

The use of information technologies for improving the effectiveness of the training process

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Abstract. *The article is devoted to the issues of increasing the efficiency of the training process by introducing modern information technologies into it. The tools proposed in the work (a software product based on the C # programming language and the SQL Server Express database management system) allow creating and storing data arrays with information about the health status and functional abilities of the body, as well as tracking the dynamics and making timely adjustments to the training process.*

Keywords: *information technology, physical education, effectiveness of the training process.*

I. INTRODUCTION

One of the central tasks of physical education is to form the need for maintaining health, to ensure a high level of working capacity and social activity. The main role in solving this problem belongs to the higher education system, which currently actively uses information technologies [3].

A modern educated person must be able to receive, store and use information with the help of modern information technologies [1].

Implementing information technology in physical education began relatively recently and is now far from complete.

Information technologies as a means of interactive training in physical education classes are designed to significantly expand the theoretical and practical components of the training process and increase the effectiveness of classes [2].

Moreover, the formation of a new information and educational space in the physical education will provide a significant increase in health-preserving and sociocultural components [4].

To increase the attractiveness of physical education among young people and students, various technical means have recently become widely used. To control the current status of the body, there are sports gadgets that allow collecting, accumulating and analyzing objective information with little or no time and effort. Moreover, such gadgets allow building an individual training schedule. Training gadgets can be compatible with other multimedia devices or work autonomously. The most famous and popular among them are electronic fitness bracelets, "Calorie counters", "Smart watches", "Smart scales", etc.

In this regard, the use of modern technical means for monitoring the effectiveness of the training process, the dynamics of the health status is of undoubted interest.

The purpose of the study is the collection, systematization and assessment of objective data on the functional status of the body in the training process and the development of recommendations to increase its effectiveness.

II. MATERIALS AND METHODS

Pilot study was performed during the 2017-2018 academic year at the Faculty of Physical Education and Sports of the Kursk State University. The first stage was devoted to an objective quantitative assessment of the physical development, functional status and physical fitness of students. 3 year full-time students participated in the study. They were randomly divided into two groups, 15 people each. During the health examination of students, it was found that the groups were homogeneous at the beginning of the study.

The control group was engaged in a standard physical training program. The experimental group was engaged in a standard program with specially designed individual exercises based on data obtained during monitoring.

Together with the Faculty of Mathematics and Informatics of the Kursk State University, software and the so-called Student Health Passport were developed, which allowed creating databases to monitor physical development and the functional status of students. The information obtained made it possible to promptly make changes for individualizing the training process.

The program can be accessed through the browser by entering the username and password. Next, the student data is entered, his/her individual journal is formed. The software product was created using the C # programming language and SQL Server Express database management system.

Considering the tasks of each stage of preparation, we promptly made changes to the lesson plan and offered students from the experimental group individual exercises aimed at correcting problems identified during examination.

Sets of exercises were used in training sessions 3 times a week. Thus, the training process in the experimental group was carried out on the basis of recommendations developed using software.



Fig. 1. Program window

The data obtained during the study were automatically edited and converted to logs included in the advanced search. We evaluated the objective indicators of the participants in the experiment.

The processing and systematization of the data obtained were automatically carried out. The proposed program performed continuous monitoring of dynamically changing indicators of the participants, processed the data obtained and built individual recommendations on the training process.

III. RESULTS AND DISCUSSION

During the experiment, it was found that the studied parameters in persons from the experimental group improved in the range from 15% to 25%, while in the control group - in the range from 12% to 16%.

Figures 2 and 3 show the dynamics of the studied objective indicators in the participants.

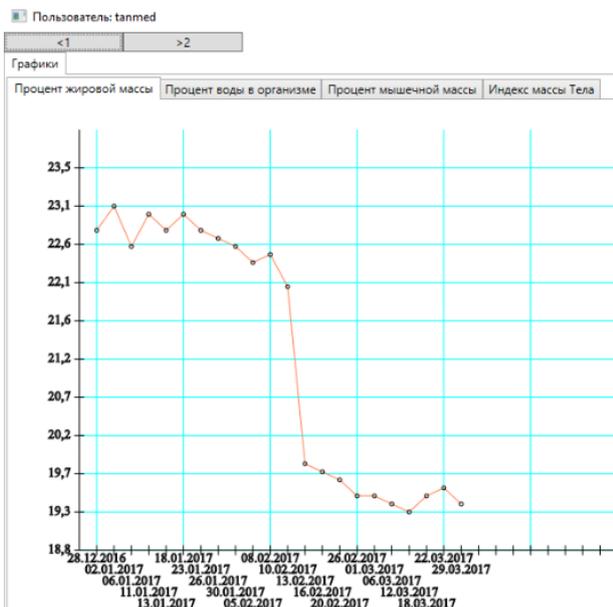


Fig. 2. Dynamics of the fat mass in participants

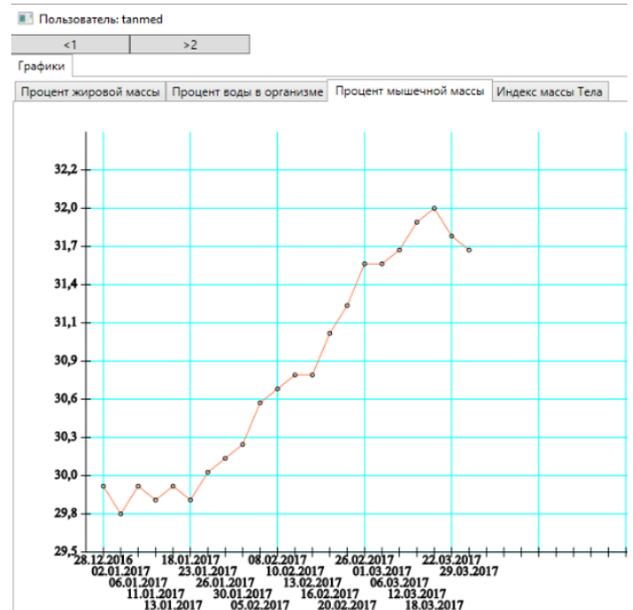


Fig. 3. Dynamics of the muscle mass in participants

Our technology does not require serious material or financial costs. As equipment, a laptop with the WINDOWS10 operating system can be used, which allows analyzing and storing data on the health status, anatomical and physiological parameters of all participants.

At the end of the study, an analysis of the results obtained was performed followed by data archivation and systematization, an assessment of the effectiveness of the developed program and recommendations on the appropriateness of its use in the educational process.

IV. CONCLUSION

Modern technologies make it possible to create systems for monitoring the health status, physical development and functional status in dynamics and to analyze the effectiveness of the educational process.

The developed program provided an opportunity to improve the training process by tracking changes in the functional status of students and making the necessary adjustments to the training process.

Thus, the work done and the data obtained during the study proved the effectiveness of using IT – technologies in the training process of students of the Faculty of Physical Education and Sports.

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