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PEDAGOGICAL SOFTWARE IN THE PREPARATION OF FUTURE TEACHERS OF INFORMATICS IN AN INNOVATIVE ENVIRONMENT

Abstract: The purpose of the article is a theoretical justification for the formation of professional training of future teachers of computer science on the basis of special profile disciplines by means of information and communication technologies and its practical implementation.

Key words: information, communication, technology, education, interactive whiteboard, laboratory classes, seminars, colloquiums, pedagogical practice, student activities, pedagogical research.

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Introduction

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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. The specialist's model is used, and it is based on the qualification characteristic.

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" simultaneously with the study of 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 the interactive whiteboard when writing lesson notes for students in the course of "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

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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. 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 lecture, conference lecture, consultation lecture. 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.

V.A.Sitarov defines teaching methods as the most important structural components of an integral pedagogical process, including the goals and objectives of training, content, forms of organization of training and its results.

Basova points out that there are more than 200 definitions of the concept of "method" The word method itself in Greek means research, a way, a way to achieve a goal. For example, in the philosophical dictionary it is noted: "method – in the most General sense-a way to achieve the goal, a certain way of ordered activity".

Y.K.Babansky under the method of teaching means "a sequential alternation of ways of interaction between teachers and students, goals through the study of educational material".

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.

Abdurazakov, M.M. believes that one of the most productive methods in teaching computer science is the method of educational projects based on the research activities of students to solve problems from the selected subject area. 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 using 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;
 - identify the basic knowledge from various fields needed to work on the project;
 - structuring the content of the project;
 - using research methods;
 - defining the problem and the research tasks that follow from it;
 - putting forward a hypothesis for their solution, discussing research methods;
 - analyzing the data obtained;
 - making final results;
 - summing up, conclusions, creative reports, etc.
- The project method always involves solving a problem that involves, on the one hand, the use of various methods, on the other, integrating 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 activity of students,

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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.

Pedagogical software is a didactic tool designed to partially or completely automate the educational process with the help of computer technology. They are considered one of the promising forms of increasing the effectiveness of the educational process and are used as a means of teaching modern technology. The composition of pedagogical software includes: a software product (a set of programs), technical and methodological maintenance, additional auxiliary tools aimed at achieving specific didactic goals in the field of educational science.

Pedagogical software tools can be divided into:

- educational programs-the direction of mastering new knowledge based on the level of knowledge and interest of students;
- test programs-are used for the purpose of verification or evaluation of acquired knowledge, qualifications and skills;
- exercises-will serve to repeat and strengthen the previously mastered training material;
- programs that form a virtual learning environment with the participation of a teacher.

The research carried out in the field of physiologic-hygienic acknowledges that the cognitive ability of the learners to work in the computer varies inversely to the size of the data being utilized. This is explained by the following reasons:

- increased load on the organs of vision;
- the fading of the initial mental upheaval that occurs during the reception of news;
- accumulation of negative emotions due to possible uncertainty and error;
- the adoption of a large amount of educational resources hinders the active acquisition of further information resources.

In the development of hypertext documents of pedagogical software tools, software tools such as Microsoft Front-Page (HTML-Hyper Text Markup Language), Alliare Home Site (HTML), Microsoft Power Point, Microsoft Word are used.

When creating educational materials on the basic concepts of the subject, it will be necessary to use programs that work with raster or vector drawings. They include Corel Draw, Corel Xara, Corel Photo Paint, Adobe Photo Shop, Adobe Illustrator etc.

When creating training materials with dynamic illustrations, special programs such as Disreet 3D Studio MAX, Alais Wave Front, Maya, Light Wave, SoftImage 3d, Adobe Image Ready, Gif Animator, Macromedia Flash, Adobe Premier are used.

Voice process presentation and sound editing are done using Sonicundundry SoundForge, Wavelab, Sound Recorder and other software.

Pedagogical software is a didactic tool designed to partially or completely automate the educational process with the help of computer technology. They are considered one of the promising forms of increasing the effectiveness of the educational process and are used as a means of teaching modern technology. The composition of pedagogical software includes: a software product (a set of programs), technical and methodological maintenance, additional auxiliary tools aimed at achieving specific didactic goals in the field of educational science.

Through special tests, animations, electron training complexes, video lessons, electron textbooks, etc., the reader can learn, complete and engage independently. Such lessons can be created in different programs. These are examples of programs such as comtaze, Photoshop, SnepAshompo, iSpring, Auto Play, CourseLab, Maple, adobe Photoshop, my test, PowerPoint.

The composition of pedagogical software includes all materials used in the educational process. For example, textbooks, manuals, electron majmua, science videos, audios, various programs and materials prepared in them. We can also give examples of pedagogical technology to these. In the lessons, we can often use sinkveyn, venn diagram, cluster, t scheme, staircase, boomerang, lily flower, fish skeleton, etc., and these are examples of pedagogical technologies. In the case of pedagogical software, the science includes programs that create the necessary resources and programs that are used in the same lesson. First of all, the office software package includes maple, matcad, iSpring, courselab, autoplay, mytest and others.

The first task of the educator is to give knowledge and education to the student. Ensuring that students are not bored and not bored during the lesson is also one of the main tasks of the teacher. Sometimes I give more knowledge to students and teach them that it can lead them to a state of exhaustion. This leads to their health and a decrease in the level of knowledge.

The research carried out in the field of physiologic-hygienic have expressed the opinion on the reasons why cognitive performance in computer work is reversed to the size of the data to which the cognitive ability is utilized:

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There is an increase in the load on the eyes, a decrease in the level of mental upheavals in the reception of news, a decrease in the mood in oneself in the direction of the mistakes of the work done, the reception of a large amount of information will interfere with the reception of information after it.

Many programs can be used when creating pedagogical programming tools in programming languages. It is possible to illustrate Microsoft Front-Page (HTML-Hyper Text Markup Language), Alliare Home Site (HTML), Delphi, CQQ, visual base, html and other programs.

The following contents can be included in the programs for the creation of pedagogical programming tools. Microsoft Front-Page (HTML-Hyper Text Markup Language), Alliare Home Site (HTML), Microsoft Power Point, Microsoft Word, Corel Draw, Corel Xara, Corel Photo Paint, Adobe Photo Shop, Adobe Illustrator, Disreet 3D Studio MAX, Alais Wave Front, Maya ,aya Wave, SoftImage 3d, Adobe Image Ready, Gif Animator, Macromedia Flash, Adobe Premier, Wave Lab, Sound it is possible to use software tools such as recorder, Macromedia Flash.

PDV, test programs, training programs, exercise equipment, didactic requirements for PDV.

Pedagogical software is a didactic tool designed to partially or completely automate the educational process with the help of computer technology.

Educational programs-the direction of mastering new knowledge based on the level of knowledge and interest of studentstiradi;

Test programs-are used for the purpose of verification or evaluation of acquired knowledge, qualifications and skills;

Exercises-will serve to repeat and strengthen the previously mastered training material;

Didactic requirements for PDV: continuity and integrity, coherence, problem solving, visualization, activation, consolidation of mastering the results of training, interoperability of communication, the holistic unity of teaching, upbringing, development and practice, along with a clear, understandable, systematic description.

Modern software tools and methods of working with a variety of information posted on the Internet make it possible to solve pedagogical problems in a new way. To do this, the teacher only needs to master one or two application programs. Conclusions: "Pedagogical system of formation of professional training of future teachers" reveals the content of the educational system to implement the model, training and methodological support of improvement of professional training of future teachers of Informatics on the basis of majors by means of information and communication technologies.

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