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# Use of Information Technologies in Technology Classes

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**ABSTRACT**

In this article In technology lessons, detailed information is provided about the use of information technologies, information communication technologies, information technologies: classification and development prospects, presentation preparation technologies for practical training.

***KEYWORDS:*** *technology, information communication technologies, ICT, presentation preparation technologies.*

**Information about information and communication technologies**

Information technology (IT) is a system of methods and a way to collect, store and search information. of IT informatics is the subject, as well as management practices, production management, scientific research and establishment of enterprises in the economy, as a result of their technical development, creates new branches of the national economy. IT is a science that teaches how to collect, store, transfer information and use all technical tools that implement these processes. IT as a science includes the organization of methodological and methodological situations, methods of using instrumental - technical means, etc. Transformation of new scientific knowledge into accurate information technologies is the main task of information technologies as a science.

The term "Information" comes from the Latin word "Information" and in Uzbek it means to explain, to introduce, to explain.

In turn, the message is a form of information representation, which is expressed in speech, text, image, graphic, table, video, sound, etc.

In general, information is the exchange of information between people, between people and objects, between living and non-living nature, and is a scientific concept in a broad sense. Informatics is a field of human activity, which includes information creation, storage and processing with the help of a computer, as well as the interaction of processes with the application environment.

The word "computer" first appeared in France in the 60s of the 19th century. It is a combination of the words information and automation and means "automatic data processing". In English-speaking countries, it is called computer science. Informatics as an independent science emerged in the late 40s on the basis of cybernetics, a science about the general principles of others in technology, biology, social and other fields.

Informatics in a broad sense is science, technology and production, that is, the only field related to the processing, storage, and transmission of information using computers and telecommunications in all areas of human activity.

Informatics, like the fundamental sciences, deals with the creation of information systems for the management of voluntary objects from the base of computer technology, and as an applied subject, information systems within the concrete production activity of a person.

In particular, one of the most basic types of information is economic information. Its difference from ordinary data is that it is related to large groups of people, organizations and management processes in enterprises and other similar economic structures.

**Information technologies: classification and development prospects**

"Technology" is a Greek word (techne) which means skill, mastery, ability to do something. It is applied to a specific process. A process is a set of actions aimed at achieving a goal. This process is determined by the strategy chosen by the person and is carried out using various tools and methods.

In general, technology means a change in the shape, properties, condition of raw materials, materials or semi-finished products, as well as a set of methods of its processing and preparation. It means doing something at a high level.

When it comes to information technology, information is involved both as a material and as a product. However, it is qualitatively New information about an object, process or event. Technology is manifested by the method and style of the employee working with information and technical means.

In industrial production, any technology represents a statement of a set of structural elements covering the technological process from the beginning to the end of product creation. The composition of its structural elements (technological operations) is determined by two main factors: firstly, through quality methods and principles in relation to the basis of this technological process, and secondly, through the tools and equipment that can be used to perform the technological operation in the final process of product preparation.

Information and communication technologies. The system of methods and methods of collecting, transmitting, collecting, processing, storing, presenting and using information is called information and communication technologies.

Information and communication technologies are implemented in automated and traditional (paper) form. The extent of automation and the type of use of technical means depends on the essence of a specific technology.

**Peculiarities of using ICT in technology education classes**

Each member of society, in his daily activities, continuously uses various information resources. The volume of information, which is constantly increasing, serves to increase the intellectual potential of the society. As long as this is the case, the teacher can improve his professional and pedagogical skills based on the flow of modern information

technologies. In order for each teacher to effectively use information technologies in the course of work, he must first create the basis for the formation of his own information environment. Modern information technologies embody in their environment information objects, their interaction, technologies and means of information creation, distribution, processing, collection, as well as the organizational and legal structure of information processes. Nowadays, it is necessary for the teacher to take into account the possibilities and requirements of students in the educational process. The education and training system promoted by the teacher should have a person-oriented character, that is, it should be differentiated, paying attention to various characteristics and qualities of the person.

Modern information technologies embody in their environment information objects, their interaction, technologies and means of information creation, distribution, processing, collection, as well as the organizational and legal structure of information processes. Nowadays, it is necessary for the teacher to take into account the possibilities and requirements of students in the educational process. The education and training system promoted by the teacher should have a person-oriented character, that is, it should be differentiated, paying attention to various characteristics and qualities of the person.

**In the educational activity of the educational institution while:**

Organization of compulsory study of information and information technologies; - use of educational programs in all subjects; - control of students' learning using computer tests; - using library catalogs and ordering books from popular libraries via the Internet; - preparation of methodical developments of teachers, lecture texts and other training manuals for publication; - using the information in the Internet system to achieve independent preparation of lectures and abstracts by students; - use of electronic texts of educational and fiction literature; - it is necessary to make it possible to use special encyclopedic dictionaries. When using computer technology, the teacher can perform several tasks according to its content. Actively accessible computer technologies perform the following main didactic functions: - develop students' interest in science through the use of multimedia technology; - due to the interactivity of education, it activates the students' thinking skills and increases the efficiency of learning the learning material; - in real situations, it is important because it provides an opportunity to model and visualize processes that are difficult or complex to demonstrate; - assimilation of educational materials is effective not only according to the level, but also according to the level of logic and acceptance of students; - distance learning only by correspondence students or internet education but it is also effective according to the level of logic and comprehension achieved by students; - distance learning only by correspondence students or internet education not just for, but also the opportunity to organize for students who missed classes due to this reason will give; - an opportunity for students to perform certain research works by searching and finding materials and finding answers to problematic issues through independent research creates; - conditions for students to master a new topic, solve examples, write essays, statements, independently familiarize themselves with educational materials, select and analyze information and data quickly creates. It is known that one of the main features of improving the educational content is the increase of "supporting information" that is constantly referred to in the process of communication with the computer, the creation of an information base of a level that can meet the requirements of the computer information environment and modern times, hypertext and multimedia, imitation, communication systems are adopted in teaching. In particular, if we take technology lessons, a presentation is made for each topic, videos on the creation and creation of exhibitions are organized, and some methods can be implemented through computer technologies. In addition, all the teacher's documents are created through ICT (scheme, lesson plan, program, personal work plan, syllabus, science program, handouts, exhibitions and etc). Textbook "Technology" plays an important role in preparation for practical work, which plays an important role in people's lives. When you grow up, no matter what profession you take, no matter who you are, the knowledge and skills you have acquired from the science of "Technology" will certainly benefit you in life. In the "Technology" classes, you will learn about materials science, equipment, devices and their use. You will acquire skills and competencies related to product manufacturing and home appliance repair. The skills and aspects of their formation, which are necessary for students to acquire the methods of handling different materials, are mentioned. After all, general labor skills related to material handling occupy an important place in everyone's life.

Presentation preparation technologies for practical training. Textbook "Technology" plays an important role in preparation for practical work, which plays an important role in people's lives. When you grow up, no matter what profession you take, no matter who you are, the knowledge and skills you have acquired from the science of "Technology" will certainly benefit you in life. In the "Technology" classes, you will learn about materials science, equipment, devices and their use. You will acquire skills and competencies related to product manufacturing and home appliance repair. The skills and aspects of their formation, which are necessary for students to acquire the methods of handling different materials, are mentioned. After all, general labor skills related to material handling occupy an important place in everyone's life.

Creativity is the creation of material and spiritual wealth based on a new idea. Thanks to creative activity, our life is becoming more convenient and interesting. All objects, devices and equipment that surround you are products of technical means and technologies created by creative people. As a result of their work, huge airplanes, modern cars, computers with great capabilities and other blessings that are precious to us were created. Technology, pedagogical technology in scientific and pedagogical literature in the field of education, technological approach, technologization of education, technological training are discussed, different interpretations and definitions are given to them. In my opinion, first of all, it is appropriate to know the meaning of the word "technology". The translation of the word "technology" from the Greek means a science that systematizes a set of methods of processing raw materials and materials with the appropriate devices and equipment of production in order to obtain finished products. That is probably why it is sometimes referred to as "techno" - craft or art, "logos" - science, as the science of the art of processing raw materials to obtain a product. It is probably from this point of view that in European countries, including German

and Russian schools, the subject of "Labor Education" is called "Technology" or "Technological Education". The main goal of teaching technology in general secondary educational institutions is to apply the knowledge, skills and competences acquired in technical-technological and operations performed during the technological process in independent practical activities, profession It consists in formation of competences to be able to engage in social relations based on selection, national and universal values.

The main tasks of teaching technology in general secondary educational institutions: studying materials and their properties, characteristics, and information about technical objects and technological processes; knowledge of special and general labor operations in technical objects and technological processes; management of technological processes, ability to apply special and general labor operations in practice; formation of technical and creative thinking, intellectual abilities; to be able to analyze the technological process and the sequence of execution of prepared products, as well as product quality; making conclusions about the execution of goods and processes, and labor operations, products to be able to evaluate the quality; consists of forming and developing competences related to basic and technological science in the implementation of preparations for consciously choosing a profession.

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Currently, information and communication technologies are widely used in the teaching of almost all subjects. While technology lessons apply general didactic principles to other school subjects, they also have their own characteristics. Students engage not only in cognitive activities, but also in creative activities. The science of technology serves not as an object of simple study of labor tools and processes, but as an instructional tool, didactic material, and a technical tool of education that activates students' practical work. There are specific aspects of using modern methods of education, pedagogical and information and communication technologies in the process of teaching technology.

It is important to use advanced and modern methods of teaching, to apply new informational-pedagogical technologies in order for students to fully master the science of technology. Use of textbooks, educational and methodical manuals, handouts, electronic materials, virtual stands and production models and models of machines in working condition, watching television and radio broadcasts on technology science, studied work methods, studying the information given in magazines and newspapers, using media tools to find terms related to the science of technology, performing didactic tasks from information sources (television, radio, audio-video recording, telephone) to be able to use; it is important to follow media culture when opening files. In the process of teaching this subject, when we use modern information and communication technologies of education, when we show presentations with the help of modern computer technologies in the practical training sessions, students will gain deeper imagination and knowledge by seeing. In our opinion, the use of information and communication technologies in technology classes has a great positive result. Because before, the teacher used to demonstrate the process of preparing items one by one during practical classes in technology classes, which required excessive time consumption and sometimes the teacher had to re-demonstrate.

**Presentation preparation technologies for practical training**

Another important aspect of the use of information and communication technologies is the formation of various labor skills by showing the training sessions "Master Classes" performed by our skilled carpenters, plumbers, cooks, tailors and craftsmen in various fields. it also provides an opportunity to start career guidance. We have shown some of the uses of information and communication technologies in technology classes above. In conclusion, if information and communication technologies are widely used in technology lessons, the quality of technology education lessons will be effective. The development of pedagogical technologies and their introduction into the educational process, as well as rapid exchange and improvement of information technologies creates an opportunity for a person to strengthen his professional training and skills. Nowadays, increasing the effectiveness of education using innovative

pedagogical and information technologies in the process of innovative education is becoming stronger day by day. Any effective lesson plan should include four key elements: These four key elements will provide the teacher with greater opportunities to engage with students and encourage active student participation in the lesson. provides. Nowadays, increasing the effectiveness of education using innovative pedagogical and information technologies in the process of innovative education is becoming stronger day by day. Any effective lesson plan should include four key elements: These four key elements will provide the teacher with greater opportunities to engage with students and encourage active student participation in the lesson. provides. Nowadays, increasing the effectiveness of education using innovative pedagogical and information technologies in the process of innovative education is becoming stronger day by day. Any effective lesson plan should include four key elements: These four key elements will provide the teacher with greater opportunities to engage with students and encourage active student participation in the lesson. provides.

- Interest-motivation-Presentation-presentation-Practice-practice-Result-check mastery-Interest. In this part of the lesson plan, conduct a short game or activity with the students related to the topic of the lesson, which will attract their attention and create interest in learning the topic. The duration of this stage should be around 4-5 minutes and it should correspond to the topic to be studied.

Discussing the newly learned material of the subject with students and involving them as much as possible in this process will lead to good results. If a rule, argument, law, demonstration, or procedure is unclear to students, try to explain it to them and make them feel that they understand most of its essence.

The use of innovative technologies in the above-mentioned presentation-presentation section helps the students to make the lesson understandable and clear, interesting. Today, the scope of information has greatly expanded. Lessons can be remembered by connecting lesson topics with everyday life events, using various innovative technologies. It is necessary for the teacher to fill the lesson with ecological hygiene knowledge to the students using innovative methods. Innovation in English means innovation, innovation, and technology is derived from the Greek words "technos" - art, skill and "logos" - science. Innovative technology means a new approach to educational forms, methods and methods. means bread.

If information and communication technologies are widely used in technology lessons, if lessons are taught from computers, if everything is as vivid as possible, for example, if lessons are conducted with miniature models of the topic, technology cards, the quality of technology education lessons will be effective. Innovative behavior does not imply adaptation, it implies the formation of one's own personality, self-development. The requirement of modern education is not to give students as much knowledge as possible, but to teach them to learn independently, to work independently, not only to know, but also to be able to use the obtained information in the right places, to achieve their goals. is to be able to choose the right one.

**STEAM educational technology**

If we expand this acronym, we get: STEAM is S — science, T — technology, E — engineering, A — art, and M — math. In English it goes like this: science, technology, engineering, art and mathematics. Do not forget that these directions are becoming the most popular in the modern world. Therefore, today the STEAM system is developing as one of the main trends. STEAM education is based on the application of a practical approach and the integration of all five areas into a single educational system.

**How does the STEAM approach affect academic performance?**

Its main idea is that practice is as important as theoretical knowledge. That is, during learning, we need to work not only with our brain, but also with our hands. Learning only within the walls of the classroom is not keeping pace with the rapidly changing world. The main difference in the STEAM approach is that children use both their brains and hands to successfully learn a variety of subjects. They "read" the knowledge they received.

**STEAM education is not only a way of teaching, but also a way of thinking.**

In a STEAM learning environment, children acquire knowledge and learn to use it immediately. Therefore, when they grow up and face life's problems, whether it is environmental pollution or global climate change, they understand that such complex issues can only be solved by relying on knowledge from different fields and working together. It is not enough to rely on knowledge of only one subject.

**How did this new approach to education come about?**

This is the logical result of combining theory and practice. STEAM was developed in America. Some schools took into account the careers of their graduates and decided to integrate subjects such as science, technology, engineering and mathematics, and this is how the STEM system was formed. (Science, Technology, Engineering and Mathematics). Later, Art was added here, and now STEAM was finally formed. Teachers believe that knowledge of these subjects, or more precisely, these subjects, will help students become highly qualified specialists in the future. After all, children want to get good knowledge and apply it immediately.

If we say that the main goal of traditional education is to teach knowledge and use this knowledge to think and create, the STEAM approach teaches us to combine acquired knowledge with real skills. This gives schoolchildren the opportunity not only to have some ideas, but also to put them into practice and implement them. That's it. only knowledge that can actually be used is truly valuable.

The most popular example of the STEAM approach—Massachusetts Institute of Technology (MIT). The motto of this world university is "Mens et Manus" (Mind and Hand). The Massachusetts Institute of Technology has developed STEAM courses to give children an opportunity to learn and be exposed to the concept of STEAM in advance, and even created STEAM Learning Centers at some educational institutions.

According to statistics, since 2011, the level of demand for STEAM professions has increased by 17%, while the demand for regular professions has increased by only 9.8%, which means that there is a huge demand for this education system worldwide. shows.

But what is the reason for such a high demand? In many countries, STEAM education is a priority for several reasons:

In the near future, there will be a very high demand for engineers, high-tech production specialists in the world, and therefore in Uzbekistan.

In the distant future, we will have professions related to technology and high-tech production together with natural sciences, especially bio and nanotechnology specialists will be in great demand.

Specialists will need extensive training and experience from various fields of technology, natural sciences and engineering.

**Integrated education**

So what is the difference between this education system and the traditional way of teaching subjects? STEAM education provides a blended environment where students begin to understand how to apply scientific methods in practice. Students in this program, along with mathematics and physics, design and develop their own robots emits robots they learn. Special technological equipment is used in the lessons.

The following statements were made at the STEAM forward international conference in Jerusalem in 2014:

- Involvement of children in STEAM. This education should begin at preschool age, so programs should be included in kindergartens.
- The language of science is English. If you want to study science and become a scientist, you need to know this language.
- Steam educational programs for girls are needed. Girls in the field of science, because of their discipline, can do things that boys cannot do.
- Science is fun! Science should be fun, it should be interesting and engaging for students.

In conclusion, we would like to emphasize that, compared to traditional teaching methods, the STEAM approach in high school allows children to conduct experiments, build models, independently create music and films, and turn their ideas into reality. and drives the creation of the final product. This educational approach allows children to effectively combine theory and practical skills and facilitates university entrance and further studies.

**Main literature:**

[1] Sanakulov XR, Khodiyeva DP Satbayeva "Technology and its teaching methodology". Textbook. T.: TDPU. 2015.

[2] Mavlonova RA, Sanakulov XR, Khodiyeva DP Technology and its teaching methodology. Study guide. T.: TDPU. 2007.

[3] Sanakulov XR, Khodiyeva DP Practical works from paper in primary grades. Instructional manual. T.: Nowruz. 2013.

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