

MECHANISM FOR INCREASING THE ACTIVITY OF FUTURE COMPUTER SCIENCE TEACHERS

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ABSTRACT:

The system-forming concept of the learning process as a system is the goal of learning, the activity of the teacher, the activity of students and the result. The variable components of this process are the control tools. They include: the content of educational material, teaching methods, material means of learning, organizational forms of learning as a process and educational activities of students. They form a stable unity and integrity, subordinate to the General goals of education. The purpose of training performs a system-forming function of pedagogical activity, since the choice of content, methods, and means of education depends on its definition. The starting point for defining the goal and building a system of tasks. It serves as a specialist model based on the qualification characteristics.

KEYWORDS: computer classes, laboratory classes, methodological systems, ICT tools

INTRODUCTION

The purpose of training is defined as improving the training of future computer science teachers on the basis of special profile disciplines. The content of training in our study is considered as the content of disciplines: "Theory and methods of teaching computer science", "Information and communication technologies in education", "Informatization of education", "Professionally-oriented course for solving problems in computer science". Studying the content of the course "ICT in education", students get acquainted with the work of an interactive whiteboard, create demonstration materials, master the technology of creating electronic textbooks. Currently, schools are equipped with computer classes with an interactive whiteboard, so computer science teachers primarily use it in the process of teaching computer science. To prepare students of the specialty "computer Science", it is necessary to use an interactive whiteboard in the course "Theory and methods of teaching computer science" at the same time as studying the teaching methods of the main sections of computer science, so that students can see in practice all its advantages and ways of using it. Classes in the discipline "Theory and methods of teaching computer science" are becoming more interesting and dynamic. Thus, two tasks are performed: mastering the material for the course "Theory and methods of teaching computer science" and demonstrating the use of an interactive whiteboard in lectures. In the future, the laboratory classes will consolidate the methods of using an interactive whiteboard when writing lesson notes for students on the course "computer Science", and students will be prepared for industrial practice at school and will be able to use all the knowledge they have gained during classes. All content necessarily acquires a form that is interpreted in philosophy as a way of existence and expression of content. Content and form are philosophical categories in which the content, being the defining aspect of the whole, represents the unity of all the constituent elements of the object, its properties, connections, and the form is the way of existence and expression of the content.

MATERIALS AND METHODS

There are four General organizational forms: individual, pair, group, and collective. The nomenclature of organizational forms at the University includes more than twenty titles, including lectures, seminars, colloquiums, workshops, independent work, exams, and many others. The leading form of organization of the educational process in higher education is a lecture. In the pedagogical encyclopedia, the following definition is given: "lecture (from lat. - reading) - systematic, consistent, monological presentation of educational material of a theoretical nature by the teacher. The lecture can be informational, problematic, heuristic, or review. In order to increase interest in the studied discipline, to activate the cognitive activity of students, we recommend that when presenting theoretical material, along with the traditional types of lectures (introductory, overview, lecture — information), other types of lectures are used: problem lectures, conference lectures, and consultation lectures. The forms that complement the lecture method of teaching are laboratory

classes, seminars, colloquiums, and so on. They perform the functions of activating students by fixing and checking the level of learning of educational material in the process of dialogue, interpersonal communication between the teacher and the student. The effectiveness of the educational process of a University depends on the system of applied methods or means of training in their relationship and unity, taking into account the professional specifics of the institution.

From all of the above, we can conclude that the method is a combination of methods and forms of learning aimed at achieving a specific learning goal. Thus, the method contains the method and nature of organizing students' cognitive activity. Modern researchers note that the whole complex of traditional methods is being introduced in higher education.

- explanatory and illustrative;
- reproductive;
- problem presentation;
- partially-search;
- research.

The use of ICT in education creates prerequisites for the introduction of new methods, organizational forms and methodological systems of training into the educational process. There are many new methods and organizational forms of learning that focus on new types of learning activities and new educational results (role-playing games, educational design, credit-modular learning system), the effectiveness of which can be significantly improved when using ICT tools. It is obvious that they should be included in the Arsenal of professional activities of a computer science teacher.

In pedagogical practice, particularly important are the methods of organizing the cognitive activity of students, which ensure the assimilation of certain knowledge, the formation of skills, including those that allow students to apply the knowledge, skills and skills in practice when solving specific life problems. The method of educational projects is one of the methods of creative development of the individual. The main requirements for the use of the project method in teaching students using ICT tools are:

- the presence of a significant research, creative task that requires integrated knowledge, research search for its solution;
- practical, theoretical, cognitive significance of the expected results;
- independent (individual, pair) activity of the student;
- determining the basic knowledge from various fields necessary for working on the project;
- structuring the content of the project;
- using research methods;
- definition of the problem and the research tasks arising from it;
- hypotheses for their solution, discussion of research methods;
- analysis of the obtained data;
- registration of the final results;
- summing up, conclusions, creative reports, etc.

The project Method always involves the solution of a problem involving, on the one hand, the use of various methods, on the other, the integration of knowledge and skills from various fields of science, technology, technology, creative areas. Working with the project method involves not only the presence and awareness of a problem, but also the process of its disclosure. Execution of project tasks promotes:

- the formation of basic knowledge and skills and further their recruitment and development;
- sustainable motivation and a sense of need in the acquisition of new skills required in the work on the project;
- activation of informative activity of pupils, especially in fulfilling the design-computer science;
- development of creative abilities, allowing to implement the project in accordance with his own vision;
- education of initiative in obtaining new knowledge and independence in expanding the scope of their application;
- awareness of students themselves as creators of their own knowledge.

The project method is always focused on independent activities of students, individual, pair, group, which students perform for a certain period of time. In the course of this activity, it is advisable to use ICT tools. This approach is organically combined with the group approach to learning. When implementing the project method, all project activities are directed at the student, and it is not so important whether they intersect with

it at school or at home. Independence in choosing the educational trajectory allows the student to reach a new, higher level of work with information and communication technologies and consider them as a tool for learning and self-development, which, in turn, contributes to the manifestation of social activity of the student. It should also be noted that the feasibility of practical application of such projects proves the significant didactic potential of modern telecommunications systems and appropriate ICT tools used in teaching students. Let's consider the didactic principles that are implemented by means of ICT. The advantages of all ICT tools are their visibility. The visibility of the material increases its assimilation, since all the channels of perception of the trainees are involved: visual, mechanical, auditory and emotional. Currently, with the advent of ICT, the principle of visibility is being transformed into the principle of visualization, and a technology for visualizing educational information is being developed.

The visualization process contributes to the creation of a problem situation, the resolution of which is carried out on the basis of analysis, synthesis, generalization, folding or deployment of information, i.e., with the inclusion of active mental activity. The teacher should use such forms of visibility that not only complement the verbal information, but also act as carriers of meaningful information. The visualized processes become a support for the educational process, during which the interactive whiteboard is the platform of the nearest learning zone. The computer significantly expands the possibilities of presenting information. The main methodological problem of teaching is shifting from "how to tell the material better" to "how to show it better". Robert I. V. as one of the most significant didactic goals, which is most effectively implemented with the use of software for educational purposes, notes computer visualization of educational information and defines: - Computer visualization of the object being studied-a visual representation on the computer screen of the object, its components or their models; - Computer visualization of the process being studied-a visual representation on the computer screen of this process or its model, including hidden in the real world, a representation of the graphical interpretation of the studied regularity of the process being studied.

Implementation of the principle of visibility by means of ICT simultaneously implements the principle of consciousness and activity, since when building the educational process using an interactive whiteboard, students better perceive and understand the essence of the material being studied, as well as increases the mental activity of the student. The implementation of the principle of clarity, and the subject of Informatics, the contents of which lies in various fields of science requires a commitment to learning a particular system, which involves the isolation of target material in leading concepts, philosophical ideas and build their relationships with other concepts and ideas, disclosure of the Genesis of their discovery. Ensuring systematic and consistent learning requires not only deep understanding and logic of the material being studied, but also systematic work on repetition, systematization and generalization of the material. The course "ICT in education" provides an introduction to the didactic basics of creating and using ICT tools, information and search engines in training, and the creation of electronic textbooks.

Conclusion: The use of information technologies allows us to move from traditional technology to a new integrated educational environment that includes all the possibilities of electronic information presentation. Traditionally, lectures use visual teaching tools such as blackboard and chalk, posters and diagrams, and slides. These tools helped in visualizing information and improved the quality of learning to a certain extent. In the conditions of the credit system of training, the volume of theoretical material increases, and the number of hours decreases, so the lecture material should be informative, contain the main ideas that are discussed during the conversation. The task of the teacher is to build a lecture so that the student can understand the essence of the problem, and the additional material would be studied independently. The use of an interactive whiteboard allows you to change the structure of the lesson, which increases the activity of students in the learning process, the quality of assimilation of material. Computers and projectors, however, only solve part of the problem. Psychologists recommend using all the main sensory systems of a person-visual, auditory and kinesthetic (bodily). The latter is of particular importance, it is associated with such a phenomenon as memory, and the ability to bring skills to automatism, i.e., and to the level of the subconscious. Here, devices such as interactive whiteboards come to our aid. The accumulated experience of teaching using an interactive whiteboard can mostly be applied to distance learning, where in most cases only text-based forms of information representation are used, which are not effective for independent study of the material.

An interactive whiteboard is being introduced in the process of studying all disciplines in both General and professional fields of study. To do this, master classes are held on the use of an interactive whiteboard. The experience of conducting classes in this course can be used to train other teachers. Building classes using an interactive whiteboard takes more time and creativity. Computer science teachers conduct integrated lessons with teachers of other disciplines, jointly develop interactive lessons at a higher level, students will see the use of computer science tools in tasks in another area, so the computer science teacher should be able to use an interactive whiteboard, know the methodology of teaching computer science, use their knowledge to train other teachers. training of future teachers of computer science uses one of the interactive whiteboard on the discipline "Theory and methodology of computer science", in which attempts were made to implement visualization, and also uses an electronic textbook for this course, with which students can independently prepare for classes.

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