

THE CONTENT AND FORM OF THE INTRODUCTION OF DIGITAL TECHNOLOGIES IN COMPUTER SCIENCE EDUCATION

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Abstract. *The article presents information about the implementing of digital technologies into the educational process in higher education establishments and the development of students' competence in teaching computer science, ensuring the development of their skills to work with interactive methods from the point of view of the pedagogical approach. It is highlighted that teachers of computer science achieve positive results in teaching process by applying interactive educational technologies and non-traditional teaching methods to the process of digital technologies.*

Keywords: *digital technology, computer science, methodology, didactics, traditional lesson, non-traditional period, knowledge and skills, skills, story-role-playing games.*

The rapid development of digital technologies, the widespread use of computer technology, the ever-increasing scope of knowledge that should be imparted to students which allows for the fundamental improvement of education, the training of qualified specialists in subjects that are compatible with national and local conditions requires the development of programs, textbooks and modern methods of education.

Currently, modern teaching methods are widely used in the educational process. The use of modern teaching methods leads to high efficiency in the teaching process. It is appropriate to choose these methods based on the didactic task of each lesson. While preserving the traditional form of the lesson, enriching it with various methods that activate the activity of the students will lead to an increase in the level of mastery of the students.

Today, in a number of developed countries, the methods that form the basis of great experience in the use of modern pedagogical technologies guaranteeing the effectiveness of the educational process are called interactive methods. Interactive educational methods are currently the most common and widely used methods in all types of educational institutions. At the same time, there are many types of interactive educational methods, suitable for the purposes of implementing almost all tasks of the educational process. In practice, it is possible to select the ones suitable for specific purposes and use them accordingly. This situation has created the problem of choosing the right interactive educational methods for the realization of certain goals.

For this purpose, the lesson process should be organized rationally, the teacher should increase the interest of the learners and constantly encourage their activity in the educational process, divide the educational material into small pieces, and open their contents intellectually. It is required to use methods such as brainstorm, small group work, discussion, problem situation, guided text, project, role play and encourage learners to do practical exercises independently.

An interactive method is a solving activity, or a problem in a mutual dialogue, in the course of thinking in a mutual discussion. The advantage of this method is in that the whole activity teaches the student to think independently and prepares him for an independent life. While

choosing the interactive methods of teaching teacher should take into account the purpose of education, the number and opportunities of students, the educational and material conditions of the educational institution, the duration of education and the pedagogical skills of the teacher himself.

The relevance aspects of computer science at the youth level are reflected in the following:

- Formation of thinking processes, including logical and abstract thinking in students in the process of processing digital technologies.
- In order to ensure the use of the computer as an educational tool, to carry out practical work on information with the help of it, to get acquainted with modern software.
- Forming the skills of using a computer, students will have the experience of using it as a tool for calculating, describing, and editing work in the process being studied.
- Forms positive attitudes towards digital technologies as an effective tool in students.
- Forms the ability of students to comprehensively study the information and data they receive in various educational courses and to ensure their coherence.

Digital technologies serve to ensure that students freely express the knowledge they have acquired on the subject, clarifying the content with the help of their own opinion and real life examples. The use of these methods in the educational process enables independent thinking, creative research in students based on solving specific issues related to the studied problem, the causes of the origin of a certain process (reality, phenomenon), and finding ways to eliminate them. , to prove one's opinion and to be able to get out of different situations creates skills and competences. These methods are effective in teaching computer science. For example, on the basis of an electronic educational resource, the "Clove" method is presented in the form of a rose flower scheme. By "opening" fourteen "petals" (oval, square, rectangle or circle) attached to it on an animated basis, the questions attached to it are useful in teaching informatics, and with the help of the scheme, it is possible to clarify the main problem and its content so, private issues will be resolved.

“Chinnigul” metodi orqali Kompyuter grafikasi mavzusini tashkil etish

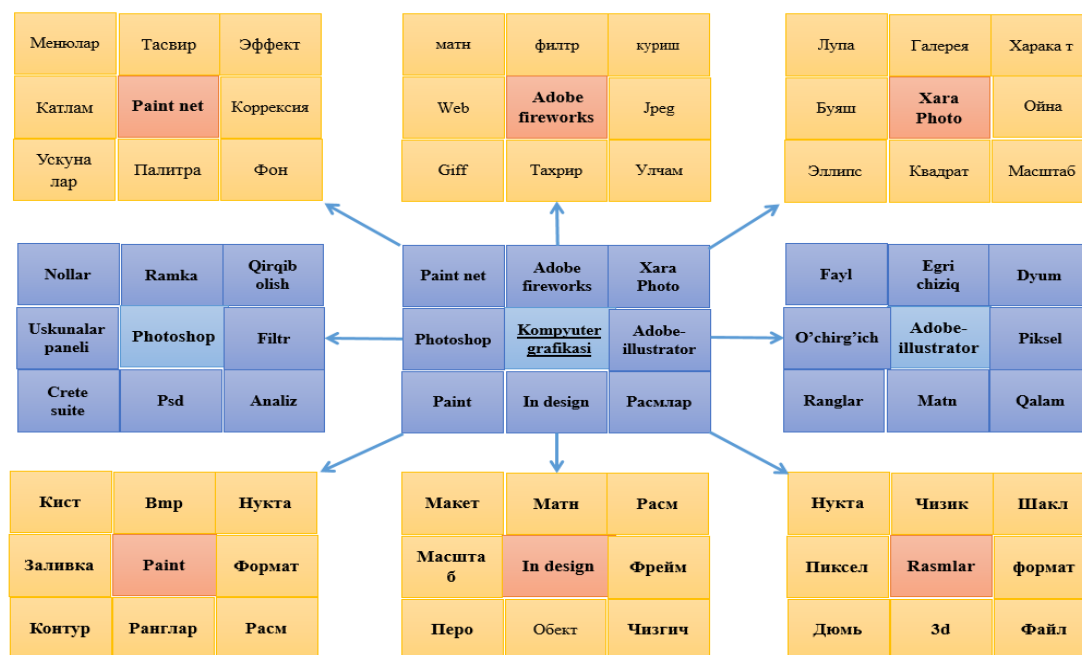
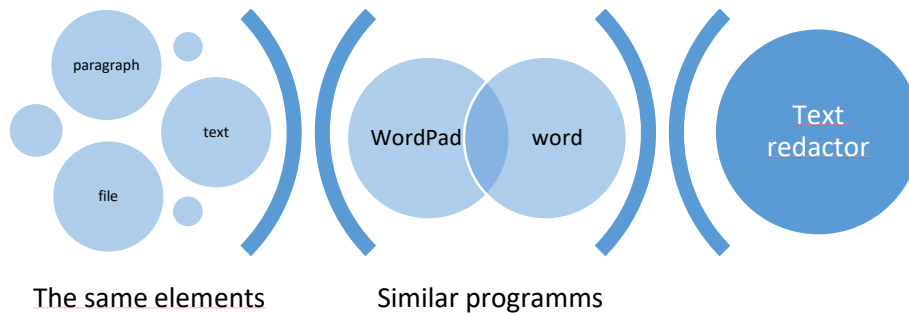


Figure 1. Organization of the topic "Computer graphics" with a help of the clove method.

The method of summarizing ideas. This method ensures students' activity in the course of training, encourages them to think freely, frees them from monotony, collects diverse ideas on a specific topic, and solves creative tasks. serves to teach how to solve the ideas that appeared in the stage. The method of summarizing ideas is carried out on the basis of one chapter. That is, the students will have the skills to repeat and strengthen their knowledge in relation to a chapter. The first part contains the elements that make up the second part, and the second part contains the elements that make up the third part. The main view of this method is as follows.



On the following example the method of summarizing thoughts used for the topic "Database management systems" of the computer training.

Fikrlarni jamlash metodi




Figure 2. Organization of the topic "Database management systems" through the method of gathering ideas.

The "Resume" method serves to form the skills of making a plan for the organization of pedagogical activities based on the theoretical knowledge acquired by students in a specific department or teaching computer science. Its application requires students to have the ability to thoroughly master the content of the studied subject, generalize the main ideas, and put them into a certain system. This method of teaching informatics allows to organize the activities of learners on the basis of pairs, groups and teams. Usually, while making plan, the following issues as pedagogical situation, the age and psychological characteristics of the learners, the content of the field of informatics, and the ability to achieve efficiency are taken into account.

Axborot texnologiyalarining ijobiy tomonlari

- Dunyo bo'ylab axborot almashinishi tezlashadi.
- Internet, electron pochta orqali ma'lumotlar juda unitiladi
- Axborot tez uzatilishi oqibatida jamiyat tez rivojlanadi
- Jamiyatda aqliy mexnat unumi oshadi



Axborotlashgan jamiyat haqidagi fikrlaringiz

Axborotlashgan jamiyatning salbiy tomonlari

- Axborotlarning tez uzatilishi natijasida rost axborotlarni ajratib olish qiyinlashadi
- Tarqatilgan yolg'on axborotlarni tashkilotlar va kishilar xayotini buzib yuborish mumkin
- Axborotla juda ko'payib ketib, kishilarga salbiy ta'sir etishi mumkin

Figure 3. Organization of the topic "Modern information technologies" through the resume method.

In teaching of computer science, the use of the "T-table" organizer helps students to understand the concepts of the course, and based on the comparison and comparison of the basic concepts with each other, a specific aspect of the subject or issue is identified. It is used for the purpose of detailed coverage according to several main characters. In many cases, the graphic organizer is used to compare the advantages or disadvantages, effectiveness or ineffectiveness of several cases covered in the content of the topic, and their importance for today and the future.

T-jadval organayzeri

C++ dasturi uchun

IJOBIY	SALBIY
<ul style="list-style-type: none"> ➤ C dasturlash tilini mukammallashtirgan eng asosiy narsa obyektga mo'ljallangan dasturlashni olib kirgani. ➤ C++ funksiya va obyektlarning boy kutubxonasiga ega. ➤ C++ dasturlash tili tez qulay, tartibli va ixcham yozish uchun obyektga mo'ljallangan. ➤ C++ dasturlash tili ANSI C standarti bilan juda mashhur. ➤ C++ dasturlash tili C tili asosida qurilganligi sababli B va BCPL tillarini ham o'z ichiga oladi. 	<ul style="list-style-type: none"> ➤ C++ dasturlash tilini o'rganish ikki qismga bo'linadi. Avval C++ tili sintaksisi o'rganiladi eyin uning asosiy kutubxonalarini birma bir o'rganiladi. Bundan ko'rinib turibdiki, bu til juda katta hajmni o'z qamroviga oladi. ➤ Dasturlashni yangi o'rganishni boshlaganlar uchun ham bir qancha qiyinchiliklar mavjud. ➤ C++ tili komplyatsiya qilinadigan til hisoblanadi bu degani yozilgan kod oldin mashina tiliga o'giriladi eyin ishga tushiriladi.

Figure 4. Organizing "Working in C++" topic through the "T-table" organizer

The "SWOT-analysis" strategy serves to illuminate the main four aspects of the problem. Learners illuminate the essence of problems that are relevant to the content of the subject, look for the factors that cause them, and find ways to solve them.

“Microsoft Access dasturi ishlash” mavzusi uchun SWOT-tahlili strategiyasi



Figure 5. Organization of the topic "Working in Microsoft Access" through the "SWOT-analysis" strategy.

Nowadays information systems, data banks, websites of pedagogues and students, information resource centers, electronic information-educational resources, virtual laboratories, media and video lessons, electronic document exchange system, video conference communications, online contests on the intranet network serve to make all participants in the system active users, maintain wide implementing of information communication technologies into the educational process.

Thus, the effectiveness of the technology aimed at developing students' abilities through informational educational resources in the “Informatics and digital technologies” educational course has been confirmed during experimental research. As a result of teaching students on the basis of this technology, they have developed the ability to describe and solve the essence of a specific issue as well as, forming skills as bringing and analyzing data into a specific system.

The using of various electronic graphic organizers, within given technical approach, develop the future professional skills of students, helps them in mastering their skills in making conclusions based on a comprehensive and thorough analysis of certain issues. Also, it creates an opportunity to analyze each option given by students for determining acceptable and unacceptable aspects.

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