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Section 3. Information technology

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Classification and analysis of computer programs for the physical preparation of athletes and expasure of prospects for their studies

Abstract: The analysis of existing computer programs and scientific research on physical training for assessing the completeness of the application of computer technology for the development of the concept of creation and use of educational computer programs on national sports (Kurash, kasharman, shullik and others).

Keywords: computer programs, classification, training programs, electronic textbooks

The introduction of modern computer technology and means of transmitting information in various spheres of human activity in order to improve their effectiveness led to the emergence of fundamentally new ways to implement these activities. These methods are based on the extensive use of the unique capabilities of computer equipment for the collection, processing, storage and presentation of information are combined in the concept of the new information technologies [1]. Broad prospects for the new information technologies are being open in teaching area. The objective prerequisite for this is information essence of the learning process, in which a special place belongs to a different type of information exchange between the teacher and students. According to opinion of experts, the use of new information technologies in teaching and pedagogical process represents, a new stage in the theory and practice of pedagogy. Aspiration of progressive educators to meet the growing needs of the society in education by making use of the potential of new information technologies brings to life and new forms of learning. One such form is teaching using software [2].

Computer programs can be categorized by content of direction, features of usage, method of presentation of the material (Figure 1).
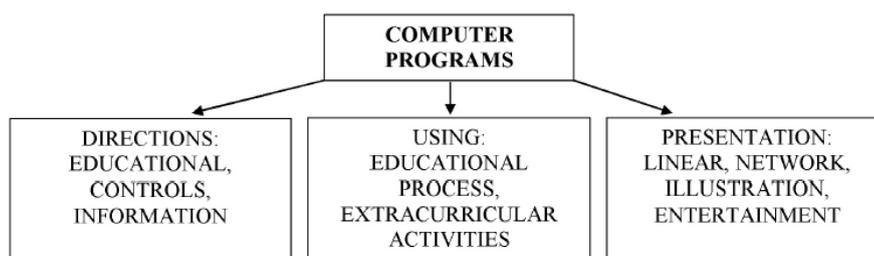
Fig. 1. Classification of computer programs

The classification of computer programs in direction laid the main purpose of the computer program contained in the title: teaching — for learning; control — for control; information — for receiving information. This division, of course, rough and not absolute, as almost every training program is the controlling and to what extent the information. Similar examples can be cited in other programs, although there are programs that work like stand-alone — only one type. To streamline the software offer to refer them to one or another type of the main tasks of the program.

Educational computer programs are divided into electronic books and electronic manuals. As a rule, computer programs include various types of illustrative presentation of material: static type planar animation and video in a computer animation or complex — media (various combinations of audio, video, animation, etc.).

Monitoring computer software can be divided into three areas: — management; — Control of knowledge; — Control of the individual systems.

Information Computer programs can be integrated into training or monitoring programs and autonomous. Information Computer programs can be categorized as follows: — Reference bibliographic; — Encyclopedic; — Target highly specific, and others.

By the way of accessing the program can be open or closed. For owners, exactly for developers, these programs are usually open, and for users can be open and closed.

Most computer programs designed for the educational process, can be used in teaching and in extracurricular process, although there are exceptions [3].

Consider some software on physical training.

Computer program "Athlete"

Computer program "Athlete" — a training and is designed on the principle of a network of presentation (hypertext system).

The "Athlete" has not got data model, which would have served as a framework for storing information, i. e. no hard algorithm scrolling text. A student or a teacher, working with the program, establishes those connections, the sequence of which are considered essential that maximizes the use of an individual approach to learning. The program is developed on 4 levels, which facilitates orientation at work with her, but at the same time allows the student to select his/her level of learning.

The "Athlete" includes both planar animation (Fig. 2) and screens with the video clips animation.

Fig. 2. The screen of the computer program «Athlete» section — muscles

Evaluation of mastering of theoretical material allows the teacher to engage in or to identify the degree of assimilation of acquired knowledge for the course "athletic training" in percent (100% taken the absence of errors in the answers to test questions).

In the part of "Recommended Literature", learner can choose publication which is interested and can read the summary and get acquainted with table of contents of the selected book [4].

The computer program "Techniques of throwing grenades"

The computer program "Techniques of throwing grenades," prepared for the detailed learning of throwing a grenade from his knee and allows any speed viewed from three different sides of the implementation of the sports movement (Fig. 3).

This type technology demonstration movement favorably with video that eliminated all minor objects and when the movement focuses on the main elements [4,5].

Fig. 3. Screen of computer programs «Technology throwing grenades»

The whole complex of computer programs developed by the Russian State Academy of Physical Culture. At the University after N. E. Bauman was created information-methodical system, operating in an interactive mode. The computer program performs three main tasks: — monitoring and control of the progress of the educational process; — The establishment and maintenance of methodological and information documents in a database; — Searching for and reading information.

Group experts prepared a computer system for operational planning training in middle distance runners for up to two months for the obschepodgotovitelnogo and precompetitive stages of preparation [6].

In St. Petersburg State Technical University and Samara State Aerospace University. after S.P Koroleva for several years was create computer software for use in the educational process in the discipline "Physical training". Thus, in the Inter-University Center for Physical Culture in 2001 was completed the computerization of all the theoretical material on the discipline "Physical Culture", which included theoretical and methodological materials, static illustrations, software, and video clips.

Solving the problem of convenient storage of the results of pedagogical diagnosis with the assessment indicators introduced, with the possibility of comparing individual indicators in the dynamics or between the various athletes with example of gymnastics taken in the Russian State Academy of Physical Culture. In fact, this information program, but with elements of assessment [7, 8].

Computer technology began to be used in sports activities much earlier than in the teaching process of physical education. A number of sports computers have become part of the process as preparation of athletes [9].

So, with the help of computer technology in the St. Petersburg Research Institute of Physical Culture are realizing monitoring and training rowing technique. This program can be used as the selection system. Also, for a system of selection, but not in a particular sport, but almost in all forms, is an automated control system of standardized assessment of the level of development of motor functions [10].

Teachers Uzbek State Institute of Physical Culture developed for the educational process of their high school educational software: "Mathematical Statistics", "Sport Metrology", "Biomechanics", "control of knowledge of students".

Thus, we note that at present the role of computer programs has a significant place in the theoretical and practical preparation of hardened athletes. They also allow athletes to strengthen their theoretical knowledge in practice and applying as a consequence improve athletic performance. Using computer software can control the entire process of preparing the athletes and diagnose the overall physical condition of athletes. In addition also highlighted that the computer program and the process of training of athletes is inseparably mutually-linked and it pays off today.

Analysis of existing scientific research allowed to evaluate the completeness of an exemplary application of computer technology and will be the basis for the development of the concept of creation and use of computer programs to train national sports (Kurash, kasharman, shullik and others).

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