that the teacher intends to solve in the lesson. For example, if the same methods are used in the presentation of new material, the second method is used in strengthening it, and in summarizing the topic, different methods a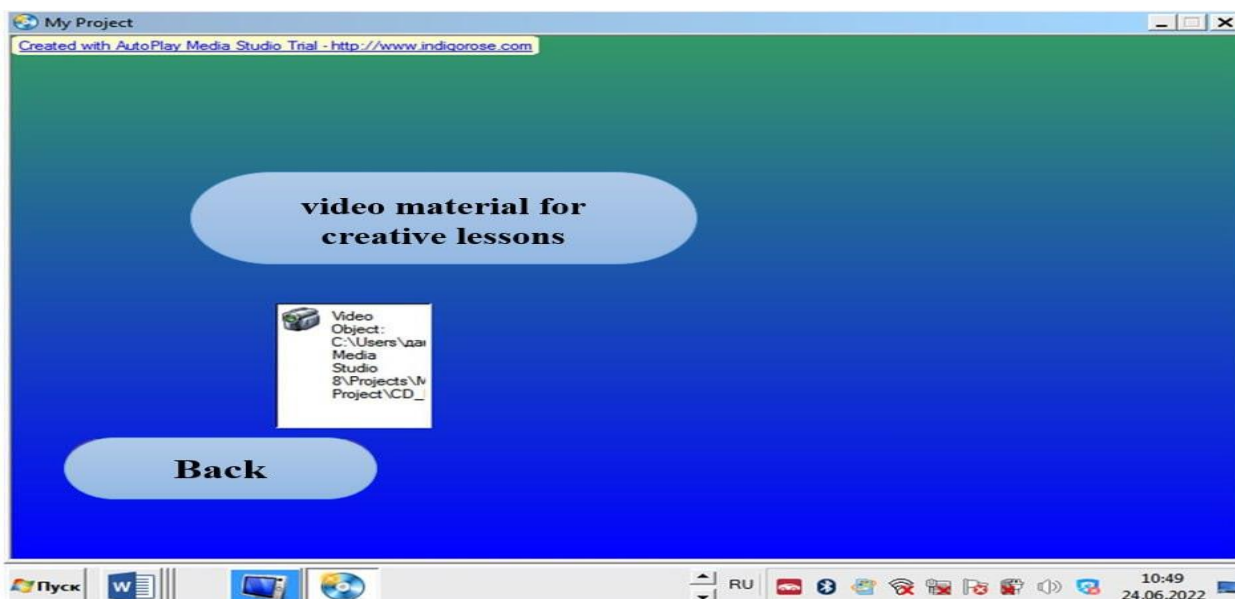re used. It is very important to think carefully and choose effective methods and methods at different stages of the lesson. At the very beginning of the lesson, the teacher conducts a general inquiry for 4-5 minutes and determines which group of students has not mastered the previous lesson enough, and in the next inquiry, the attention of the class is first on this focuses on the issue. First, he asks students who can answer the questions in detail. As a result, the material that was complicated for a part of the class becomes understandable. This method helps to notice the defects of students in training and to eliminate them immediately. The effectiveness of this method is the same.

Although there are many methods and methods in the work of each teacher, the goal of their application is to activate the educational work of the student. This event is very important, firstly, it turns students into their faith, and faith into practical activity and behavior, and secondly, it facilitates the work of the teaching process. After all, reading and learning is a complex activity that requires attention and requires a sharp mind, strong will, clear imagination, and strong memory..
The task of the teacher is to develop these qualities in students and teach them to overcome difficulties using effective methods and methods.
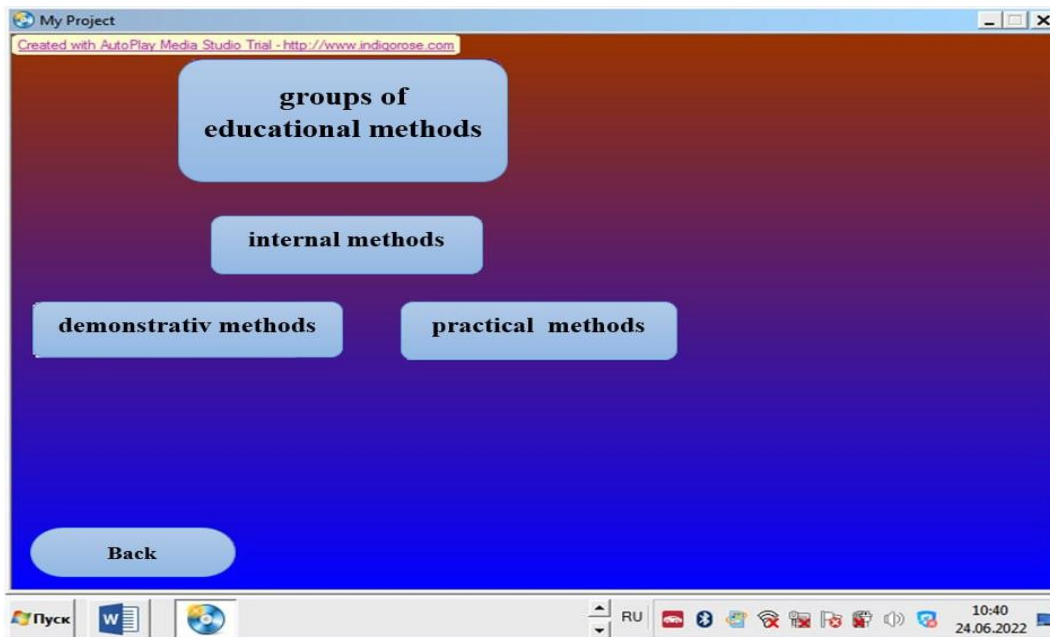
Figure 11

After we finish working on the textbook, we will change it to an exe file.
That is, it will be in the form of an application.
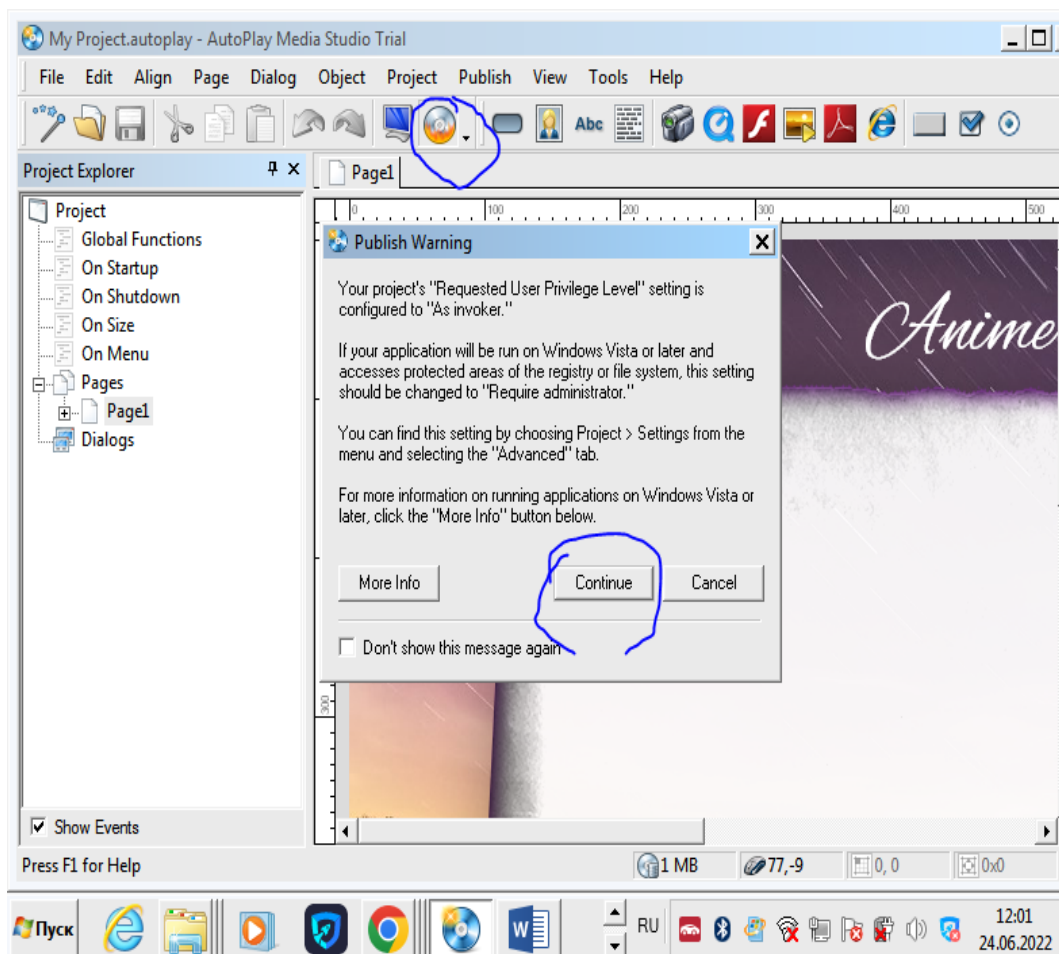
Figure 12.In this case, we click on the first disk and press the Continue button
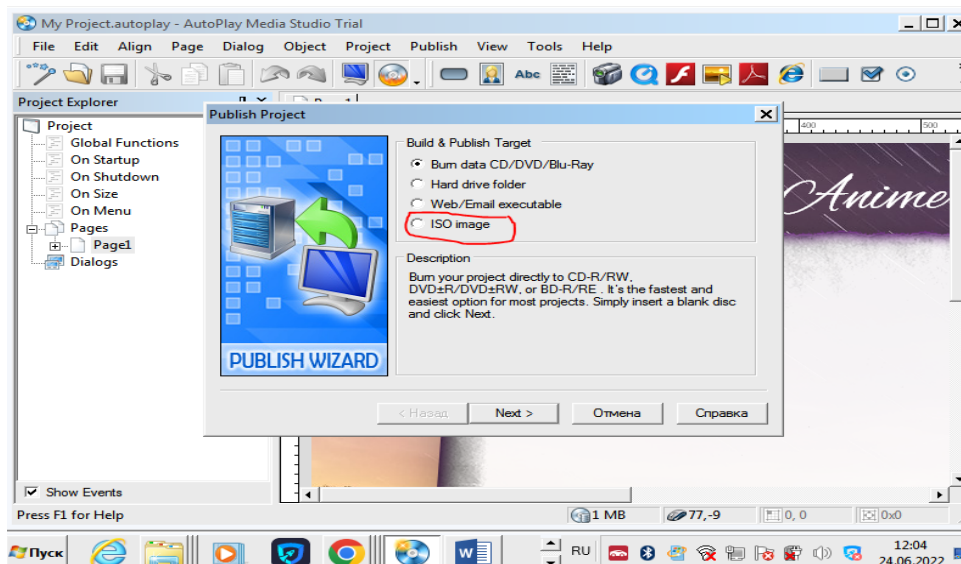
Figur 13

If we store it in memory in Iso format, it presents us with an application in the form of exe..

After clicking the Next button, the program will be transferred to ISO format. Then we can easily use it as an e-textbook.

We can easily access the textbook from the place we saved it in memory.
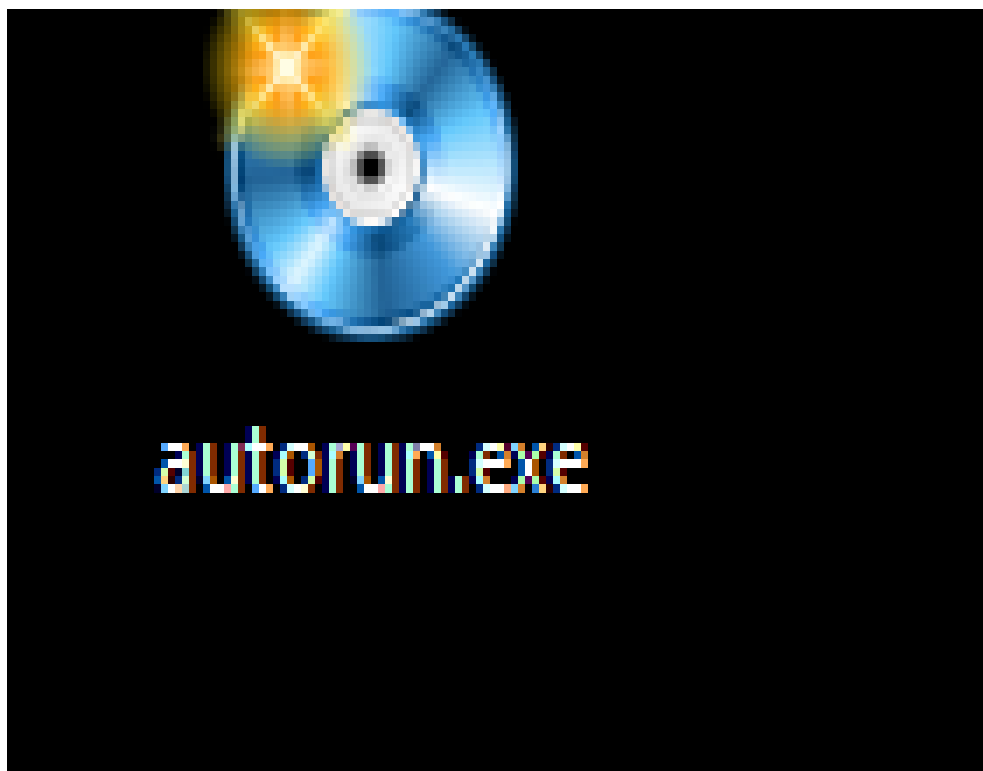
Figure 14. Computer view of the electronic textbook.

2.3. The method of using creative pedagogical technologies in the teaching of vocational education, the interactive methods used in teaching the subject

✓ **"INSERT" METHOD**

The purpose of the method: This method is used to facilitate students' acceptance of a new information system and the assimilation of knowledge, and this method also serves as a memory exercise for students.Metodni amalga oshirish tartibi:

➢ Before the lesson, the teacher prepares the input text in the form of a handout or presentation, which covers the main concepts of the topic of fundamental concepts of cyber security.;

➢ a text explaining the essence of the topic of the new fundamental concepts of cyber security is distributed to learners or shown in the form of a presentation;

➢ Learners get to know the text individually and express their personal views through special symbols. When working with the text, students or participants are advised to use the following special characters:

➢

Signs	1- text	2-text	3-text
"V" – familiar information.			
"?" – I did not understand this information, I need an explanation.			
"+" This information is new to me.			
"– " I am against this opinion or this information?			

At the end of the specified time, the information that is unfamiliar and incomprehensible to the students will be analyzed and explained by the teacher, and their essence will be fully explained. The questions will be answered and the session will end.

"SWOT-analysis" method

The purpose of the method: analysis of existing theoretical knowledge and practical experience, finding ways to solve problems through comparison, strengthening, repeating, evaluating knowledge, forming independent, critical thinking, non-standard thinking.

S – (strength)	• strengths
W – (weakness)	• weak points
O – (opportunity)	• possibilities
T – (threat)	• barriers
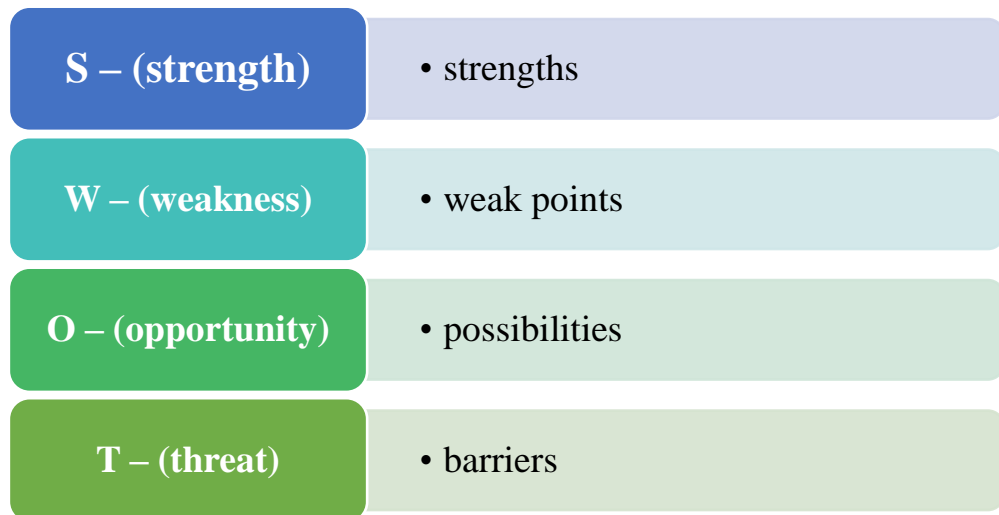
Example: Put the SWOT analysis of the methods used in the teaching of vocational education in this table.

S	A reliable method of defense in the teaching of vocational education	Ensures integrity, confidentiality, and authentication of information
W	Weak keys have a negative impact	When choosing keys, you need to choose a durable key
O	The method can be implemented in hardware and software form	Very convenient to use
T	The development of computing systems weakens the tolerance of cryptographic algorithms.	The length of the keys should be increased.

1 - KEYS

The study of the literature created on the methodology of professional education showed that in them - the essence of the concept of the educational process is explained in different ways..

This is the educational process:

1. Activities aimed at ensuring their mastery (teaching) at one or another level by imparting knowledge to students, giving them skills, qualifications.

2. The joint activities of teachers and students aimed at managing the process of ensuring the assimilation (reading) of BKM by students (because teaching and learning are interrelated and mutual are conditioned parties).

3. Consistency of the teacher's leadership and actions, which are directed to the conscious and thorough assimilation of BKM by students, and in this process, strengthen knowledge, master the elements of mental and physical work culture, enrich the worldview, and form the behavior of students.

4. Under the guidance of the teacher, active learning activities aimed at mastering the BKM, developing abilities and forming worldviews.

Tasks on the execution of the case:

1. Understand the essence of the case sufficiently.

2. Determine the factors that serve to find a solution to the problem based on the given sources.

3. Among the identified factors, identify the factor (or two factors) most likely to contribute to the problem.

4. Try to justify the solution based on these factors.

5. State the solution.

It will be discussed with the participation of students.

✓ **Below is the structure of the "Discussion" method.**

```
┌─────────────────────────────────────────┐
│   DESCRIPTION OF PROBLEM SITUATIONS      │
└─────────────────────────────────────────┘
                    │
                    ▼
        ┌───────────────────────────┐
        │    to divide into groups   │
        └───────────────────────────┘
                    │
                    ▼
    ┌─────────────────────────────────────┐
    │  to determine the causes of problematic │
    │         situations in groups         │
    └─────────────────────────────────────┘
                    │
                    ▼
    ┌─────────────────────────────────────┐
    │ to think about the consequences of problematic │
    │         situations in groups         │
    └─────────────────────────────────────┘
                    │
                    ▼
      ┌───────────────────────────────┐
      │  work out solutions to problematic │
      │        situations in groups      │
      └───────────────────────────────┘
                    │
                    ▼
       ┌─────────────────────────────┐
       │  choosing the right clothes  │
       └─────────────────────────────┘
```
✓
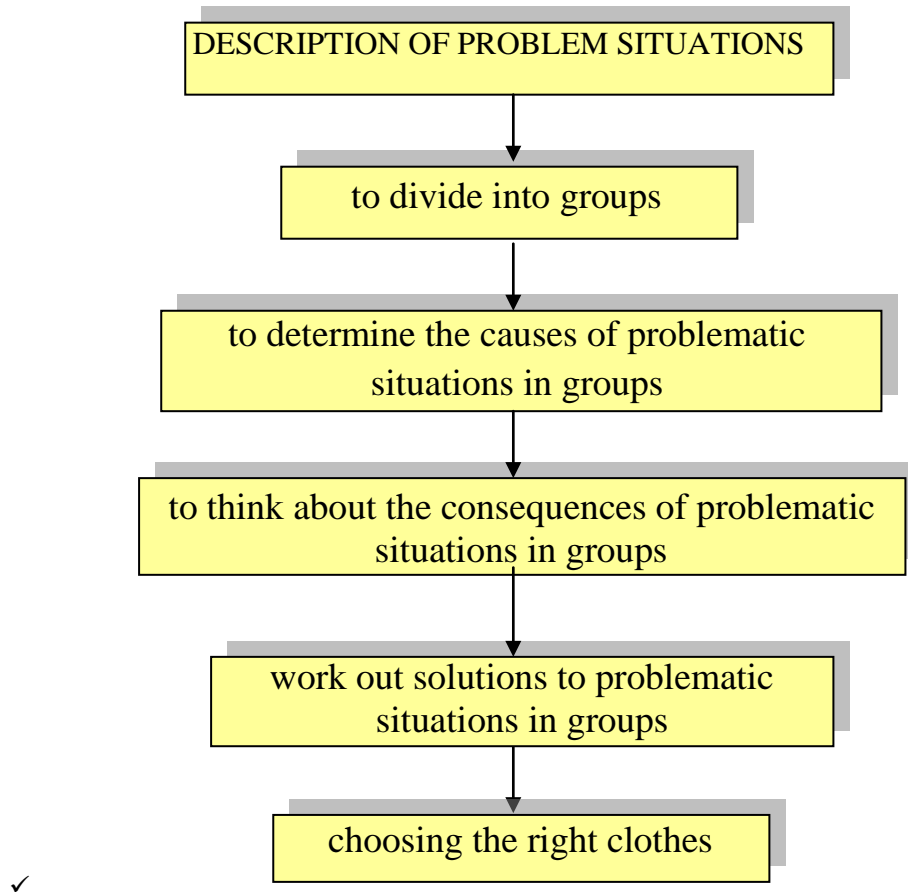
The structure of the "discussion" method

The stages of the "discussion" method are as follows:

1. The teacher chooses the topic of discussion, that is, the topic of the fundamental concepts of Cyber Security, and develops questions about it.

2. The teacher asks the students a question about the problem and invites them to a discussion.

3. The teacher writes down the answers given to the given question, that is, different ideas and opinions, or appoints one of the students as a secretary to perform this task. At this stage, the teacher creates conditions for students to freely express their thoughts.

4. The teacher divides, summarizes and analyzes the thoughts and ideas expressed together with the students.

5. As a result of the analysis, the optimal solution to the problem is selected.
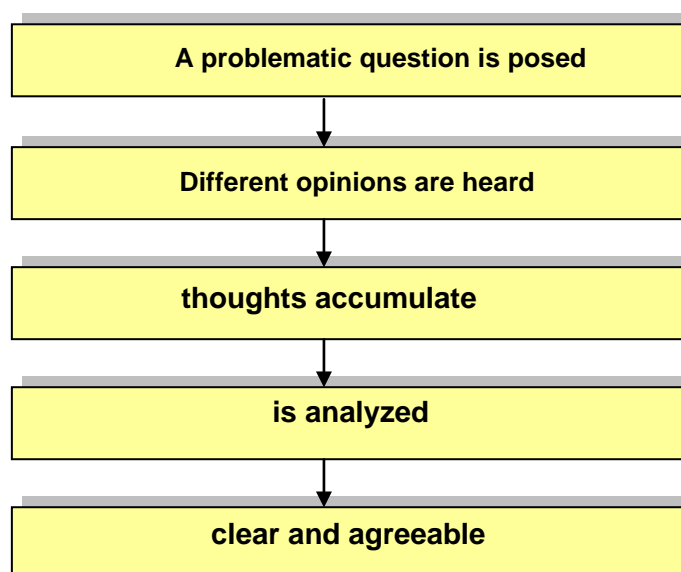
Advantages of the "discussion" method:

• encourages learners to think independently;

• learners are given the opportunity to try to prove the correctness of their opinion;

• helps students develop listening and analytical skills.

Disadvantages of the "discussion" method:

• requires high management skills from the teacher;

• it is necessary to choose a topic that is suitable and interesting for the level of knowledge of students.

"Problem situation" method - is a method aimed at forming the skills of students to analyze the causes and consequences of problematic situations and find their solutions.

The complexity of the problem chosen for the "Problem Situation" method should correspond to the level of knowledge of the learners. They must be able to find a solution to the given problem, otherwise, when they cannot find a solution, it leads to the loss of interest and self-confidence of the learners. When using the "problematic situation" method, students learn to think independently, analyze the causes and consequences of a problem, and find a solution. Below is the structure of the "Problem Situation" method.

```
┌─────────────────────────────────────┐
│   A problematic question is posed    │
└─────────────────────────────────────┘
                   │
                   ▼
┌─────────────────────────────────────┐
│      Different opinions are heard    │
└─────────────────────────────────────┘
                   │
                   ▼
┌─────────────────────────────────────┐
│         thoughts accumulate          │
└─────────────────────────────────────┘
                   │
                   ▼
┌─────────────────────────────────────┐
│             is analyzed              │
└─────────────────────────────────────┘
                   │
                   ▼
┌─────────────────────────────────────┐
│          clear and agreeable         │
└─────────────────────────────────────┘
```

The structure of the "Problem situation" method

The steps of the "Problem Situation" method are as follows:

1. The teacher selects a problem situation on the topic of the fundamental concepts of cyber security, determines the goals and tasks. The teacher explains the problem to the students.

2. The teacher introduces students to the purpose, tasks and conditions of the assignment.

3. The teacher divides the students into small groups.

4. Small groups study the given problem situation. They determine the causes of the problem and each group makes a presentation. After each presentation, the same points are collected.

5. At this stage, they present their opinions about the consequences of the problem during the given time. After the presentation, the same thoughts will be collected.

6. They discuss and analyze various possibilities of solving the problem. They develop ways to solve the problem situation.

7. Small groups make a presentation on the solution to the problem situation and offer their options.

8. After all presentations, the same solutions are collected. Together with the teacher, the group chooses the most optimal options for solving the problem situation.

Advantages of the "Problem Situation" method:

• forms independent thinking skills in learners;

• learners learn to find causes, consequences and solutions to problems;

• a good opportunity is created to assess the knowledge and abilities of learners;

• learners learn to analyze ideas and results.

**Disadvantages of the "problematic situation" method:**

• high motivation of students is required;

• the problemhould correspond to the level of knowledge of students;

• takes a lot of time.

The "Project" method is a way for students to gather information, conduct research and implement work on the topic of the fundamental concepts of cyber security, individually or in groups, for a specified period of time. In this method, learners participate in the processes of planning, decision-making, implementation, verification and conclusion, and evaluation of results. Project development can be individual or group, but each project is a coordinated result of the joint activity of the study group. In this process, the task of the learner is to develop a new product or find a solution to another task within the specified time. From the learners' point of view, the task should be complex and it should be a task that requires learners to apply their existing knowledge to other situations**.**

The project should serve learning, apply theoretical knowledge on the topic of fundamental concepts of cyber security, create an opportunity for independent planning, organization and implementation by learners.

The diagram below shows the stages of the "Project" method.
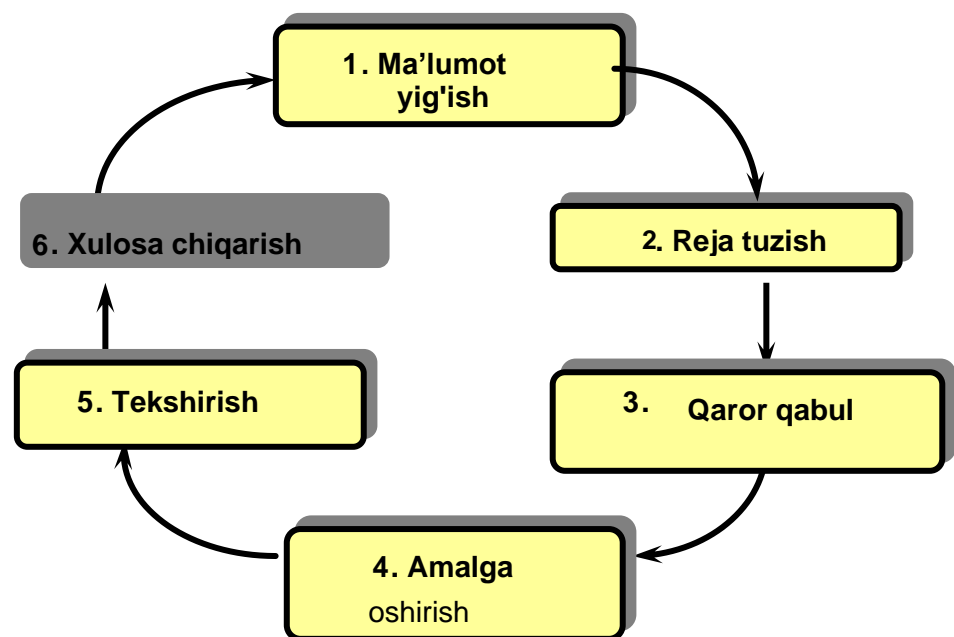
Stages of the "Project" method

The stages of the "Project" method are as follows:

1. The engineer-pedagogue develops assignments for project work. Learners independently collect information about the task based on textbooks, schemes, handouts.

2. Learners develop a work plan independently. In the work plan, students should plan the stages of work, the time and technological sequence allocated to them, materials, equipment.

3. Small groups present work plans. Learners make a decision on completing the assignment based on the work plan. Learners discuss the results of the decisions made together with the engineer-pedagogue. Different solutions are compared and the most optimal option is selected. The engineer-pedagogue develops the "Evaluation form" together with the students.

4. Learners carry out the task independently based on the work plan. They can work individually or in small groups.

5. Learners check the work results themselves. In addition, small groups are involved in checking each other's work results. The results of the inspection are recorded in the "Evaluation Form". Learners or small groups report. The end of the work is reported in one of the following forms: oral report; report through the presentation of materials; a written report in the form of a project.

6. The engineer-pedagogue and students analyze the work process and results together during the final interview. It compares the indicators achieved in the educational practice sessions with the normative indicators. If the normative indicators were not achieved, the reasons for it will be determined.

Summary

Information communication occupies a very important place in the educational system.

The assigned task requires a transition to a new system-activity education paradigm, which, in turn, is associated with radical changes in the activity of a teacher who implements a new standard. Teaching technologies are also changing, the introduction of information and communication technologies (ICT) opens up great opportunities for expanding the educational base of each subject in an educational institution.

In such conditions, the traditional school that implements the classical model of education has become ineffective. Teachers have a problem - to turn traditional education focused on the accumulation of knowledge, skills, and abilities into the process of developing the child's personality.

Abandoning the traditional lesson by using new technologies in the educational process allows to eliminate the monotony of the educational environment and the monotony of the educational process, to create and implement conditions for changing the types of activities of students. It is recommended to choose technology depending on the content of the subject, the goals of the lesson, the level of preparation of students, the ability to meet their educational needs, and the age group of students.

Improving the teaching of "Vocational Education" subjects in educational institutions, increasing the effectiveness of education through the wide use of modern pedagogical and information technologies, non-traditional and interactive methods in learning science is of positive importance. Therefore, the development of a set of educational and methodological materials suitable for the content of teaching, especially in the form of games, and their application to the educational process is the basis for inclusion in the list of current issues in the education of young people.

In short, the role of creative pedagogy and information technologies in the educational process, learning their use, general principles of creative pedagogy,

methods and tasks that develop creative qualities in pedagogues.

Creating methods of using creative pedagogical technologies in teaching vocational education. With the help of the AutoPlay program, an electronic textbook is created using creative pedagogical technologies for teaching vocational education.

The developed program module can be used as a guide for programmers and teaching staff working on topics in other educational fields.

References

1. N.N. Azizkhojaeva. Pedagogical technologies and pedagogical skills. Tashkent: Publishing House of the Literary Fund of the Writers' Union of Uzbekistan. 2006

2. Innovative educational technologies / N.A. Muslimov and others. - T.: "Sano-standard" publishing house, 2018. - 150 pages

3. Habeeb, K.M. and Ebrahim, A.H. 2019. Impact of e-portfolios on academic staff assessment and student performance on learning science concepts in kindergarten. Education and Information Technologies. Volume 24, Issue 2, 1661-1679. DOI: https://doi.org/10.1007/s10639-018-9846-8

4. Zakirova, F.M., Saidova, F. and Zakirova, M. 2018. Blended learning for the development of academic staff creativity: The experience of advanced training of pedagogical staff in the Republic of Uzbekistan. In 2nd International Conference on Digital Technology in Education, ICDTE 2018. Thailand. 143696. DOI: https://doi.org/10.1145/3284497.3284501

5. Information technologies in education: Study guide / R.X. Ayupov. Tashkent State Pedagogical University named after Nizomi. - T.: TPDU, 2020, 580 pages.

6. Alenicheva E.V., Monastyrev V.P. Elektronnyi uchebnik (problemy sozdaniya i otsenki kachestva)// Vysshee obrazovaniya v Rossii. – - 2011. - #1

7. Vlasov D.A., Kuzina L.S., Monakhov V.M. i dr. Technological procedure sozdaniya elektronnogo uchebnika. 2nd all-Russian conference "Elektronnye uchebniki i elektronnye biblioteki v otkrytom obrazovanii". M: "MESI", 2011, p.118.

8. Demkin V.P., Vymyatin V.M. Principles and technologies of electronic engineering. Tomsk, 2002. 64p.

9. Zaynutdinova L.Kh. Sozdanie i primenenie elektronnykh uchebnikov: Monograph. - Astrakhan: Izd-vo "TsNTEP", 2009. - 364p.

Additional literature

1. Action strategy on five priority areas of development of the Republic of Uzbekistan in 2017-2021 (02.07.2017. PF-4947);

2. Decision of the President of the Republic of Uzbekistan No. PQ-3365 of November 1, 2017 on measures to strengthen the infrastructures of scientific research organizations and develop innovative activities;

3. Resolution of the President of the Republic of Uzbekistan dated September 26, 2017 No. PQ-3290 on improving the targeted training system of candidates for higher education;

4. Decision of the President of the Republic of Uzbekistan dated February 3, 2018 No. .

5. Decree No. PF-5349 of February 19, 2018 "On measures to further improve the field of information technologies and communications".

6. Decision PQ-4699 of the President of the Republic of Uzbekistan dated April 28, 2020 "On measures for the widespread introduction of the digital economy and electronic government".

7. Decree No. PF-6079 dated October 5, 2020 of the President of the Republic of Uzbekistan "On approval of the "Digital Uzbekistan - 2030" strategy and measures for its effective implementation"

Sources of information:

1. http://dx.doi.org/10.1080/09523987.2015.1005425
2. 15.www. moodle. com
3. 14.www. library. ru
4. 16.http://webadequate.ru/rabota-s-bd-mysql/43-grading_sql_commands.html
5. 17. http://sql-ex.ru/
6. 18.http://www.sql-tutorial.ru/