The Importance of E-Textbooks in Teaching Computer Graphics

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ABSTRACT

This article discusses the importance of using an electronic textbook in teaching Computer Graphics. The article describes the possibilities of e-textbooks.

Keywords: Electronic Textbook, Graphics, Algorithms, Resource, Control Work, Module

The subject of “Computer Graphics” serves as a basis for teaching engineering, architecture, design, art education, technical graphics and other professional disciplines, and is an important resource in the training of specialists in these areas.

As is the case with all subjects, the use of modern information technology in the teaching of computer graphics is one of the important conditions for increasing the effectiveness of teaching this subject. The e-textbook for teaching Computer Graphics is primarily intended for students studying the subject independently. Students can use this textbook to study all or some of the topics covered in the program independently and under the supervision of a teacher. Teachers can use the textbook to individualize the teaching process and tailor it to the student's needs. Teachers can also use the textbook to conduct extracurricular activities or to dig deeper into certain topics. The electronic textbook consists of the following components:

- The main resource module contains training materials, practical assignments, visual resources on all topics. The module has a user-friendly programming interface for selecting and reading educational materials on topics;

In the student support module, students can use self-assessment tools on topics they have studied independently. To do this, control test questions are provided at the end of each topic. The test program is designed to be interactive. The student can complete the test tasks several times and answer the questions. Upon completion of the test, the student can see the results of the test directly in the computer window. This module is logically linked to the previous module;

- The final control module is designed for the final assessment of the level of mastery of the course. The final control is in the form of a test. Test results are recorded in a special database. This module acts as an integral part of Module 2 and is then linked to Module 4;

- Student enrollment and mastering module is designed to enroll students using the textbook. At the same time, this module collects information about the learner's mastery. The results of modules 2 and 3 are recorded. The module is planned to be used by the teacher in addition to the learners;

-In this module, the module is planned to be used by the teacher in addition to the learners. The teacher can make some adjustments to the teaching process based on the current learning outcomes. The information in the module provides flexibility in the learning process;

The capacity adjustment module is directly linked to the previous module, providing the flexibility mentioned above. In this case, the teacher can adjust the various possibilities of the textbook and adapt it to the student. Such opportunities include:

a) to present educational materials in different sequences depending on the needs of users, to organize the sequence of the learning process in non-linear forms;

b) adjusting the parameters of the test program depending on the level of mastery of the student;

c) a step-by-step organization of the learning process and setting criteria for the transition from one stage to the next;

d) to carry out the evaluation process in the form of a rating, to select the weights of the parts that make up the final grade.

The e-textbook allows you to organize the study of topics related to the subject of "Computer Graphics" in a non-linear, non-rigid sequence. Depending on the needs of the students, they determine the order of studying the course materials by themselves or with the help of the teacher. The teacher checks the assignments and drawings completed by the students during the study of the textbook and gives the necessary advice. At the same time, the teacher will be able to regularly monitor the level of mastery of the student with the help of e-textbooks.

The following is a schematic description of one of the algorithms used in the organization of the learning process on the basis of the electronic textbook. In this case, the final grade of the student consists of the sum of the rating points earned in the stages and the points in the final examination.

The use of learning resources in the above-mentioned ways is especially useful in distance learning. Learners of computer graphics knowledge and skills are independent, but can be acquired with the help and supervision of a teacher tutor. The e-textbook has all the necessary features for distance learning. It is clear and concise.

The student can find the answers to all the questions in the course of acquaintance with the course in the textbook.

One of the advantages of distance learning is that it determines the sequence and speed of learning materials, either by itself or with the help of a tutor, depending on the need and ability. The developed e-textbook makes it possible. The tutor can be a science teacher. Because distance education is primarily a system for independent learning, the learner needs to be regularly informed of the extent to which he or she is mastering the learning materials. The follow-up test questions in each e-textbook are useful for learners to quickly determine how well they have mastered the material they have read and, if necessary, to determine which topics need to be reviewed. is a tool.

In distance learning, learner support, including educational or administrative support, is critical. The Computer Graphics e-textbook has the potential to do just that.

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