Sports Training of Light Athletes in Modern Information Technologies

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Abstract: the article examines how, with the help of computer modeling and forecasting, it is possible not only to make significant adjustments to the educational and training process, but also, based on the information received, it is possible to carry out pedagogical analysis of individual movements directly during training.

Key words: technique, speed skills, athletics, information technology, technology.

Sports competitions of robots significantly affect the history of sports itself, specialists get the opportunity to accurately look at the mechanisms of muscular activity, simulate the tactical and technical activities of athletes.

Modern technologies have an excellent style of educational activity and sports training process, which turn out to be more psychologically acceptable, comfortable, mobilizing creative opportunities, intellectual and physical potential of students.

The main directions of using information technology in athletics are personal development, training of future specialists in the information society.

Technology in athletics is used as a learning tool to improve the training process. Scientific research, correction of the results of educational and training activities, computer testing of the mental, functional, physical and psychological states of the athletes involved.

Recently, increased attention has been paid to improving the quality of technical training of athletes. The development of systems to enhance this aspect is carried out in the direction of creating individual software and hardware complexes that allow automating the input of information, processing and calculating the necessary biomechanical parameters. This makes it possible to dramatically increase the effectiveness of training, improve the training of athletes. Rapid progress towards the miniaturization of sensors has led to the emergence of a huge number of gadgets capable of registering a large number of parameters. Thus, devices with a built-in navigation module of the global positioning system are widely used, first of all, these are products of market leaders of such companies. However, a modern heart rate monitor, in addition to its main purpose, performs many other functions and even includes additional devices, so heart rate monitors are often called sports testers and even computers.

Currently, the simplest and most affordable devices used in the training of athletes are considered inexpensive devices of the fitness series, and the most complex are multi–sports. Nowadays, most qualified athletes and sports enthusiasts cannot imagine their training process without using devices.

Most companies that produce sports gadgets simultaneously provide the opportunity to analyze the training process and create social networks. Such resources have the necessary information support and allow you to program training parameters. With their help, it became possible to automate many data processing processes of the training process, such as: training and control of theoretical knowledge; preparation and processing of competition results in various sports; control and optimization of sports movement techniques; monitoring the physical performance of the subjects; creation of computerized training complexes, etc Electronic systems and devices allow not only to record what workouts an athlete

does, but also to save many parameters of these activities, including time, speed, calories burned, pulse charts and much more.

Keeping a sports diary is a necessity for everyone who strives to achieve significant results. The development of navigation and the emergence of a new generation of sports gadgets has made it possible to record the results of training in athletics in real time.

Information technologies are used to improve the skills of an athletics coach. The creation of a unified system of electronic textbooks, reference books, data banks, knowledge bases, the development of electronic libraries, and the provision of interaction by means of telecommunications remains important in the system of training and advanced training.

The process of mastering rational forms of movement by students takes a lot of educational time and the strength of teachers. Significant difficulties in performing various motor actions in athletics classes often arise due to imperfect differentiation and "rough" perception by students of the parameters of their own movements, which in turn affects the quality of assimilation of movements and their accurate execution. In relation to the acquisition of motor skills, the importance of such an assessment has been noted by many authors and formulated in the form of a rule, stating that knowledge of the results of an action contributes to faster mastery of the skill [4, 7].

If information about the objective values of identifiable characteristics is received immediately after an urgent attempt or during an overtime execution, then the formation of the ability to distinguish and evaluate the parameters of an action, to control its individual characteristics is accelerated [3, 6].

It is important to note due to the fact that at a high speed of performing an action or movement, information about the quality of movements, for example, in throwing and jumping exercises, does not have time to pass through the feedback rings. There is also no time to form a decision on motion correction. The formation of motor skills in exercises performed at full strength is ineffective, since it has been experimentally shown that in these cases motor skills are formed with errors, most of which cannot be subsequently corrected.

The development of digital technology makes it possible today to use as a means of urgent information a digital image of a motor action, which is obtained using a video camera of a digital camera and subsequently processed using computer software. Many samples of digital technology are offered, but the devices that allow the use of the "high-speed shooting" mode should be recognized as the most suitable for the practice of teaching motor actions. This mode in a number of digital cameras allows you to take video at a frequency of 60 frames per second.

The above-mentioned capabilities of digital technology samples allow, in the process of learning the technique of motor actions in the classroom, immediately after performing a motor action, to obtain digital data: on the speed of running in individual segments, on the duration of movements, on the angular positions of body parts and the whole body.

To determine the time of certain run-up, running, or performing individual movements, you need to take a picture and import the captured video file from the camera in your computer or laptop. At the same time, you can use the function of video capture player programs. Knowing the exact time and distance allows the teacher to determine the speed of a single movement or a segment of the distance run by the student. The measurement error is minimal.

To correct errors in exercises using video recording, it is recommended to use the following algorithm of actions: video recording of motor action; analysis of the obtained data of motor action, the speed and duration of individual phases of motor action, angular positions of body parts are calculated; comparison of the data obtained with reference values or recommendations; making a decision on correction of

movements; telling the student a task, a motor setup to correct an error in the next attempt to perform a motor action, or performing specially guided exercises by the student.

The analysis and interpretation by the teacher together with the students of the motor action data obtained with the help of a digital camera makes it possible to practically implement in the educational process the methodological principles of physical education of "consciousness and activity", the clarity of learning.

The implementation of the principle of consciousness and activity requires encouraging students in the classroom to introspection, self-assessment, and self-control of actions. To do this, it is necessary to use opportunities in the educational process to develop their ability to analyze successful and unsuccessful exercises; to find errors in the technique of movements, the causes of their occurrence and ways to eliminate them.

To develop the ability to analyze their own movements, students must compare subjective feelings of strength, speed, time and other movement parameters with the assessment received from the teacher through technical devices. When providing students with digital data and video recordings of a motor action after they have completed an attempt, it becomes possible to effectively form logical connections between the nature of performing movements and its results. At the same time, the teacher's verbal correction makes generalized clarifications in the execution of the movement sooner, later, less, more. The effect of the correction depends on the time spent pausing between repetitions of the movement. The shorter the pause, the higher the effect [1, 5].

The integrated use of all forms of visualization in the educational process ensures a qualitative transition from sensory cognition to understanding the essence of the studied material [8].

Based on the experience of using videography in the educational process in athletics classes, it is recommended to:

➢ use videography in lessons with students assigned to different groups of preparedness;

➢ when organizing students in the lesson, use the flow method;

➢ at the stage of initial movement learning, use video recording tools in each lesson 2-4 times a week for 6-8 applications for each student in one lesson; at the stage of advanced training – 1-2 times There are 4-6 applications per week for each student in one lesson;

➢ at the stage of improvement – 1 time per week for 3-4 applications for each student.

When teaching the technique of sports exercises using video shooting as a means of urgent information, a typical scheme of the motor action training process should be used, consisting of three stages.

Stage 1. To create an idea among students about the rational and effective technique of the studied physical exercise. Tools: a story about the technique of physical exercise in the process of demonstrating it by showing videos and illustrations using a laptop or monitor.

Stage 2. To teach the technique of the main link of the studied physical exercise, its phases and the technique of the exercise as a whole, taking into account the individual characteristics of the students.

Stage 3. Improving the technique of the studied physical exercise in general. Performing the exercise under study in accordance with the competition rules. A holistic and dissected teaching method is used. It is necessary to ensure perfect mastery of the motor action as a whole in terms of its practical application and its parts in conditions as close as possible to competitive ones. Urgent information means a monitor, laptop, camera should be used not only for video replays of physical exercise, but also used to obtain urgent information about the kinematic parameters of the physical exercise being improved, speed at the last 5 meters before pushing off in jumps, angular positions of body parts when performing the main link of the physical exercise technique.

Thus, it can be concluded that computer technologies form a fundamentally different style of educational activity and sports training process, which turn out to be more psychologically acceptable, comfortable, mobilizing creative opportunities, intellectual and physical potential of students, and also help to improve the teaching process, simulate educational and competitive situations, monitor learning outcomes and, if necessary, adjust the training.

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