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INFORMATICS IN UNIVERSAL EDUCATION SCHOOLS USE OF PEDAGOGICAL SOFTWARE AND PEDAGOGICAL TECHNOLOGIES IN TEACHING

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ABSTRACT

Current problems of teaching informatics in modern schools were considered, and prospects for their solution were revealed. Ways of using pedagogical software in the process of computer science education are shown.

KEYWORDS

Pedagogical software tools, pedagogical technologies, informatics, didactic goal, information culture, systematic nature of informatics, concept, Adobe Illustrator, vector, outline, raster.

Introduction

Pedagogical software tools are didactic tools designed for partial or complete automation of the educational process with the help of computer technologies. They are considered one of the promising forms of increasing the effectiveness of the educational process and are used as teaching tools of modern technologies.

Pedagogical software tools include: a software product (set of programs) aimed at achieving specific didactic goals in a subject, technical and methodical support, additional and auxiliary tools. The creation of pedagogical software tools is carried out in several stages:

Pedagogical design is carried out at the first stage. In this, the goal, pedagogical tasks are clarified the content and structure of teaching are analyzed based on didactic possibilities.

In the second stage, methodical design is performed. At this stage, scientific theoretical information is transformed into educational materials, educational texts, illustrations, and graphic information are formed. Forms of educational materials suitable for the purpose, methods and tasks of education are developed, areas of use of electronic educational materials such as local, network, distance education are determined.

In the third stage, the necessary software tools for the formation of pedagogical software tools are created or selected. In this, the methods of communication between the user and the computer, the shell and the environment of the software tool are comparatively analyzed.

In the fourth stage, elements of pedagogical technologies are included in the pedagogical software tools. Methods of using pedagogical software tools in the educational process are designed and

developed. A scenario of communication between the user and the computer is created, forms of feedback, knowledge diagnostics, presentation of training results are developed.

In the fifth stage, pedagogical software tools with given pedagogical properties are developed. In this process, the control elements of pedagogical software tools are created, and the database is formed on the subject. In the sixth stage, the created pedagogical software tools are applied to the educational process, necessary changes and corrections are made to their software and methodological components. The results of the introduction of pedagogical software tools are analyzed, pedagogical possibilities are determined.

All pedagogical software tools can be divided into two groups: tools that support traditional pedagogical technologies; "Teacher-computer-student" three-element pedagogical system technologies. The system requirements for the first group of pedagogical software tools arise from the pedagogue's tasks related to the organization of an effective educational process. In order to implement the technology of creating pedagogical software tools, there are a number of positive factors that confirm their superiority over traditional tools. These factors are divided into didactic, psychological, economic and physiological groups.

Taking into account the principles that must be followed when creating pedagogical software tools (quantization, completeness, visualization, networkability, control, customization, computer support, stackability), the design of the technology for their creation includes the following stages:

1) development of the concept (development of the main idea of creating pedagogical software tools based on the standard of science and training methodology, creating its meaningful part);

2) designing (developing a working model, a set of templates of information blocks and screen forms, an orderly scheme of the structure of hyperapplications ensuring interactivity of applications);

3) design of screen form and information blocks (construction of a design structure in accordance with the specific educational process, psychological-pedagogical characteristics, ergonomic requirements, structure and content of educational materials);

4) filling in the elements of the application structure (placing the prepared materials in the developed templates and screen forms, filling in the application system and organizing feedback with the user);

5) testing and tuning (checking the correctness of communication in each application and the correctness of the program's response to user actions);

6) application to the educational process.

With the help of special programs, it was possible to draw pictures on the computer screen with the help of a mouse, that is, to create images, correct them and move them, just like drawing various pictures with a pen or brush on a sheet of white paper. These programs are considered drawing programs or graphic editors, with the help of which elements of the image are managed. One such program is Adobe Illustrator.

This program offers the following opportunities:

- The function of extracting illustrations;
- Ability to draw in perspective;
- Ability to automatically align text;
- Adjustable instrument panel;
- Possibility of manual control of the pixel grid;
- Output of cascading tables and styles;

- Convert images to vector graphics;
- Ability to create gradients for logos;
- Work on projects using the touch screen of mobile devices;
- Using several assembly areas (separately or together).

Adobe Illustrator has its own features, advantages and disadvantages like any other software.

Its advantages include:

- Creating vector patterns;
- Open raster images;
- Working with character clarity;
- Intuitive comprehensibility of control elements;
- High clarity of contours and lines;
- Tight integration with other Adobe products;
- Creating complex figures and dynamic objects;
- Allows processing of large and heavy files;
- Supports a large number of graphics formats.

Disadvantages of Adobe Illustrator include:

- License price;
- Length of installation time;
- Time of temporary use - 7 days;
- New features and extensive capabilities of Illustrator are only available in the full version.

Pedagogical technology is a systematic method of creating, applying and determining the entire process of teaching and knowledge acquisition, taking into account technical resources and human interaction, which sets itself the task of optimizing educational forms.

Pedagogical technologies are divided into types according to types of continuous education, fields of education, and certain characteristics.

Types of continuing education: preschool education, primary education, basic education, extracurricular education, secondary special education, vocational education, higher education lim, retraining and advanced education are divided into pedagogical technologies. At the same time, there are pedagogical technologies of native language, foreign languages, literature, social, natural, concrete sciences, art, sports, technology, technology, applied sciences, professions, special education in the fields of education. .

Currently available pedagogical technologies are divided into types based on several characteristics. Before talking about these signs, we should mention that pedagogical technology always has a complex character, it does not use only one factor, method, principle. That is, there are no monotechnologies specific to the types listed below. But in each pedagogical technology, as a result of focusing on one or another aspect of the educational process, they are divided into types according to these characteristics.

Types of pedagogical technologies for managing cognitive activity:

1. Classical lecture;
2. Teaching with the help of technical means;
3. Advisory system;
4. Teaching according to the textbook;

5. System of small groups;
6. Teaching with the help of a computer
7. Tutoring system;
8. Programmable control.

Pedagogical technologies according to the type of approach to the learner are named as follows:

1. Authoritarian;
2. Didactic oriented;
3. Socially oriented;
4. Anthropologically oriented;
5. Pedagogically oriented;
6. Person-oriented;
7. Oriented to humanity and the individual;
8. Focused on cooperation technologies;
9. Focused on free education;
10. Oriented to esoteric education and training.
11. According to the main method used, pedagogical technologies are divided into the following types:
12. Dogmatic, reproductive method;
13. Explanation, demonstrative;
14. Developmental education;
15. Problematic, inquisitive;
16. Creative method;
17. Programmed educational method;
18. Dialogue method;
19. Game method;
20. Self-developing educational method;
21. Informational (computer) method of education

According to organizational forms, pedagogical technologies are divided into the following types:

1. Current traditional education;
2. Pedagogical technologies based on a person-oriented pedagogical process;
3. Pedagogical technologies based on activation and acceleration of students' activities;
4. Pedagogical technologies based on the effectiveness of management and organization of the educational process;
5. Pedagogical technologies based on didactic improvement and reconstruction of the material;
6. Pedagogical technologies of special subjects;
7. Alternative technologies;
8. Technologies adapted to nature;
9. Developing educational technologies;
10. Pedagogical technologies of authorship schools;
11. Technology design and mastering technologies.
12. In addition, pedagogical technologies are divided into the following types based on the orientation to the composition of the characteristics and qualities of a person:

13. Oriented to the formation of knowledge and skills in the sciences - information technologies;
14. Operational technologies aimed at forming methods of mental activity;
15. Emotional-artistic and emotional moral technologies aimed at forming the field of aesthetic and moral relations;
16. Self-development technologies aimed at forming mechanisms of personal self-development;
17. Heuristic technologies aimed at developing creative abilities;
18. Applied technologies aimed at developing the field of practical activity.

Pedagogical technologies are classified according to the following characteristics:
1. According to the level of application;
2. According to the philosophical basis;
3. According to the main development factor;
4. On the concept of appropriation;
5. According to personal characteristics;
6. According to the characteristics of the content;
7. By type of management;
8. On the approach to the child;
9. According to widely used methods;
10. By categories of learners.

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