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IMPROVING THE TEACHING OF CHEMICAL EXPERIMENTS THROUGH INFORMATION TECHNOLOGIES

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Abstract:

At the beginning of the 21st century, humanity was talking to a new stage of its development - scientists and politicians, entrepreneurs and educators - about the beginning of an increasingly information age. Indeed, it is hard to imagine modern life without the use of information technology.

Keywords: Computer programs, "Education through Life", Testing programs, Alekseeva IV (MTsIO), Automation of individual operations.

Fast-growing science and the technological revolution has become the basis of the global process of informatization of all spheres of society. In a dynamically changing world, global interconnectedness and competition, the use of common technologies and their constant development and complexity, the need to inform the education sector is important. The use of information technology is an objective and natural process. This is the most important requirement today - the national priority of Uzbekistan. Reproduction of information increases the burden on the child and gives students an idea of how to maintain their interest in the topic, which they will accomplish during the lesson.

There may be a computer that can help solve this problem; the use of computers during teaching allows the creation of an information environment that stimulates the child☐s interest and curiosity. This allows for the organization of individual education. In this regard, the professional activity of the schoolteacher has changed significantly. Modern Many problems of education (raising the professional level of teachers, mastering new educational technologies. The transition from the principle of "Education for Life" to "Education through Life") are now directly related to information and communication technologies (ICT). However, the presence of modern ICT tools in these schools does not automatically lead to an increase in teachers ☐professional skills and the quality of education.

Introduction of new information technologies in the professional activity of teachers, in particular, is a priority of modernization of education in general and historical education. It is necessary to use a computer, but this is not a sufficient indicator. The development of society today requires the use of new information technologies in all spheres of life. The modern education of specialists in the field of education must meet the requirements of the time. That is, a modern teacher should use a computer in their work.

Because the main task of the school is to make the new generation literate, thinking, is the ability of citizens to acquire independent knowledge. Information technology is traditionally understood as a complex of interrelated scientific, technological, and engineering disciplines that develop ways to effectively organize the work of people engaged in the processing and storage of information. UNESCO proposed this definition. In the practice of teaching information technology, special media (computers, audio, video devices, etc.) a materials) is called for all technologies that use. However, with the onset of active computerization of education, the term ☐new information technology of computer education☐ emerged. Currently, the following areas of the use of information technology in the teaching of natural sciences are widely used:

1. Computer programs and training systems are * Designed to generate new knowledge and skills using computer and multimedia projectors electronic textbooks and manuals. * Diagnostic or test systems designed to identify, evaluate, and test information and skills. * Simulators and simulation programs for the development of practical skills (interactive maps) * Databases and databases for various fields of knowledge (electronic encyclopedias and reference books) * Application and software tools to perform certain operations (word processing, counting, editing, graphics, etc.) to provide * Video equipment. Systems based on multimedia technologies built using SDs * Interactive whiteboards. 2. Information resources databases and databases that provide direct and remote access to information resources based on information warehouses. 3. Telecommunication systems for e-mail, teleconferencing 4. Distributed and centralized, allowing access to global information resources electronic libraries of nature.

"The purpose and content of education will change, but no matter what reforms and modernization have taken place, the lesson is eternal and retains the basic form of preparation. In this, the traditional and modern school is preserved ... It will be interesting. Modern - it is completely new and, in a word, not to lose touch with the past - current. Real tools are important, significant for the present. Yet - effective. Modern.

Today, every day has a direct bearing on the existing interests that are actually manifested while the person is living. In addition, if the lesson is modern - it will always be the foundation for the future three. . (S.V.Kulnevich. T.P.Lakotsenina Modern lesson. Part 1. M. 2002 S.4-5 ...) Modern. It is impossible to imagine preparing the ground for a current lesson without the use of Information Technology. This session is a process of regular interaction between the teacher and the trainees. He is interactive in the organization. Any narrows will achieve its goal if it is based on the following goals: - teacher's interaction with the audience; - the existence of sustainable and effective management of the educational process; - Stable motivation for cognitive activity.

Learning is supported or carried out by a peer-to-peer learning environment using, Information Technology in a privileged manner with the operation of a computer operating system. According to Alekseeva IV (MTsIO), the information in the lesson technologies: - not as a target. perhaps as another way of understanding the world of the child; - as a source of additional information on the subject; - as a method of organizing and self-organizing the work of teachers and students; - as an opportunity for a teacher-centered approach; - should be used to expand the zone of individual activity of the child. The audience seems to be divided into four groups in terms of ICT use 1) Demonstration type lessons (one computer on the teacher's desk and projector equipment); Such lessons are the most common today. The information is displayed on a large screen and can be used at any stage of the lesson 2) Lessons in computer testing (in the computer class); Testing programs allow you to quickly evaluate the results of your work, clearly identifying topics where knowledge gaps exist.

They reinforce feedback in the teacher-student system. 3) Training and teaching to build lessons. In this lesson, students work with a constructive environment to achieve a goal individually or in a group. 4) Integrated lessons. A teacher and a computer science teacher teach such a lesson. The heavy workload of computer science classes is limited to the practice of secondary and tertiary classes, and the number of laptops required is not an alternative to desktop computers. Lack of Internet access outside the computer room.

Computer training can be used at all stages: when explaining new materials, identifying, repeating, and controlling them. It also performs various functions for the child: the teacher□s work tool, the learning object, the collaborative team, the play environment. For example, in conducting a third type of lesson, the Computer may be the teacher, providing a source of educational information, a partial or full teacher position, and a book; a new level of assistance in terms of quality; simulator; diagnostics and control making tools. Consider the use of information technology at each stage of the lessons. Table 1. Application of information technology in chemistry lessons.

Organizing the beginning of the lesson. Control over the performance of household chores

1. Pass the heater or control test.
2. Using simulators
3. Perform the created tasks. Problem solving.
4. Electronic homework

Individual frontal

Collective

Assimilation of new knowledge and methods of work, the first test of understanding.

1. Multimedia support for explaining new material;
2. Slide - lessons;
3. Educational-methodical manual
4. Curriculum
5. Creative task
6. Show video

3. Improving information and working methods.

1. Completion of test assignments.
2. Create a creative theme
3. Mini-research works

4. Systematization of knowledge and skills.

1. Electronic creative task (presentation. Creating a web page)
2. Preparation of the report, the abstract of the message
3. Research project

Individual, group

5. Information control and self-checking.

1. Research project
2. Control
3. Creative tasks

Individual

Table 2. Features of the use of computer hardware and software multimedia Traditional teaching methods Traditional methods and their didactic possibilities Improving the use of computer software and hardware in the use of IT Oral: story, conversation, explanation, briefing Oral, printed (textbooks and manuals, books). Leading mediators are a vital word that is easily integrated with other training manuals, students in a short time allows you to enrich your memory with generalized scientific knowledge. Improvements using software and hardware IT sending text information from the screen, knowledge message (the text is read by the program speaker). Ability to replicate the

same content repeatedly. Hyperlinks allow you to quickly find the information you need. Demonstration: mock-up presentation, work or operation demonstration, screen presentation Natural objects, models, samples, collections, tables, posters. Diagrams, illustrations, videos. On-screen display. Tracking fixed objects. Multimedia presentation of receptions and transactions; Virtual conversion of objects in space and aircraft; visualization of processes that cannot be taken into account in real conditions

- It is better to assimilate educational information, because it involves all the senses Practical: exercises, practical and laboratory work Learning tasks for practical training. Training practice in the performance of exercises, practical and laboratory work Virtual operations, planar and spatial modeling of objects. Automation of individual operations. The process of logical recycling of applied matter is taking place. The number of organizational moments decreases Control methods: oral and written interviews, test work. Self-monitoring and self-assessment Test and control tasks, questions and problem situations. Mastery of theoretical and practical teaching materials by students and narrows check the results. Machine instructions and management. Fast and objective evaluation of results. Operational self-assessment and correction of results

Teaching with the use of information and communication technologies is based on a system of principles that reflects the basic requirements for the organization of the educational process:

- The principle of regularity is ensured by the use of ICT at all stages of education; - The principle of activity and independence of students implies significant activity of schoolchildren using ICT, the ability to control the flow of information, to observe independent thinking;

- Differential approach for students, the principle focuses on the characteristics of youth, level of knowledge, interests, level of readiness for perception. It defines the methodology of working with students of different ages; - Principles for allocating educational resources - have the most convenient and familiar possibilities. Material and individual education requires the study of a comfortable pace of orbital construction study (local media through a network, etc.) in the form of information presentation and presentation;

- Learning process the principle of participation of the author; the principle of interactivity is ensured through cooperation based on the participants' cooperation in the educational process; the principle of multimedia presentation of educational information in information technology; one. Use a modern lesson (in terms of the use of technical means). 2. Study the worldview of the modern child and bring a lesson that he listens and hears more than what he reads and speaks; obtained by technical means prefers to use data. Experience and practice show that in the process of preparation for lessons, seminars, workshops, children use videos, information from the Internet, computer software. 3. Establish a relationship of mutual understanding, mutual assistance between teacher and student. 4. To the teacher: - examination of knowledge, skills; - The organization of the accumulation of knowledge accumulated in the classroom; - save time; - re-evaluate the student balanced and objective explanation; - ability to present materials emotionally and figuratively.

First, information technology allows you to optimize the performance of the teacher. Thus. The use of information technology in teachers' activities allows for more effective lesson preparation, perhaps the faster implementation of certain operations, expanding the information space of the traditional lesson. In chemistry classes, I take lessons, portraits, video tours, interactive for effectiveness project models, photos, pictures of objects on a big screen using a projector. When explaining new material, the information displayed on the screen is explained with additional explanations and examples if necessary. In addition, in determining the information received, I suggest that students work with e-textbook text, conduct seminars, interactive tests. At the same time, organizational, individual and various forms of educational activities, ICT in It is advisable to use non-traditional forms of textbooks in the preparation and conduct.

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