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Didactic Tools In The Formation Of Professional Competence

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Abstract: In this article, researches and data are presented about the development and use of education with the help of information technologies and didactic tools in the educational process. To organize teaching with the help of information technologies and didactic tools in the educational process, to analyze the theory and practice of using information technologies and didactic tools in teaching, to determine the psychological and didactic approaches of using information technologies and didactic tools in classes the need to sharply increase the quality and efficiency of training teachers who have a new secular mindset worthy of the formation and requirements of society was determined.

Keywords: Information technologies, didactic tools, computer multimedia, Internet technologies, computer literacy, informatization of education, professional competence, psychological and didactic approaches, methods of using technologies and didactic tools, new information environment, information educational environment, computer programs, knowledge and skills, interactivity of material, multimedia of material, hypertextuality of material, automated learning system.

Introduction: Make the improvement of the qualifications of pedagogical personnel and their retraining one of the urgent tasks of today. Nowadays, young people who are thirsty for knowledge are striving to acquire independent knowledge, making effective use of the achievements of scientific and technological progress. In the process of creating wide opportunities for educated young people, organizing education with the help of information technologies and didactic tools is one of the most convenient ways of acquiring knowledge. Therefore, the development of education with the help of information technologies and didactic tools, their use in all types of education will lead to great achievements in the field of education.

Due to the development of science and technology, the amount of information that needs to be provided to students is increasing exponentially. Delivering this information to students using traditional methods and tools remains a complex task. Today, teaching using information technologies and didactic tools is one of the most necessary tools in the process of providing knowledge to students, and great achievements are being made in this area on a global scale [1].

One of the most important issues in the informatization of modern society is the use of information technologies and didactic tools in education.

information technologies and didactic tools is to ensure that materials that are difficult to visualize and visualize when using other teaching methods are understandable. With the help of information technologies and didactic tools, information can be presented to students in a graphical mode in the form of computer multimedia.

the rapid introduction of information technologies and didactic tools into education, and the computerization of the educational process, have become a key issue at present.

The National Program for Personnel Training addresses the issue of widespread use of information technologies and didactic tools in the educational process. It also emphasizes the urgent issue of training personnel in the field of information technologies and informatics, including the widespread use of Internet technologies in all areas.

In Uzbekistan, issues such as the further development

of information and communication technologies, their application in every sector, and increasing the computer literacy of specialists are being addressed in accordance with the needs of the time.

After the Republic of Uzbekistan gained independence, along with many other areas, major changes took place in the field of education. In this, a new education system was developed, taking the educational systems of developed countries as a model, in accordance with the capabilities and achievements of our people. It was substantiated that the creation of a modern information technology environment of a pedagogical educational institution is an objective necessity, the methodological foundations of its development were created and its components were formed. The main goal of informatization of education was the formation of professional competence of teachers and the need to sharply increase the quality and efficiency of training teachers with a new worldview that meets the requirements of society, based on the use of new information technologies and didactic tools in education.

The following tasks were identified in developing a methodology for using information technology in school mathematics lessons:

1. Analyze the theory and practice of using information technologies and didactic tools in teaching students mathematics, identify psychological and didactic approaches to using information technologies and didactic tools in mathematics lessons.

2. Develop a methodology for using information technologies and didactic tools in teaching students mathematics.

3. Information technology in mathematics lessons and verifying the effectiveness of the methodology for using didactic tools through experiments.

The following information and communication skills are important, which determine the readiness of a modern teacher to work in the conditions of informatization of society:

- Ability to perform professional tasks using modern tools and methods of informatics, information technologies and didactic tools;

- Developed personal qualities that realistically reflect the level of preparation in the use of information technologies and didactic tools in professional activities;

- To be able to correctly assess the situation and organize specialized knowledge to make effective decisions using information technologies and didactic tools in pedagogical activities.

The difference between the new information environment and the traditional one is that it consists of its own small technological system. After all, the integration of information technologies and didactic tools into the educational process of any educational institution is accompanied by fundamental changes in all other didactic, organizational, economic, theoretical and methodological subsystems of education [2].

To effectively use the capabilities of the information educational environment, the educator, as a consumer, must have access to the full range of technical capabilities available to him.

information technologies and didactic tools in the educational process is a great opportunity to increase the effectiveness of education. In particular, it is not difficult to distinguish between the educational process and teaching using information technologies and didactic tools.

In this case, not only listening and reading, but also students have the opportunity to independently learn, observe the theoretical knowledge gained in practice, and explore new content in the subject during the same lesson.

use information technologies and didactic tools in mathematics lessons, it is first necessary to learn computer programs and how to use them. This means that computer programs not only help students build their knowledge and skills, but also help them develop their creative skills through the use of computers [3].

Information technologies and didactic tools used in teaching are described as follows, depending on their function:

- interactivity and multimedia of educational material, automatic learning systems based on electronic intellectual textbooks that provide large volumes and hypertext;

- science-oriented environments called microworlds;

- laboratory exercises;

- simulators;

- reference systems;

- computer games.

An automated learning system allows for independent learning of a course or a large section of it. This system combines the features of a simple textbook, a set of problems, laboratory exercises, a reference book, and an expert who checks the acquired information:

– provides an optimal way of learning the material, that is, it allows the student to independently organize the sequence of mastering the theory and developing skills in solving examples and model problems, as well as to independently check the quality of the acquired knowledge and skills;

- instills analytical and research skills;

- allows you to save time for the student.

A science-oriented environment consists of a package of educational programs that allow you to work with objects of a certain class, understand the relationships between them and perform work on objects and relationships, as well as clearly visualize objects and their properties.

When working with environmental objects, the student sets a goal to achieve the assigned didactic task or to complete independent tasks.

Checking programs are designed to check and assess the quality of knowledge. They should allow the student to: enter the answer in a form that is as close as possible to the generally accepted form; store, collect, print (copy to paper) and statistically analyze the results of the check; and receive an adequate assessment, regardless of the form and syntactic (sentence structure) literacy of the answer.

Reference systems are programs designed to store and display various educational information, similar to a reference book. In these programs, educational material is arranged in a hierarchical order and information can be quickly searched for by various signs. They provide contextual information retrieval, storage, and reproduction.

Video-computer teaching technology is a technology that stimulates students' active learning and knowledge acquisition processes. This technology allows for the simultaneous presentation of verbal and visual forms of educational information, and for the adaptation of the teaching process to the goals. When students are taught individually with a computer, they cannot engage in communicative activities in lessons, and in addition, the heuristic aspect of problem-based learning disappears [4].

Currently, computers are used in the education system mainly in four areas: is being used:

- as an object of study;

- as technical means of teaching;

- in educational management;

- in scientific and pedagogical research.

There are many advantages to computer-assisted learning:

– the time for students to develop certain skills is reduced;

– the number of tasks to be practiced increases;

- the pace of students' work accelerates;

– The student becomes a subject of learning as a result of the need for active control by the computer;

- students will have the opportunity to model and directly demonstrate processes that are difficult to observe and observe;

– it becomes possible to provide lessons with remote resources using communication tools;

- Communication with the computer takes on the character of a didactic game, which increases students' motivation for learning.

Many electronic educational materials have been created for use in the educational process, such as electronic textbooks, electronic study guides, and teaching software tools. They provide certain effectiveness in education due to the presence of features such as manageability, interactive methods, artificial intelligence elements, and emotional flexibility.

The use of computers in the educational process allows for the following:

- forms a need for knowledge in students;

- activates students' cognitive activity;

- increases students' interest in learning science;

- increases enthusiasm for learning to work with computers;

- introduces the world to modern methods of scientific

knowledge related to the use of computers;

- increases the student's level of individuality in education;

- develops students' creative abilities;

– ensures diversity in the content of materials;

- expands the range of educational materials used in education;

– enhances demonstrativeness in education;

– Students' self-control, that is, expands the factors of the assessment process.

New technical tools, including information technology, are being used in teaching mathematics. technologies and the rapid introduction of didactic tools One of the current issues is the use of advances in computer science to ensure interdisciplinary coherence [5].

Information The introduction of technologies and didactic tools into educational institutions opens up a wide range of possibilities for optimizing the teaching process.

Information in mathematics education in the next decade The use of technologies and didactic tools was carried out in several main areas. These include information This includes assessing knowledge using technologies and didactic tools, developing and enhancing various types of educational programs, developing mathematical games for cognition, and so on.

Information in teaching mathematics The use of modeling programs is to provide clarity to materials that are difficult to visualize and visualize using other teaching methods. With the help of modeling, students can present information in a graphical format in the form of computer multimedia. Due to this, they are more likely to study mathematics in depth and demonstrate significant independence in the learning process [12].

Current information Technologies and didactic tools have various possibilities in the educational direction. On the other hand, this education is not without its problems.

Information first Technologies and didactic tools are developing so rapidly that even pedagogical research and methodological guidelines are becoming outdated.

On the other hand, the technical tools in a teacher's professional activity are so diverse that new methods of using them emerge. Teachers, on the other hand, are faced with the challenge of information New issues and problems arise in the correct application of information technologies and didactic tools in the educational process. The application of information technologies and didactic tools in mathematics dramatically increases the level and quality of knowledge, while to a certain extent it is necessary to pay attention to theoretical and methodological aspects. These are the didactic principles of teaching [11].

Information on the learning process Let's look at how didactic tools emerge when implementing technologies and didactic tools :

- For the relationship between teacher and student to be a pedagogical process, both parties must define a clear task. Depending on the content, nature, and difficulty of the education being taught, information technologies and didactic tools determine their function. Preparing for the reception of new material, assimilating new information and demonstrating it, explaining, consolidate, generalize, and review acquired knowledge, skills, and competencies.

- Ensuring that education reaches each student individually, increasing student participation in the educational process. Modern information technologies allow the use of various methods and techniques, taking into account the age of the student and his individual capabilities [10].

Information about mathematics lessons To achieve this, the following steps should be taken using technologies and didactic tools:

1. Choosing a specific topic of the curriculum, individual lessons.

It is necessary to determine the topic, teaching methodology, and teaching technology using information technologies and didactic tools, which are separated from the curriculum.

3. Develop assignments for the lesson.

4. Develop the topic using the selected program.

5. Transfer relevant information based on the selected program.

6. Review and analyze the development of teaching materials.

7. Creating methodological developments for the

student.

8. Analyze the lesson learned and correct any shortcomings in a timely manner.

Software and technical tools are used in lessons, introducing their own characteristics. They encourage the improvement of traditional teaching methods. The role of the teacher is also changing. In lessons with the help of information technologies and didactic tools, the teacher acts as a consultant, which accelerates the process of students' cognition and allows them to learn the subject in detail. The teacher has more opportunities for individual scientific work with the student [6].

The successful delivery of a lesson at school depends on the teacher's ability to combine thematic demonstrations and lectures with information technologies and didactic tools. The student's perception of the topic is further improved with the help of information technologies and didactic tools. Making a mathematics lesson interesting and clear with information technologies and makes the teacher's work much easier when presenting it to the student using didactic tools [9].

We will illustrate the didactic properties of information technologies and didactic tools.

Showing pre-prepared lessons at the right time, allowing the teacher to demonstrate geometric shapes and function graphs without spending too much time, makes the teacher's work easier during the lesson and helps to provide a meaningful lesson.

- It creates an opportunity to overcome temporary and future difficulties.

When using Internet resources, students can be shown the possibilities that are limited in time and space.

- Opportunities for more real and broader penetration into events and processes.

To demonstrate experiments, processes and phenomena to students using information technologies and didactic tools, to display the changes in the formation of function graphs on a computer screen in stereometry using information technologies and the topic becomes more understandable when done with the help of didactic tools [8].

- Show the development of the phenomena being studied.

Visually demonstrating algebraic and geometric progressions of increasing and decreasing functions, finding the volume and surface area of stereometric bodies, etc. It is effective in teaching topics that are difficult to master and understand.

– The accuracy of the depiction of reality

It allows you to dynamically display geometric objects from different angles in real time.

What is the purpose of using information technologies and didactic tools in the classroom?

First, to solve practical problems written in mathematics

Secondly, the organization of independent work of students and the establishment of teaching and control through information technologies. Control through testing is carried out very quickly and objectively using a computer, this method is of great importance [7].

Thirdly, the implementation of information technologies and didactic tools allows students to form decisive competencies. Information technologies and didactic tools in mathematics help to solve the problems posed by the curriculum.

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