COMPUTER TRAINING SYSTEMS

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Abstract. Today, we can boldly say that the use of computer technology provides a huge opportunity for the development of the educational process, the mainstay of which is the formation of an information-educational environment based on computer information sources, electronic libraries, video and audio libraries, electronic textbooks, video conferencing and other supplements of educational fields.
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Modern educational requirements, with their existing problems and future development prospects, make us think about how to achieve ever greater improvement and efficiency in the learning process. How and by what means to carry out the teaching process so that the student has a desire and aspiration for knowledge.

The technology-enriched learning environment provides:

- Mastering and effective use of modern information-computer and pedagogical technologies by students;
- Formation of a learning environment enriched with modern information and pedagogical technologies;
- High level of professional development of professors in accordance with modern educational and market needs.

Today, representatives of both educational institutions and powerful enterprises are deeply convinced that special rooms of virtual equipment with electronic simulators are a promising tool that, in special conditions, significantly increases the effectiveness of training, as well as the quality of products manufactured at enterprises [6, 7, 8]. It is clear that special conditions relate to the individual characteristics of the student/student, his/her level of competence and motivation, compliance with educational requirements and the purpose of learning. It is these features that have

been (and remain) the focus of attention throughout the history of the development and creation of training coaches.

As for the virtual models of technological processes, the purpose of these models is to achieve a high quality of the technological process, high efficiency of the work of each unit, to determine in advance the risk of expected accidents and measures to avoid them.

Training exercises or simulation exercises have a long history. The greatest peak in the creation of virtual simulators is the beginning of 2000. This direction has gained more and more foothold in all fields. The use of computer training in the educational process, as one of the main innovative directions of the ongoing reform in the education system, is quite successful and has an even greater perspective. At the same time, it is clear that scientific-practical research in this area has not yet been completed and this direction has not yet been thoroughly studied and generalized.

Modern information and computer technologies make it possible to simulate the real reality of the object under study using a variety of multimedia devices. You can create in virtual reality using completely different devices. Virtual reality systems are actively used in completely different fields. Such systems in science allow various studies to be carried out, the design of a product to be developed in production, as well as to protest it by simulating a real physical law. Such systems are also actively used to create various simulators and to perform virtual laboratory work. Computer (electronic) trainers are in the first place among the virtual reality creation systems.

Computer training (training devices, simulators) systems design industry belongs to the class of electronic interactive learning systems. The development of these systems takes a very short time, therefore, it can be said that it is in the initial stage. The mechanism of operation of computer training systems is modern computers and computer programs. Therefore, both the pace of development, the quality and the consumer features of this system in the field of education are related to the perfection of the software design methodology. The latter is evolving with the modern trends of the world software industry, the basis of which is the development of modern and powerful software systems. The main goal of designing computer training systems is to create a complete architecture focused on educational processes, the sustainability of which is

conditioned by adapting to the educational needs and adhering to the object-oriented principles of project implementation.

According to the scientific literature we have searched, the systematic analysis of the most productive projects of computer training systems implemented in the field of education, which were created and implemented with the participation of various authors, has enabled us to identify several project samples. This showed us that one of the solutions to the repeated use of analogy in the design models of computer training systems was to use a structural pattern decorator to combine objects to obtain new functionality.

For object-oriented models of computer training systems designed to assimilate and further control students' knowledge, a training assignment generator must be pre-defined, the operation of which is provided by a special program. At the same time, an algorithm for generating the issuance of training and control tasks should be included in the system. If the system algorithm solves the same problem conceptually, but the methods of solving are differ from each other, then it is relevant to use the mechanism for determining the family of algorithms. In this case, each of them must be encapsulated (bordered) and any algorithm must be interchanged. In order to identify task processing algorithms as well as to process changes in algorithms, it is advisable to use an effective analogy (pattern or template) that allows us to change the chosen algorithm independently of the modules it uses. Most important is the general analysis of the primary object detection tool, which identifies the design solution strategy, which defines the object-oriented design of computer training systems, the task set generation algorithm, the individual algorithm selection procedures, and its implementation.

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