Methodology Of Modern Teachıng Dıdactıc Methods For Educatıon Of The Teacher Of Vocatıonal Educatıon Based On The Stratıfıed Approach

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Abstract

The article explores the theoretical aspects of using modern teaching didactic tools in preparing a teacher of vocational education based on a differentiated approach, which is scientifically based on the need to make stratification in educational institutions and the purposeful and continuous formation of the knowledge and skills that students need. There is also a method for using modern teaching didactic tools in training based on a differentiated approach.

Keywords: stratification, education, system, process, approach, teaching, student, vocational education, e-textbook, information technology in education, modern didactic tools, e-learning guide, e-book, electronic simulators, electronic practice

Introductıon

Establishing continuity and succession between the existing general education and vocational programs, and the development of vocational and career psychology skills for school graduates will require the young men and girls to differentiate education in order to determine their career paths, needs and aspirations. It is advisable to start differentiated education from the general education system.

Wide-ranging efforts are underway to accelerate the introduction of information and communication technologies in the global education system. The process of informatization of education is inseparably linked with the competence of teachers to educate young people who will secure the future of our country in the professional activity of information and communication technologies. This requires the development of technology for the creation and application of modern didactic tools for training future teachers. Numerous studies have been carried out by foreign and domestic scientists on the creation and application of modern didactic tools for training future vocational education teachers for professional work based on a differentiated approach.

Literature Review

On the problem of differentiated learning in the process of continuous education N.Kh. Avlyakulov, U.K Tolipov, G. Amirova, A. Bakirova, B.R. Kadirov, N. Shodiev, R. Musinova and others conducted their research [3, 20, 6, 8, 24, 23].

Formation and development of professional education, regularities and tendencies, problems of preparation of future teachers for professional pedagogical activity have been studied Sharipov, S.A Usmanov, I.B Askarov, Yu.K. Babansky, V.P Bespalko, and by others [22, 21, 5, 7, 11]. N.N Azizkhodjaeva, S Ziyamuhammedova, N. Saidahmedov have been doing research work on the use of pedagogical technologies in higher education institutions [4, 14, 18].

Theoretical and practical bases of using information technologies and modern didactic means of education have been studied by A.A Abdukadirov, U. Begimkulov, N.I Taylokov and others [2, 10, 19].

U.I.Inoyatov scientifically substantiated the theoretical and organizational methodological bases of quality control and management in vocational education institutions [15].

Q.T.Olimov's fundamental research investigated the theoretical and practical aspects of the creation of textbooks, the concept of creating a new generation of teaching and methodological literature, and the scientific and methodological recommendations for improving the quality of the educational process.

Problems of Integrated Approach to Teacher Training Studied by Abdukuddusov [1].
Educational scholar N.A.Muslimov studied the scientific and methodological foundations of the formation of professional pedagogical qualities in the future teacher of vocational education, and paid special attention to the issues of upbringing a creative person, who is committed to the universal and national values.

Research Methodology
The learning process is designed for students with a moderate level of knowledge, and should rely on the laws of the Republic of Uzbekistan on the National Program for Personnel Training and Education for the rational use of mechanisms for working with gifted youth in individual curricula.
The following types of differentiated learning are known:
 1. Abilities;
 2. Failures;
 3. Interests;
 4. Profession designing [23].
In the differentiation of abilities, students are grouped into one of the following skills.
 a) By general abilities
 b) By private activities.
In the first case, all students are divided into several groups based on the results they achieved last year. The first group includes the students with the highest scores, the second group includes the students with the lowest and average scores, and so on.
In the second case, students are grouped into one or another group of subjects according to their abilities. For example, in French lyceums (high schools) they are differentiated in the humanities, natural and mathematical, and technical skills. This is the main indication of the ability to study humanities (French, Latin, English). Students who are not in humanitarian classes are more or less voluntarily distributed between natural and mathematical and technical classes. Most importantly, the curricula and programs of the humanitarian, natural-mathematical, and technical departments vary greatly. This leaves no room for students to move from one section to the next.

Differentiated education in incompetence
Proponents of this type of differentiation of education usually do not use the term stratification. However, this does not change its essence. The essence of this type of differentiation is that students who are not able to master in one or another subject are grouped into classes with low and small levels of learning. In this type of differentiation, students do not receive the same information and do not have the same opportunity to continue their education.
Differentiation of incompetence is manifested in French schools. In these schools, students who have little or no learning ability are enrolled in a modern, non-Latin language, but a profound learning of mathematics. We read the humorous aspect of editorial nationalism in the pedagogical journal 'Edication National''. If a child is good at reading, it means he goes to the classroom. Whether he can master Latin, let him learn mathematics (as if a child has the ability to master Latin if he or she does not have the ability to master Latin). If he is not able to complete a modern department program, go to a technical college.

Differentiation of student learning
When a student's education is differentiated, classes of interest from a certain age, and sometimes even schools, are grouped in deeper ways. Classes and schools are now being introduced with a profound study of mathematics, physics, chemistry, humanities and biology.
This is stated in the section of the general secondary school of the Constitution of the Republic of Uzbekistan.
It is easy for parents, teachers, or students to observe students' interest in a particular field of study. A number of studies using different methodologies show that the majority of stagnant interest occurs in

students aged 14-15. At this age, it is advisable to start differentiated learning in the interests of students.

Differentiation by design profession

Typically, volunteers start to develop a particular interest in a particular area of knowledge, from one to another, from 14 to 15 years of age. By the end of Grade VI, at the beginning of Grade VII it is intended to choose a particular profession for life. The ability and abilities of the child (for example, painting, choreography, music, art, language learning, etc.) are clearly visible and developed.

In this case, a purposeful classification of the child should be organized in such a way as to maximize the abilities that the school presents.

A special school (painting, choreography, music, art, language learning, etc.) serves this purpose.

The curricula of these schools for non-profile subjects are the same as those of general secondary schools, and profound and extensive education is provided on the profile subjects. Students of this type of secondary school have a better chance of success in their independent work. It is necessary to create special conditions in schools for the development of abilities and interests of students of this type.

The functioning of these schools does not harm the public education system as they provide secondary education to their students, as is the case with regular secondary schools.

It should be noted that in recent years there are specialized sports schools for training high-class athletes in several foreign countries.

The need for differentiation of education also stems from the task of satisfying the interests of every citizen of society in a market economy. To the extent that a person is responsible for the quantity and quality of his work, society is also responsible for meeting the individual's interests that are not in the public interest.

Comprehensive development of the personality promotes the formation of self-sacrificing, creative, hardworking, socially active, spiritually and morally and physically developed person.

This fundamentally new task can be solved and successfully solved by the legal and democratic civil society, which is gradually developing in our country.

Lastly, it should be noted that the differentiation of education at the highest level of secondary education contributes to the presentation of gifted children and creates the most favorable conditions for their development. For a number of reasons, the school did not pay attention due to this important issue for a long time.

With the development of scientific and technical progress, our society will continue to grow in demand for highly qualified specialists who are well versed in the acquisition of new technology and modern technology.

The development of science and technology requires the training of more and more people to manage and use modern technology and advanced technology.

In the context of differentiating education, it is possible to organize student work professionally. It is important that vocational training is organized on the basis of pre-vocational training, on the basis of the subjects with which students have a well-developed interest.

Technology of differentiated learning

Differentiated learning is a form of organization of the learning process, which is based on a common didactic system that provides with the specialization of the learning process in homogenous groups of students. The differentiated method of training is to create different conditions for training in different homogenous groups based on a set of methodological, psychological and pedagogical and organizational measures.

The last level of training is individual learning (Figure 1).

General teaching		Teaching in homogenous groups (THG)	Teaching individually(TI)
			(TI)

	Teaching in streams and in groups.	(THG)	(TI)
			(TI)
			(TI)
		(THG)	(TI)
			(TI)
			(TI)

Figure 1. Different stages of learning

Currently, the training of future vocational education teachers in higher education institutions includes modern educational didactic tools, including e-books, e-books, electronic tasks, electronic simulators, electronic internships, e-books, electronic encyclopedias, automated control systems, e-learning methodologies and more. It is difficult to imagine without many other modern didactic means, such as these. Therefore, modern teaching didactic means are becoming increasingly important in modern vocational education.

The importance of modern didactic tools in vocational education is determined by the stages and levels of their application (Figure 2). At the first stage, modern teaching didactic tools are used as a means of addressing individual pedagogical tasks within traditional forms of teaching and teaching methods.
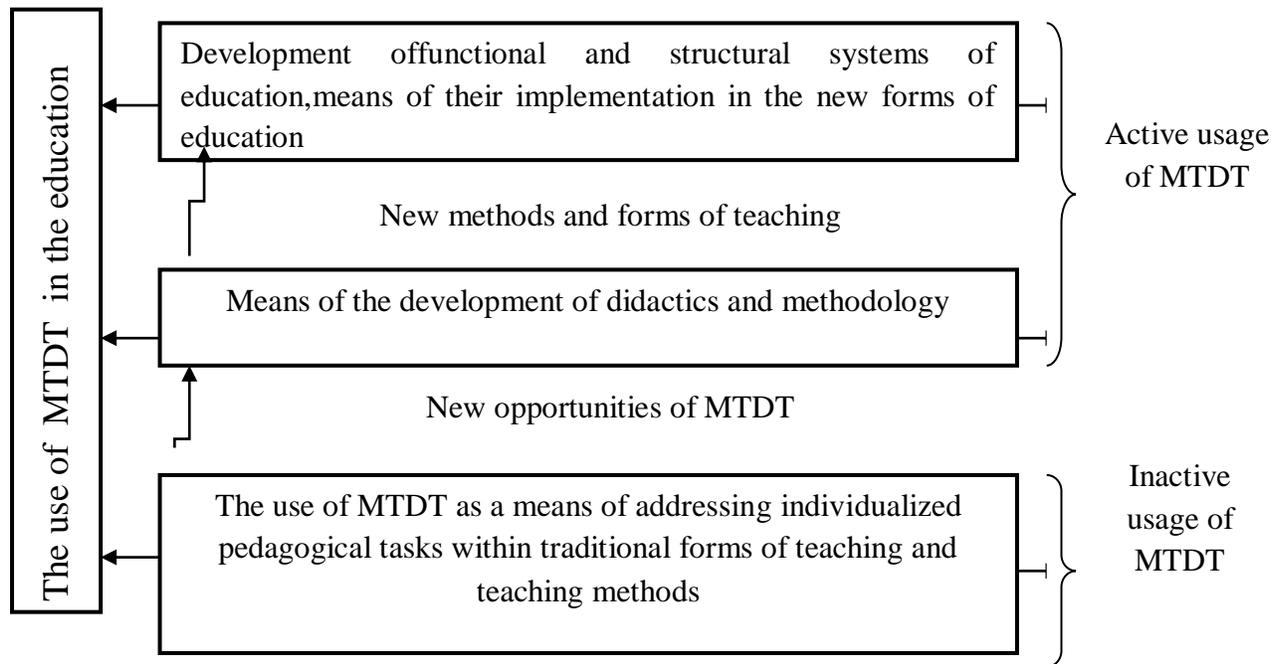
Figure 2. Steps of using MTDT

At this stage, modern didactic tools provide support for the educational process in parallel with other teaching and methodological tools. The role and function of modern didactic means are determined by the established principles of education. In other words, at this stage modern didactic means are used inactive, that is, they have little effect on the changes in the education system.

The active use of modern didactic tools in vocational education is evident in the second and third stages. This is determined by the fact that modern teaching didactic facilities provide new opportunities

compared to traditional teaching and methodological tools, and many existing functions are implemented with higher quality.

The main advantages of modern teaching didactic facilities are the following: Creation of conditions for independent learning (independent learning) of learning material, allowing the learner to choose the place and time of study with the appropriate didactic means; Creation of conditions for deeper individualization of education and its variability (especially modern educational didactic tools adapted to the current level of training and interest of the learner); ability to work with models of studied objects and processes (including models that are difficult to identify in practice); the ability to present and interact with 3D virtual images of the studied objects; provision of unique information materials (photos, manuscripts, videos, sound recordings, etc.) in multimedia form; possibility of automation of control, more objective evaluation of knowledge and skills; the ability to automatically generate a number of repetitive tasks for controlling knowledge and skills; ability to search information (hypertext, hypermedia, automated indicators, keyword search, search throughout the text, etc.); possibilities for effective use of advanced psychological and pedagogical methodologies (forms of game and competitive training, experimentation, "diving" in virtual state, etc.).

The above considerations characterize modern teaching didactic means in a didactic and functional way.

The technological advantages of modern didactic facilities include: increased speed of development; easy to upgrade, easy to develop and duplicate copies, easy access to the internet and quick distribution.

The importance of active use of modern teaching didactic tools in education is that they are not only used as tools for solving specific pedagogical tasks, but also give impetus to the development of didactics and methodology, and create new forms of teaching and learning. Distance learning is developing rapidly as a result of the widespread use of Internet technologies. It will stimulate the development of multimedia, computer graphics and simulation systems, as well as methods and algorithms for digital data compression, and the development of training techniques that will be used to "penetrate" virtual reality simulations of professional activity. In addition, the creation of a computer network simulator class allows for the development of training methods in the form of business and competition games (although professional competitions and business games have been used for professional training and, but modern training and didactic tools greatly improve the quality of their organization and conduct).

Modern teaching didactic means are crucial in the development of methodology and didactics. Teaching and learning process as a result of using modern teaching didactic tools (improving the quality of education; reducing the costs of organizing and conducting educational activities; redistributing teaching and methodological tasks, preparing non-standard teaching tasks, working with students, etc.) the provision of tools is fast.

Reduction of the cost of education is due to: imposing some of the teacher's tasks (such as the provision of basic training material, the preparation and verification of multiple control tasks, the current assessment of students' knowledge, skills, etc.) in modern teaching facilities; Reduce the need for printed, educational and methodical aids; Reduction of load on logistical support of the educational process (buildings, laboratory equipment, etc.); Reduce the cost of travel to the venue for educational activities and more.

It is clear from the above that in the modern system of education, when there is a need to choose specific teaching methods, modern teaching didactic means are given priority over traditional teaching methods. However, this priority does not mean that modern teaching didactic means completely suppress or replace traditional teaching tools. Modern didactic means have their drawbacks as well. These include: the need to have appropriate software and computer skills to work with modern teaching didactic tools; the complexity of perception of large amounts of text on a computer screen; insufficient interaction of modern teaching didactic facilities; Lack of direct and regular monitoring of the implementation of the curriculum. These disadvantages are of an objective nature. Unfortunately, these include subjective disadvantages as a result of the conceptual ambiguities that the creators make in the design of modern teaching didactic tools. Therefore, it is desirable to integrate modern teaching didactic tools into the learning process using traditional teaching and methodological tools.

In addition, many modern didactic teaching tools address local, specific topic questions and concerns.

Complex modern didactic tools or their integrated packages, modern teaching didactic materials that cover the course material or the content of several related courses are rare. The content constraint reduces the use of modern teaching didactic facilities. Currently, they serve as auxiliary teaching and learning tools that can be used for some laboratory work and practical exercises.

The main reason for the conceptual errors in the creation of modern teaching didactic tools is their narrow application as an electronic analogue of appropriate traditional teaching methods. Finally, it is important not only to provide modern teaching didactic tools, but also to ensure that developers are ready to respond quickly to changing educational needs - that is, to create and deliver high quality modern didactic tools for the market. Such training requires the availability of software invariance and the recognition of most developers of modern teaching methodologies for didactic tools. One of the obstacles to its development, as mentioned above, is the insufficient use of modern teaching didactic means in traditional education. The reason for this is that teachers are not only well aware of the possibilities of modern teaching didactic tools, but also need to master the technique of their use. Teachers should develop and use new pedagogical techniques that focus on the independent work of learners based on modern teaching technology. Fulfillment of these conditions will lead to more and more dissemination of modern teaching didactic tools aimed at self-education and filling the gaps in traditional education.

In practice, various types of modern didactic tools are used in the learning process. This requires knowing how to apply them together.

So far, there has not been a single view on the classification of modern teaching didactic devices and, therefore, their overall system has not been developed. There are different opinions on the definitions of modern teaching didactic means. Modern educational didactic means are aimed at solving special pedagogical tasks, which is the main task of the effective organization of the educational process.

The main pedagogical tasks, which are solved using modern educational didactic means, are:

 1) Acquaintance with the software, learning its basic concepts;

 2) Basic training at different levels;

 3) Acquiring skills and practical skills of solving practical tasks in specific software;

 4) The ability to analyze and make independent decisions in non-standard situations;

 5) developing skills in specific activities;

 6) carrying out educational research experiments with models of studied objects, processes and environment;

 7) restoration of knowledge, skills and abilities (for rare cases, tasks and technological operations);

 8) Monitoring and evaluation of knowledge and skills.

Despite the integral nature of the tasks mentioned, their solutions affect each other. Therefore, modern types of didactic means are often grouped into groups of correlated tasks, rather than specific tasks. The description of modern teaching didactic facilities is shown in Figure 3 [9].
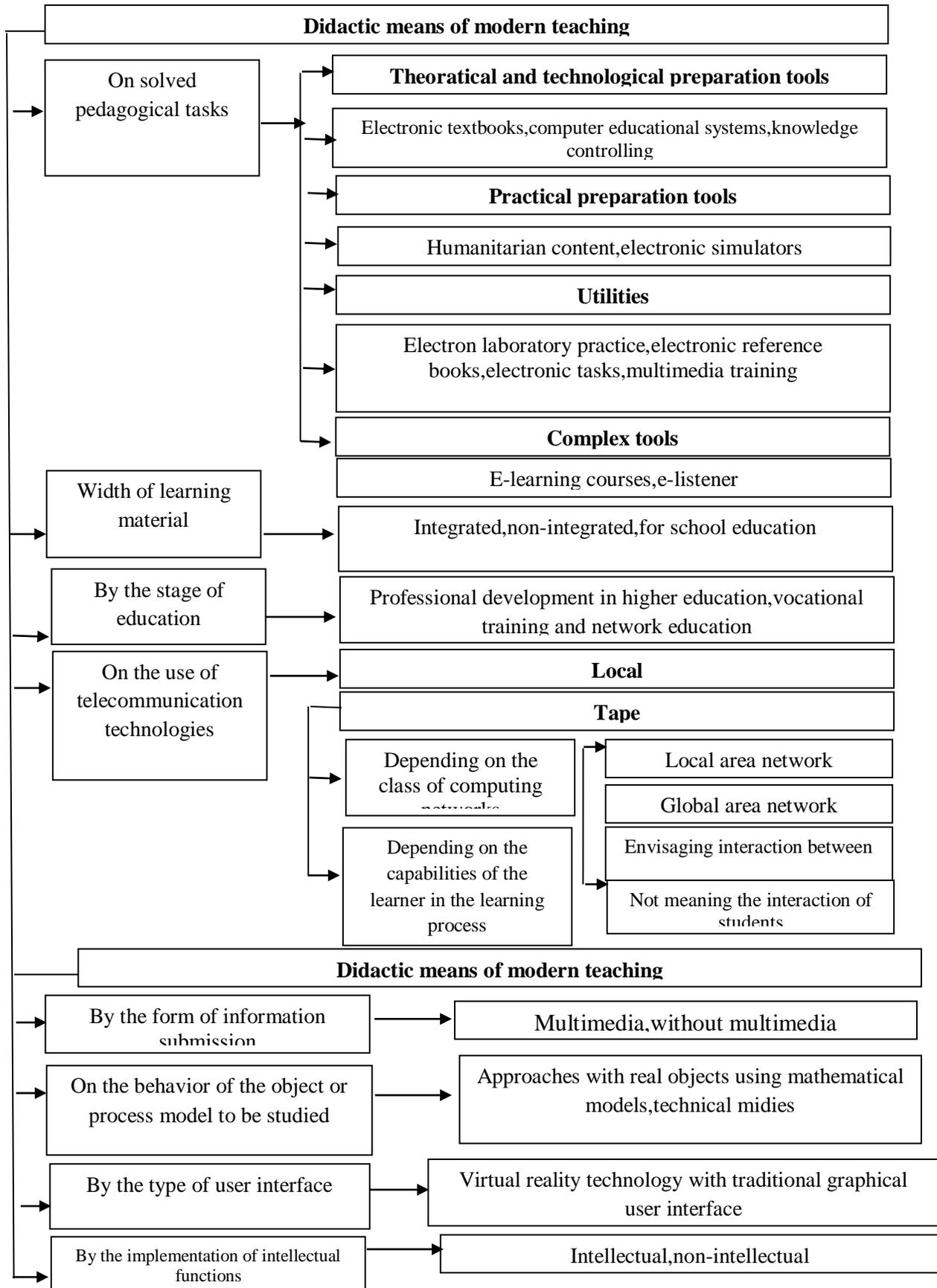
Depending on the pedagogical tasks to be solved, modern teaching didactic facilities are divided into four classes: theoretical and technological preparations; practical training tools; utensils; complex tools.

The first class includes the following modern didactic tools:

Electronic textbooks are modern didactic tools for basic training in a specific course (subject), which is characterized by relative content and provided in textbook form.

Computer training system is a modern educational didactic device designed to support one or more sections (subjects) of a course (computer), computer control system of knowledge, level of knowledge of a certain subject, course, section, subject or software.These didactic tools are designed to identify and evaluate specific training needs.

Practical preparations class includes the following two types of modern didactic tools.

Didactic means of modern teaching	

On solved pedagogical tasks	**Theoratical and technological preparation tools**
	Electronic textbooks,computer educational systems,knowledge controlling
	Practical preparation tools
	Humanitarian content,electronic simulators
	Utilities
	Electron laboratory practice,electronic reference books,electronic tasks,multimedia training
	Complex tools
	E-learning courses,e-listener
Width of learning material	Integrated,non-integrated,for school education
By the stage of education	Professional development in higher education,vocational training and network education
On the use of telecommunication technologies	**Local**
	Tape

Depending on the class of computing networks	Local area network
Depending on the capabilities of the learner in the learning process	Global area network
	Envisaging interaction between
	Not meaning the interaction of students

Didactic means of modern teaching	

By the form of information submission	Multimedia,without multimedia
On the behavior of the object or process model to be studied	Approaches with real objects using mathematical models,technical midies
By the type of user interface	Virtual reality technology with traditional graphical user interface
By the implementation of intellectual functions	Intellectual,non-intellectual

Figure 3. Classification of MTDT

Electronic Problems or E-Practicalum is a modern educational didactic tool designed to develop skills and competencies in dealing with exemplary practical issues.

Electronic simulator is a modern educational didactic tool designed to develop skills and skills related to a specific activity.

Auxiliary tools include modern teaching didactic tools that allow them to address theoretical, technological or practical training issues but are not sufficient to achieve specific goals independently. This class of modern didactic tools combines the following types.

Practical preparations class includes the following two types of modern didactic means.

Electronic Laboratory Practice - a modern educational didactic tool designed to support automated laboratory work. Within these frameworks, the objects, processes, and models of activity environments are studied using experiments.

Electronic reference - modern educational didactic means, containing reference booklet (information base) on a certain subject, course, subject or software and providing its use in the learning process.

Multimedia training is a modern teaching didactic tool which is the main content of a specific teaching activity or event (lecture, seminar, demonstration).

The classroom of integrated tools includes a number of modern teaching didactic tools that cover a wide range of pedagogical issues:

E-learning course - modern educational didactic tools for training on a specific course (science), which integrates functions and tools to solve theoretical, technological and practical issues.

Electronic Recovery Course - is designed to restore knowledge and skills within a specific course that supports the integration of functions and tools at various stages of the professional development process.

At the same time, there are other complex tools that are not listed in the classification scheme. They either combine different types of modern teaching didactic tools or perform specific functions. Such tools include simulators, training systems and other tools. Integrated modern didactic tools include a large amount of learning material or combine several types of modern teaching didactic tools.

As it turns out, the development of complex or integrated modern teaching didactic means is directly linked to the increase in the volume of teaching materials or the creation of software packages that include several modern didactic tools.

The combination of modern didactic tools in various forms is the result of a combination of tools. The combination of modern didactic means of the same type will create an integrated tool. The concept of a software package does not mean a mechanical combination of tools. The complex should provide centralized management of the learning process as a holistic system and synchronized use of the modern teaching didactic tools within its system.

Electronic textbooks.According to L.Kh. Zaynutdinova, the e-textbook is a complex educational software system that provides continuity and completeness of the didactic cycle, providing theoretical material, and providing functional functions in the context of simulation and simulation modeling and interactive feedback through computer visualization [13].

According to N.A. Muslimov, the introduction of e-textbooks and each section of the textbook must be preceded by an introduction. It should fully reflect the general composition, components and interrelations of science [16].

Electronic textbook is the basis for the electronic educational methodical complex. E-textbook is an integral part of the e-learning methodological complex. The technology of designing and using e-learning methodologies is discussed in more detail in Chapter Three.We used the structure of the electronic textbook proposed by N.A. Muslimov (Figure 4).
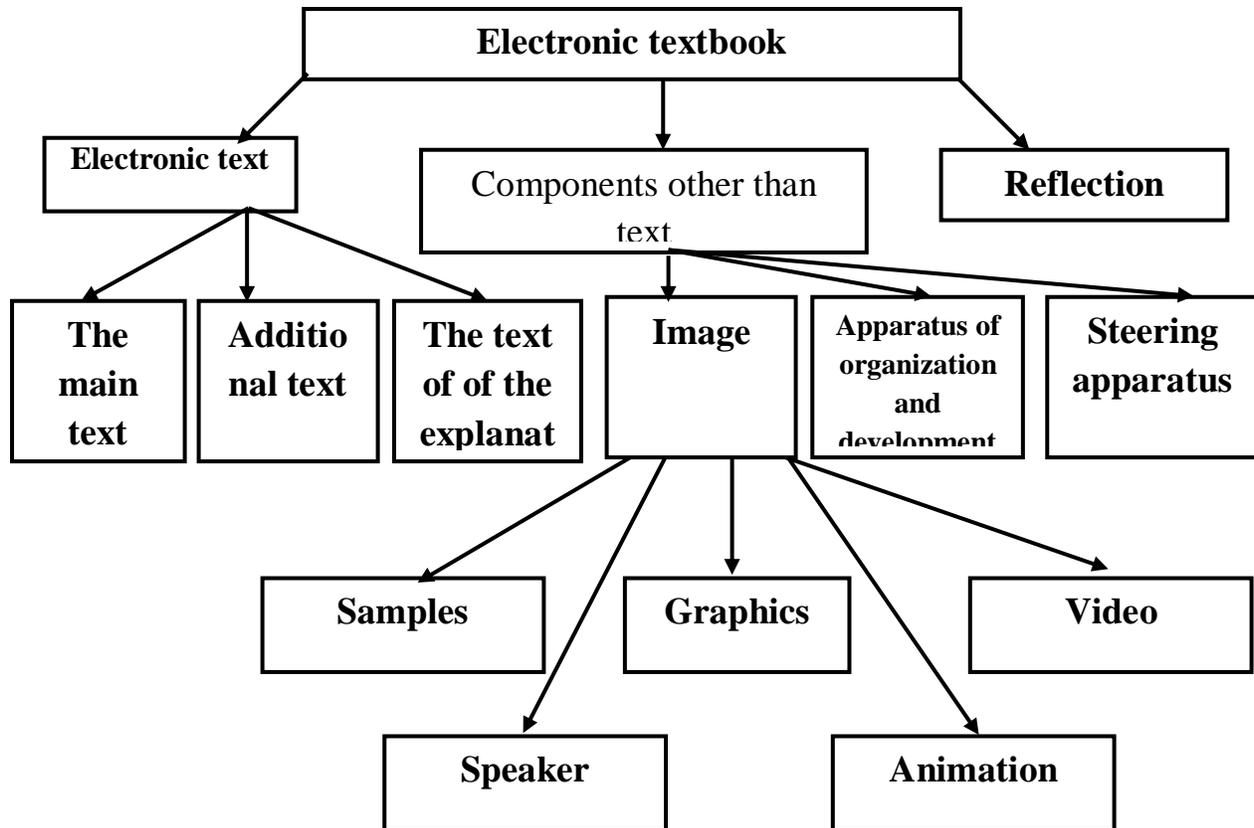
Figure 4. The structure of the electronic textbook

One of the main pedagogical problems today is to prepare future vocational education teachers with modern teaching didactic tools for practical use, not only for literacy, knowledge, but for creative use. The main tool for shaping such training is the selection of practical issues, which explains that the selected practical problem allows the student to integrate various components of the acquired knowledge (methodological, theoretical, technological) and to reflect them in practical and practical terms. The training will act as an intermediate link between the independent use of didactic facilities. In addition, the practical problem is the ability to master professional activities, taking into account the use of modern didactic facilities in a particular situation. The solution of practical problems and tasks by future teachers of professional education can be considered as one of the didactic means of developing readiness to use modern teaching didactic means in professional activity.

Therefore, one of the main problems today is to prepare future vocational teachers for the creative use of modern teaching didactic tools for practical issues.

In an age where information is expanding and concentrating, it is important to systematize and use knowledge effectively. The following models of describing the knowledge that is currently used in professional practice as 'compressed' and compact are the following: logical model, frame model, and semantic network model.

An analysis of developments in the use of 'compressed' academic information in general science disciplines has shown that the textbook is compiled as a summary of short lectures.

Some of the manuals outline the basic concepts of courses in sections and are presented electronically.

Studying the practice of graduates of vocational education, we have come to the conclusion that the system of knowledge and skills acquired in higher education institutions in the use of modern teaching didactic means does not apply to professional issues. Pedagogical activity, which has sufficient training in

the field of information technologies, is reproductive. Analyzing this, educational institutions (secondary schools, vocational colleges) often conclude that teachers' experience in using modern teaching didactic tools in their educational activities is not often required because many graduates do not have the motivation to study and apply it in practice.

In the educational process we have organized, the focus will be on creating a positive internal motivation for the future teacher to acquire knowledge and skills in the use of modern teaching didactic tools in the teaching activities of a future teacher. In addition, cognitive motivation is seen as a specific motivation for creativity. Therefore, its formation is a prerequisite for the development of the creative activity of the teacher of the future vocational education in the educational, research and research and pedagogical activity. Thus, one of the most important and important issues is to identify and develop cognitive motivations that will affect all areas of future vocational education.

We use modern teaching didactic tools to pedagogically diagnose cognitive motivations of a future vocational teacher. This approach provides a comprehensive overview of the cognitive activity that is most commonly encountered in a future vocational education teacher, providing a broad basis for the choice of ways and means of influence on the need for knowledge.

Motivation to pursue a career at the highest level includes internal factors such as preparation for the use of modern achievements in the field of modern didactic means, acquiring sound professional knowledge and practical skills, interest in knowledge, and aspiration for professional training using modern teaching didactic tools.

The results of our research show that no matter how talented or talented a student is, he or she will not succeed without the willing and motivated teaching.

Thus, the activeness of the future vocational teacher, as well as the development of the teaching material, is largely dependent on his motivation.

In the course of our research, we were guided by the following principles of motivating knowledge and skills: a high level of preparation for the profession, including the use of modern teaching didactic means; - to use modern achievements of science and technology, to acquire knowledge and practical skills in the use of modern didactic means in the educational process; Formation of professionalism at the graduate; high level of training in the use of modern didactic means in professional activity, increase of personal competitiveness of the future specialist.

Motivation is a motivating factor for a future vocational education teacher. Interest is inextricably linked to the emotional attitude of the subject to the student's knowledge. Professional motivations and interests provide the future professional education teacher with the knowledge and skills appropriate to his or her professional career.

In the course of the research, we concluded that the diagnosis of motivation is the basis for the successful formation of professional knowledge and skills. Diagnosis includes the following dimensions: changes in the purpose of reading, the formation of attitudes in various learning activities in students, enhancing the meaning of reading, the formation of professional interest, motivation and need. In our view, it is advisable to use a variety of computer tests aimed at diagnosing the motivation level of the learner.

Modern information and communication technologies provide educators with a wide range of opportunities to create and modify modern teaching didactic tools. Until recently, a special group of programmers, designers, psychologists and others was involved in the creation of such tools. The emergence of automated complex programs (author systems) in recent years has made it possible to create many such tools.

Given the different approaches to modern pedagogy - psychology and didactics, we have identified the process of developing technology for creating and utilizing modern teaching didactic tools in the preparation of future vocational education teachers as a cohesive motivational, value, cognitive and operational learning component.

The motivational and value component reflects the students' commitment to using modern didactic tools in their future professional activities, the need for learning about their creation, their motivations, aspirations, abilities and interests. The cognitive component reflects the students' knowledge of the possibilities of practical and instrumental software tools used in the creation of modern educational

didactic tools, the degree of theoretical training for creating modern didactic tools. The operational-functional component includes the complex knowledge, skills and personal qualities needed to create modern didactic tools.

The basics, ideas, principles and conceptual structure of the development of technology for the development of modern didactic tools in the methodical system of training of teachers of vocational education were defined, computer tools of training were classified according to the pedagogical tasks.

The basic principles of the organization and management of training, is the basic principles of didactics, are the basis for the creation and application of modern teaching didactic tools. These complex systems include: the organization and management of the educational process; the theory of registration and coding of information; transfer of part of the information function of the teacher to the computer equipment of the training, and most importantly, control of the cognitive activity of students with automated systems.
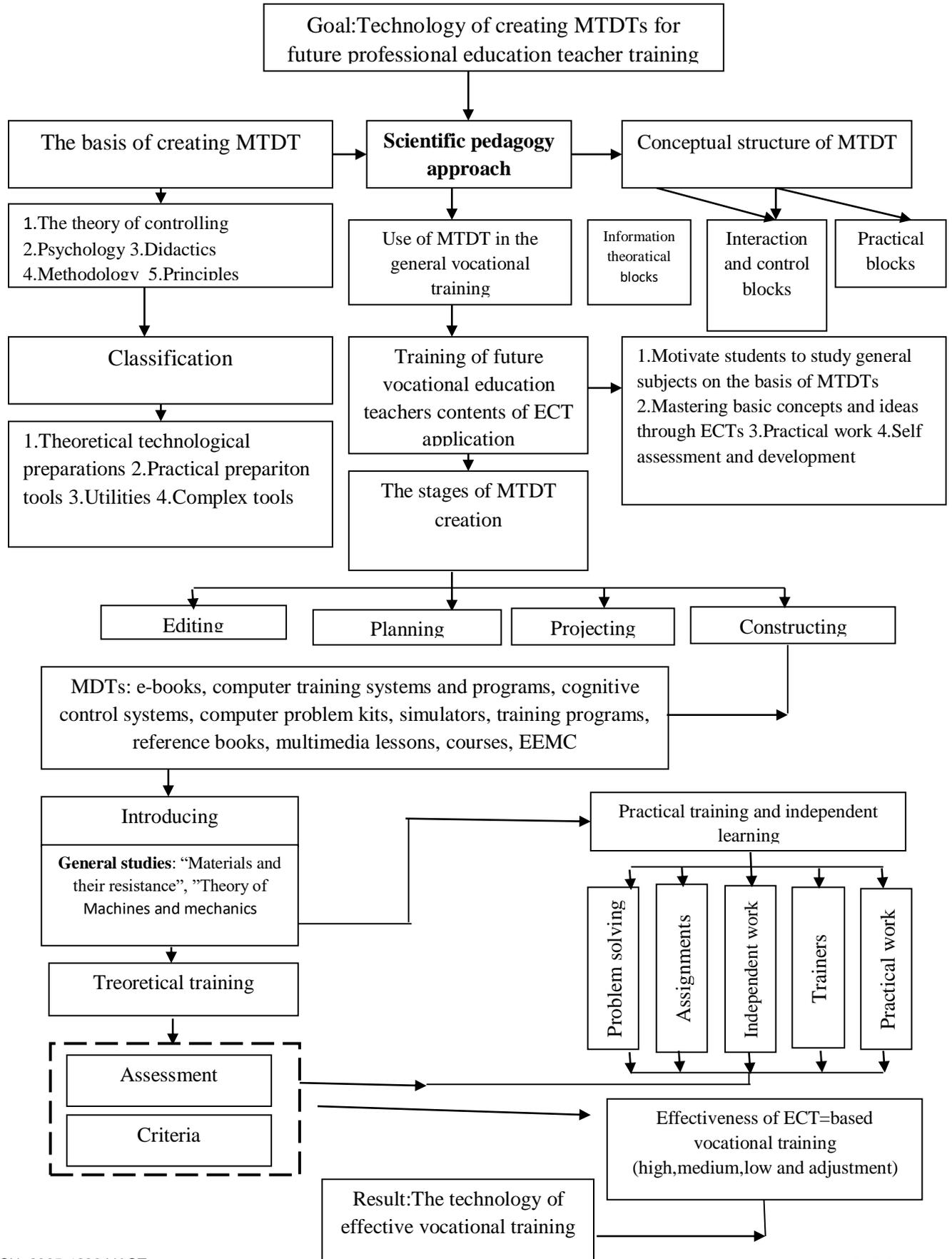
The following stages of technology for creating modern teaching didactic tools to improve the quality of future vocational training teachers have been identified: problem analysis; planning; design; construction; implementation and evaluation. Relied on the basics, ideas, principles, stages, and conceptual structures of computer-aided learning tools in developing technology for the development of modern didactic tools (Figure 5).

Stage 1: Analysis of the problem. At this stage, the concept and shell of modern teaching didactic tools will be formed. The rational use of modern teaching didactic means to determine what training, skills and abilities should be mastered and why. In formulating the learning objectives, the role and place of modern teaching didactic tools in the system of preparing future vocational education teachers for professional activities should be taken into account. Information and communication technologies require a high degree of accuracy and uniqueness, so modern training must meet the requirements of didactic tools, first of all, diagnostic and instrumental.

In order to successfully complete this phase, it is necessary to determine who will be using modern didactic means, ie the contingent of users. And the contingent of users is defined by the following parameters: objects of future professional activity; future professional activities; age, education level and so on.

Stage 2. Planning. At this stage the content orientation, main functions and essential characteristics of modern teaching didactic means are defined, didactic and program-technical decisions are made. To achieve this goal the psychological and pedagogical function of teaching, which determines the didactic method is formed. The form and format of the presentation of the study material were also selected. Text and hypertext, graphics and hypertrophy, video, animation, sound, interactive three-dimensional images can be chosen as format and format of presentation. Forms and formats of information presentation are selected based on the capabilities of the instrumental tools planned to be used in the development of modern educational didactic tools.

At this stage, the selection of strategies and tools for controlling the cognitive activity of the learner will be carried out, namely: the choice of content and issues of particular difficulty for independent learning; differentiated management regimes (when the learner receives advice or instruction from the teacher about the learning process); rigorous management of the educational process through modern teaching didactic means.

Goal:Technology of creating MTDTs for future professional education teacher training

The basis of creating MTDT

Scientific pedagogy approach

Conceptual structure of MTDT

1.The theory of controlling
2.Psychology 3.Didactics
4.Methodology 5.Principles

Use of MTDT in the general vocational training

Information theoratical blocks

Interaction and control blocks

Practical blocks

Classification

Training of future vocational education teachers contents of ECT application

1.Motivate students to study general subjects on the basis of MTDTs
2.Mastering basic concepts and ideas through ECTs 3.Practical work 4.Self assessment and development

1.Theoretical technological preparations 2.Practical prepariton tools 3.Utilities 4.Complex tools

The stages of MTDT creation

Editing

Planning

Projecting

Constructing

MDTs: e-books, computer training systems and programs, cognitive control systems, computer problem kits, simulators, training programs, reference books, multimedia lessons, courses, EEMC

Introducing

General studies: "Materials and their resistance", "Theory of Machines and mechanics

Practical training and independent learning

Problem solving

Assignments

Independent work

Trainers

Practical work

Treoretical training

Assessment

Criteria

Effectiveness of ECT=based vocational training
(high,medium,low and adjustment)

Result:The technology of effective vocational training

Figure 5. Technology of creation of MTDT

Management strategies have a direct impact on the level of autonomy of the learner and the interaction between the learners and the modern teaching didactic means. Therefore, interactive learning is one of the most important aspects of developing technology to create didactic tools. modern didactic tools provide a verbal and nonverbal educational dialogue between man and computer. The choice of strategies for managing cognitive activity in the electronic environment requires the analysis of the technological block, which is planned to use modern educational didactic means. In our opinion, the characteristics of the technological unit directly affect the content and structure of modern teaching didactic means.

Stage 3. Designing. At this stage, the structure and components of the modern teaching didactic tools will be identified, which will clarify the content and content of the educational material and training issues to be placed, and the feedback template, interface and navigation sketches.

1. The information block (access module) contains the information included: the working curriculum of the subject, the schedule of educational activities, the list of basic and additional literature, links to Internet resources, glossary, and others. This block aims to create the basis for learning matrices and learning material.

2. Practical (practical module) for developing theoretical knowledge and skills using theoretical (lecture with description of audiovisual information), practical (examples of tasks) and analysis of the most common mistakes presented in the content-methodical block (main module)), methodical (instructions for studying theoretical material, practical, laboratory, independent and course work (projects)), as well as materials At contains guidelines for the implementation of the materials.

This block is aimed at familiarizing students with the theoretical materials of the studied subject and providing them with practical training.

3. The control block contains materials for the organization and conduct of current, intermediate and final rating controls. This block is aimed at checking the theoretical and practical implications of the learning material as well as replenishing the acquired knowledge.

The technology of creating modern didactic tools includes many stages, and during their implementation a separate component or component system is developed. These stages may be based on the components of modern teaching didactic tools or the initial design process. As a rule, the creation of high quality modern didactic tools largely depends on the proper separation of technological stages.

When separating the technological stages of the development of modern educational didactic tools, it is advisable to consider the following components: annotation; syllabus (purpose, objectives, content, thematic plan); text of the textbook (structured, built with consideration of ergonomic requirements); illustrative materials (descriptive, logical and structural, multimedia - screenwriting scenario); a list of recommended basic and additional literature on all topics included in modern teaching materials; a separate subject and a glossary of terms and concepts throughout the course; chrestomatology and additional materials (books, list of regulations); methodical recommendations on studying UST subjects using modern didactic means and organization of independent work of students; instruction for teachers and trainees on working with modern teaching didactic means.

Step 4 Implementation and outcome evaluation. At this stage, the experimental training will be conducted using modern teaching tools to evaluate the quality of didactic facilities. The results are processed using mathematical - statistical methods. The shortcomings of modern teaching didactic tools are revealed during the experimental work. Methodical recommendations will be developed for teachers and students on the use of modern educational didactic tools in the educational process, and documentation for practical use will be developed.

Analysis and results

During the research, special attention was paid to the organization of experimentation studies of vocational college teachers, including students studying in the fields of higher education, based on the theoretical foundations of the process of preparing for professional activities.

The experimental training and evaluation of the effectiveness of teaching methods of general professional education using modern didactic tools were carried out in the direction of Tashkent State Technical

University (TSTU), Fergana Polytechnic Institute (FerPI), Bukhara Engineering-Technological Institute (BETI).

The selection of educational institutions was based on the following factors. This will support innovative developments in higher education institutions in the development and use of modern teaching didactic tools to improve the process of preparing vocational education teachers for professional activities; they have a material base and pedagogical conditions, and they have sufficient computer skills.

The experimental work was carried out in three phases, from 2017 to 2020. A summary of the stages of the trial is presented in Table 1.

Table 1
General description of the stages of experimental work

№	The name of the stage	Years	The experimentation area	Number	Methods
1.	1- stage grounding stage	2017-2018 years	TSTU	43 students, 4 teachers	Application form
			BEPI	45 students,6 teachers	
			FerPI	47 students, 5 teachers	
2.	2 – stage formative stage	2018-2019 years	TSTU	47 students, 5 teachers	Application form,testing,analysis of experimental test materials
			BEPI	43 students, 5 teachers	
			FerPI	55 students, 5 teachers	
3.	3-stage iterative stage	2019-2020 years	TSTU	50 students, 6 teachers	Comparision analysis
			BEPI	42 students, 4 teachers	
			FerPI	45 students, 3 teachers	

The following were identified during the experimental work: students' motivation for learning activities; acquisition of knowledge and skills by students on general professional subjects; to apply the acquired knowledge and skills in general professional subjects; residual knowledge of general professional subjects; the attitude of students to the study of general professional subjects.

 - the status of training of future vocational education teachers in the specialty 5140900 "Vocational education" was checked; analysis of the state of readiness of graduates in the above-mentioned institutions of professional education;

 - mentioned above in the study of general professional subjects

 studied and summarized pedagogical experience of teachers in the use of information and communication technologies in higher education institutions;

 - interviews and questionnaires with teachers of vocational training, who have and have no experience in the use of computer and modern teaching aids in the learning process, as well as students of vocational training;

 - The structure and principles of the choice of the content and methodology of the use of modern teaching didactic means in the preparation of future vocational training teachers for professional activity are developed and implemented.

In the experimental group, 198 students in the control group and 212 in the control group determined the initial level of preparation.

 Table 2 shows the baseline readiness of contingent trainees.

Table 2
Characteristics of initial contingent preparation of students (in%).

Groups	Unity	Level of assimilation			Approach to new information technologies		
		Low (2-3 points)	Average (3-4 points)	High (4-5 points)	Positive	Neutral	Negative

Experimenta tion	Peo ple	36	106	56	127	48	23
	%	18,2	53,5	28,3	64,2	24,2	11,6
Control	Peo ple	40	108	64	138	54	20
	%	18,8	50,9	30,2	65,1	25,4	9,5

Uniformity of the information being investigated, that is, the didactic tasks assigned to both groups was a constant condition for the experiment.

Learning theoretical material in the experimental groups was based on the modern teaching didactic tools created by the author on the subjects of general vocational training, and the activity of the teacher was to explain the content of visual materials in modern teaching didactic tools and to monitor students' cognitive learning activities.

In accordance with the objectives of the learning process and the specifics of the study subject, students used the following forms of textual information and visualization: virtual models (equipment, details, equipment, machinery); imaginative (images, photos); characteristic (kinematics, schema, tables), data system. After the study of specific topics the level of knowledge acquisition was determined by the test.

If the level of knowledge is sufficient (more than 70%), modern didactic tools will allow the student to explore the next subject in the laboratory, to do laboratory work or integrative tasks.

Laboratory-practical work is carried out in the virtual mode with the use of modern didactic means. After mastering the skills in the virtual environment, the student was allowed to work in a teaching laboratory with real equipment. If a student misses a lesson or does not fully master some of the learning material, the learning process is available on the server of the university.

Unlike the students of the control group, they performed integrative tasks that provided them with the skills of independent teaching using modern didactic means, seeking the necessary knowledge, forming the need for cognitive activity, and solving professional and pedagogical tasks. The work done with the use of modern didactic tools in the study of the creation of "Electronic textbooks" aroused great interest among the experimental students and was approved by the teachers of the subject.

Traditional tests were used to control the assimilation of knowledge and skills, which were applied after the study of specific subjects in the subject.

Experiments and control groups were similar to the tests offered and were introduced at the same stages in the study material. They were presented electronically as one of the modules of modern didactic tools, and the control group was given tests in paper form. Examples of these tests can be found in Annex 6.

If any of the above-mentioned criteria is inadequate, the modern curriculum designed to train future vocational education teachers is ineffective. It requires revision and adjustment of modern teaching didactic tools.

The coefficient of learning material is calculated by the following formula:

$$K_{\breve{y}3} = \frac{I_T}{I_{ym}}.$$

Thus, $K_{\breve{y}3}$ - coefficient of learning material; I_T - number of correct answers; I_{ym} - total number of questions asked.

Stability coefficient of learning material
by the formula:

$$K_M = \frac{J_T}{J_{yM}}$$

Thus, K_M - coefficient of learning material; J_T - number of correct answers in testng; J_{yM} -total number of questions asked.

The results of calculating the absorption coefficient and the coefficient of assimilation of the learning material are graphically illustrated (Figure 3), recalculated on a five-point mastering scale (Figure 6).
The results of calculating the coefficient of assimilation and the coefficient of assimilation of learning material

Groups	Assessment scale				
	1	2	3	4	5
Experimentation group	21,6	25,4	53	19,7	20,2
Controlling group	31,2	35,8	36,4	30,7	25,6
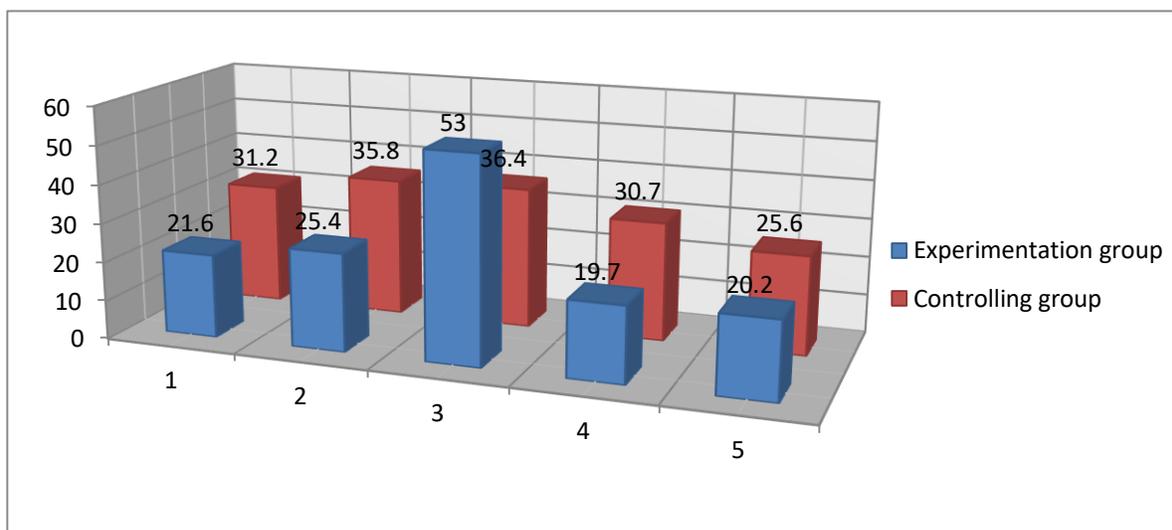
Figure 6. The results of the final test

We evaluated the results using the statistical analysis method. One of the most important issues in psycho-pedagogical research is to determine the statistical significance of the results obtained.
The proposed methodology allows to integrate modern professional and methodological knowledge and skills while simultaneously training specialists in accordance with modern requirements. Effective teaching of general professional subjects, especially in higher education institutions, taking into account the latest achievements in technical sciences is an important factor in the preparation of qualified professional teachers.
The results of the research were introduced to the training of future vocational training teachers in the directions of "Vocational education" of the Tashkent State Technical University, Fergana Polytechnic Institute, Bukhara Engineering-Technological Institute. The results of the research can be used in the development of modern teaching didactic tools in the subjects of the cycle and in the system of training of future vocational training teachers.

Conclusion

The scientific basis of the methodology of using modern didactic means of training the future vocational teacher training system for professional activity is a differentiated approach. Differentiation is reflected in the unity of students' professional and methodological training. Implementation of differentiated training is based on performance of various tasks and adherence to organizational and methodological conditions (need, motivation, information, cognitive independence, control and diagnostics). The methodological possibility of modern teaching didactic means is that it provides variants of teaching and learning tools for students. As a result, a future professional education teacher will have a holistic view of the use of modern didactic means of teaching in professional activities.

The use of modern didactic tools in the process of preparing a future professional teacher for professional activity will improve the learning process, have a positive impact on the emotional and intellectual field of students, and enhance the effectiveness of the teacher's professional activities. All of this demonstrates the benefits of modern didactic teaching in relation to traditional teaching, and the fact that it is developed and practiced in general professional disciplines confirms the effectiveness of modern teaching didactic tools.

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