CREATION OF MULTIMEDIA ELECTRONIC EDUCATIONAL METHODOLOGICAL COMPLEXES FOR THE COURSE OF INFORMATICS

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Annotation

The article gives a definition of the educational-methodical complex (TMC) as one of the types of electronic textbook of modern computer teaching aids, considers the main functions that must be solved by the TMC in the discipline "Informatics" for students of the direction of "Preschool education", and also suggests the main stages of its application.

Key words: electronic textbook, educational and methodological complex, hypertext structure, multimedia capabilities, knowledge control.

Introduction

Creation and organization of training courses using e-learning tools, especially based on Internet technologies, is a difficult technological and methodological task. At the same time, large labor costs for the development of e-learning tools are often not compensated for by their effectiveness due to their rapid obsolescence. Nevertheless, the industry of computer educational and methodological materials is expanding due to their demand and social significance.

In this regard, the development of concepts for the construction and use of multimedia teaching aids that are adequate to modern ideas for the development of education is relevant.

One of the most popular computer-aided teaching tools are electronic textbooks, which make it possible to implement the functions of teaching, self-study, demonstration of the studied material, training in the application of the studied material, control and self-control, systematization of acquired knowledge, and thus being a multipurpose teaching tool.

Theoretical background

An electronic textbook is a comprehensive training program that ensures the continuity and completeness of the didactic learning process, provides theoretical material, provides training educational activities and control of the level of knowledge, as well as an information retrieval function, mathematical and simulation modeling with computer visualization and service functions provided interactive feedback [1-4].

An electronic textbook, as opposed to a "paper" one, is a tool for teaching and learning, its structure and content depends on the purposes of its use. He is both a tutor, a simulator and a tutorial. It acquires special significance when used in telecommunication systems.

Main part

Many teachers are inclined to expect an increase in the intensification of the educational process through the use of electronic textbooks, which can affect:

- increasing focus;
- increased motivation;
- increasing the informative capacity of educational content;
- activation of educational and cognitive activity of trainees;
- acceleration of the pace of training activities.

An electronic textbook is effective when:

- there is almost instant feedback;
- it is possible to quickly search for the necessary reference information;
- there are demos and models;
- there is control.

Democratization of society, including education, informatization of all spheres of human activity have created the preconditions for the creation of a new generation of textbooks - interactive educational and methodological complexes on electronic media.

A modern educational multimedia complex (TMC) is an integral didactic system, consisting of various electronic educational materials, using computer technologies and the capabilities of the Internet and providing training and management of the student learning process according to individual and optimal curricula [2].

Analyses

EMC on the discipline "Informatics" for students of the direction of "Preschool education" combines the following functions:

Informational: provide information in the learning process based on the use of electronic presentations, symbolic and animated objects, business graphics, information databases.

Organizational: the organization of the purposeful development of educational material based on a differentiated-variable model of the educational process.

Motivational: to motivate the process of consciously mastering the educational material both in the classroom under the guidance of a teacher and outside the classroom.

Transformational: mastering educational material, its interiorization and exteriorization based on modern achievements of scientific and technological progress and accessibility.

Educational: fostering a responsible attitude and a creative approach to work; economic culture and business ethics.

Developing: development of professionally important personality traits of trainees, their outlook and intellectual potential.

Coordinating: combining in an information product the possibilities of many teaching aids (hypertext, diagrams, tables, diagrams, electronic presentations, etc.), their dosed and sequential presentation.

Systematizing: consistent and logical presentation of educational material, taking into account the possibilities and interests of consumers, of sufficient scientific and technological significance.

Integrating: integration of various didactic tools with the ability to consistently dosed presentation of the required educational material.

Controlling: providing various forms of control of students' knowledge at all stages of the educational process.

Polyative: the possibility of using this educational and methodological complex at all levels of education, in the process of self - and mutual learning, individually and collectively.

In the structure of the developed teaching materials for the discipline "Informatics" five large interconnected blocks can be distinguished (Fig. 1), each of which has its own methodological, didactic and functional load:

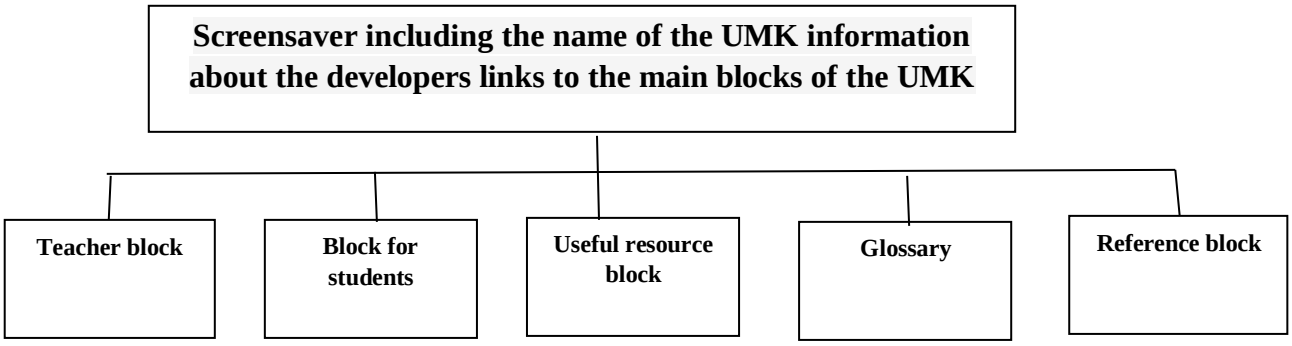

Figure: 1. Block diagram of teaching materials for the discipline "Informatics".

1. Block for the teacher - an electronic methodological manual, which includes the goal and objectives of the course being studied, the course program; requirements of state standards, guidelines for the use of teaching materials in the educational process; list of recommended literature, recommendations for practical work with control tasks and testing.

2. Block for students - a theoretical and practical block, which includes a textbook with control questions for each topic; lecture course accompanied by presentations; a problem book containing three-level assignments for all topics of the course.

3. Library of useful resources, which includes links to internal and external information resources.

4. Glossary (glossary of terms) - containing all the basic concepts used in other blocks;

5. Help block - support for the UMK user.

The development of the UMK "Informatika" contains the following stages:

1st stage. Preparation of texts for teaching materials.

At this stage, first of all, in accordance with the program, the place of the created information product in the educational process was determined, goals and objectives were formulated,

and in accordance with the E-selection of literature on the topic was made, a basic textbook was selected - the basis of the developed teaching materials.

After the selection and analysis of the main and auxiliary material for the preparation of the electronic educational complex in "Informatics", a structural diagram of the course is drawn up, consisting of blocks, parts, chapters and paragraphs. Each structural unit is assigned its own name and the layout of logically related structural units is defined.

For each paragraph and section of the textbook, control questions (questions for self-examination) are compiled, with the help of which feedback is realized in the learning process.

Each paragraph ends with conclusions and conclusions that correspond to the objectives of the study of this topic formulated at the beginning.

The block for students contains a preface to the textbook and lectures, which indicates the purpose of including this material in the teaching materials, its compliance with the state educational standard.

The stage ends with stylistic editing and control of the reliability, adequacy and relevance of the selected material.

2nd stage. Script writing.

The course script is written based on the materials used in this tutorial.

According to the developed scenario, the educational complex "Informatika" should solve the following tasks:

- ensuring a consistent and systematic presentation of educational material with a choice of pace and depth of study;
- guidance of independent educational work of students;
- quality control of knowledge assimilation;
- ensuring effective information retrieval.

To solve these problems, the teaching materials use a problem presentation of educational material with two possible ways of considering it: the basic level and the level of increased complexity, providing for a more in-depth study. The presence of two levels is realized with the help of clear structuring of the material, the presence of hyperlinks and dosage in the presentation of the material on the screen. The student can choose the level of complexity of the presentation of the educational material and, accordingly, the level of difficulty of the questions during the control (self-control) of the assimilation of the educational material.

For the convenience of navigation through the UMK "Informatika", transitions are provided by hyperlinks within a paragraph, chapter, and in separate blocks.

Results

All concepts and definitions used are explained outside the main text (links open in a new window), and access to them is provided using hyperlinks directly from the text of lectures or a textbook. It is also provided to work with the dictionary as with an independent block of

teaching materials. The transition to the dictionary is possible from the title page or using the navigation panel from any block of the teaching materials.

3rd stage - quality control of the developed teaching materials

Quality control of performance is carried out in the following areas: content, didactic content, forms of presentation of educational material, design, etc.

When choosing a method of design of teaching materials, the emphasis is placed, first of all, on functionality and priority of educational goals.

During the development of the Informatika teaching and learning method, special attention is paid to the design and filling of the title page (main page). This page serves as a link between the various blocks of the UMC and allows you to go to any of them when you open the UMC. In addition, the title page should give an idea about the course in general, about the authors and developers, focus on the effective work of users who do not have a lot of experience in using e-learning tools.

For this purpose, the title page contains:

1. Link to information about the training center where the development was carried out, information about the authors and developers of the electronic educational publication.
2. The name of the course for which the textbook was made.
3. Link to the list (menu) of the main blocks of the teaching materials.
4. Calling up help on working with the teaching materials.

Focusing on the proposed placement of the educational complex "Informatika" in the Internet, it is necessary to provide for the heterogeneity of the hardware for the prospective users of the developed educational complex and the variety of software tools used.

Considering that the majority of Internet users use the Internet Explore browser: this particular browser was chosen as the base for the design development.

An educational multimedia complex for the discipline "Informatics" must have the following qualities:

- a developed hypertext structure in the conceptual part of the course (definitions, concepts), as well as in the logical structure of presentation (sequence, interconnection of parts);
- user-friendly navigation system that allows him to easily navigate the course, send emails to the teacher, go to the discussion section;
- using the multimedia capabilities of modern computers and the Internet (graphic inserts, animation, sound, if necessary, etc.);
- the presence of a knowledge control subsystem built into the textbook;
- breaking down the course into small blocks (pages);
- the presence of a glossary (stand-alone reference materials) and links to the glossary developed for this course, its individual modules or a series of courses;
- links to literary sources, electronic libraries and sources of information on the Internet;
- accessibility - fast loading, without complication with effects;

- effective feedback from the teacher (e-mail, Web conferencing, IRC technologies (chat)) IRC (Internet Relay Chat) - a tool for conversations over the Internet in real time, which allows you to talk with other people around the world in direct dialogue mode (most often using a set of phrases on a computer keyboard).

The issue of choosing technologies for the implementation of teaching materials is rather complicated; it requires the most thorough and comprehensive analysis to select an approach to its implementation.

When choosing technologies, it is necessary to consider:

- user requirements;
- requirements of the author of the electronic textbook;
- the requirements of the methodologist working on the teaching materials;
- requirements for the organization of the design and structure of the textbook [3].

Conclusions

All restrictions can be reduced to the following formulation: a modern electronic textbook should be convenient, visual, complete, modular, with a well-thought-out structure and navigation, meeting all methodological requirements, author's requests, as well as support and development requirements, and, moreover, be implemented in the most in a practical way.

Thus, the advent of multimedia is bringing about significant changes in education. The multimedia possibilities are endless. Thanks to the presence of feedback and a lively communication environment, multimedia-based learning systems are incredibly effective and significantly increase the motivation for learning.

EMC in the discipline "Informatics" for students of the direction "Primary education" allows to ensure not only the successful mastering of the program in informatics, but also to form them at a qualitatively new level and in a larger volume, that is, to ensure the achievement of a new, higher quality of education in higher education professional educational institutions.

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