Application of the systematization and control program module in the educational process of universities

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Abstract

Objective of the study is substantiation and integration of the program module for systematization and objective assessment of the level of physical training of students of higher educational institutions in the educational process.

Methods and structure of the study. To achieve the set goals, the following methods were used: analysis of scientific literature, collection of empirical data, conducting questionnaires, and mathematical processing of the obtained results. The study of regulatory legal acts revealed the need for the introduction of innovative educational technologies. During the questionnaire, it was found that the software module for the systematization and control of physical training is in demand among students and contributes to increasing their motivation for classes.

Results and conclusions. The developed software module, which focuses on systematizing and monitoring the physical training of university students, is an innovative tool aimed at optimizing their physical capabilities and improving the quality of the educational process.

Keywords: *software module, methodological instructions, physical education, academic course, education, level of physical training, certification.*

Introduction. As part of higher education, the Physical Education course concludes with an intermediate assessment in the form of a credit. The credit assessment is differentiated and includes points for attendance, theoretical knowledge, and practical training. Theoretical knowledge is assessed through testing, which can be conducted both in-person and remotely, depending on the credit program, the institution's facilities, and requirements. In practice, students generally perform well on the tests and demonstrate high results. Physical education classes are held once a week during the semester, and the number of practical classes does not exceed twenty. Despite the high workload of students and absences due to various reasons, including illness, they easily achieve attendance points. However, 40% of students, especially first-year students, face difficulties in completing the physical exercises that are part of the course requirements. These exercises are designed to assess the development of physical qualities such as strength, speed, and endurance. Since most students have either never taken part in sports or have stopped training in the past, it is difficult for them to achieve high results in these exercises. The development of students' physical qualities is a priority for the departments of physical education. However, with an average attendance rate of 35-40%, especially in the third year, it is difficult to talk about significant progress in this area. Mainly, efforts are focused on maintaining the physical condition necessary for the implementation of educational tasks. Students have different weight-height parameters and body mass indices, but the scores for the exercises in the test are averaged for all. The physical education curricula include several sections covering exercises from various sports. However, it is not possible to regularly practice these exercises in class due to the need to cover all sections of the curriculum. The federal state educational stand-

ards for bachelor's degrees require graduates to have the skills to organize independent physical training. However, students often lack the knowledge and skills to develop their physical abilities. Therefore, it is necessary to develop guidelines for students to help them develop their physical abilities through independent training.

The relevance of research is underscored by the imperative to formulate a comprehensive methodological framework for independent physical training, which is designed to optimize the physical parameters of student populations; this endeavor is particularly significant in the context of modern educational paradigms, where holistic development is increasingly recognized as a crucial component of academic success.

Objective of the study is substantiation and integration of the program module for systematization and objective assessment of the level of physical training of students of higher educational institutions in the educational process.

Subject of research: electronic educational platforms in higher education institutions.

Methods and structure of the study. The organization of research activities was carried out in two stages, each of which was aimed at achieving specific goals and objectives.

In the first stage, the needs of students for methodological recommendations on the development of physical qualities during independent physical training were analyzed. The goal of this stage was to identify the most effective formats for providing recommendations that would be most adaptable and convenient for students.

In the second stage, methodological recommendations for students were developed based on the data obtained during the first stage of the research. This stage involved a thorough analysis of the content and structure of the recommendations, taking into account the specific needs of the target audience and the requirements for their practical implementation.

Before developing the guidelines, it is necessary to conduct a thorough analysis of the target audience's need for this product. To achieve this, a questionnaire was conducted, in which more than a hundred second- and third-year students participated. The data obtained, as shown in Figure 1, allowed us to assess the students' level of interest in using the guidelines being developed.

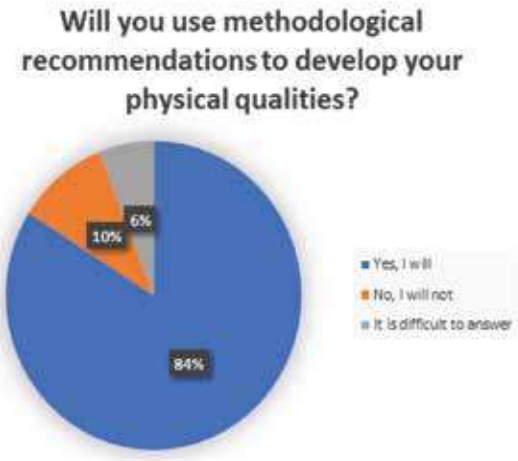

Figure 1. Students' assessment of the feasibility of developing guidelines for the development of physical qualities

The results of the survey demonstrate that the vast majority of students (84%) express a need for methodological recommendations for developing physical qualities through independent physical education classes. This highlights the importance of developing and implementing effective methodological materials aimed at optimizing students' physical training.

To determine the most preferred format of methodological recommendations, students were asked the following question: "Which format of recommendations is most convenient for use in the educational process: electronic or printed?" An analysis of the survey results, presented in Figure 2, suggests that an electronic software product is the most preferred option for methodological recommendations for students engaged in the development of physical qualities. This result highlights the need for the development and implementation of innovative digital solutions that enhance the effectiveness of the educational process and individualize approaches to physical training for students.

Research of the factors that influenced the results of the survey:

- The most difficult aspect of assessing the credit for the discipline "Physical Education" for most students is the quantitative and qualitative assessment of their level of practical preparedness, which is determined by the performance of exercises aimed at developing key physical qualities;

- Students strive to obtain the credit within the established deadlines in order to minimize academic debts, which helps to avoid the time spent on resolving them in subsequent academic periods;

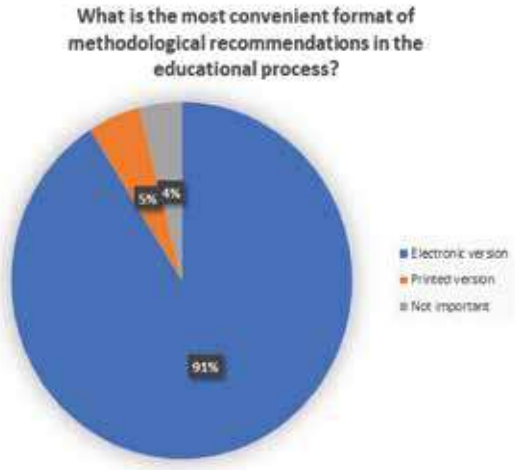

Figure 2. Students' definition of the format of methodological recommendations for the development of physical qualities

- In the context of the lack of specialized knowledge about methodological approaches to the development of physical qualities, there is an urgent need to develop and implement methodological recommendations aimed at optimizing the process of independent training.

- In the context of modern educational trends, students, as representatives of young people, demonstrate a clear preference for using electronic educational systems, which is due to their high adaptability to technological innovations and integration with global information networks [3];

-The introduction of advanced technological solutions significantly activates cognitive processes, stimulating students to innovative thinking and in-depth knowledge of the subject area [1].

In the modern educational paradigm, there is a tendency towards the integration of innovative information technologies into the pedagogical process. This is due to the need not only to effectively assimilate educational material, but also to create conditions for maximum student engagement and motivation. With the rapid development of the digital environment and the digitalization of all aspects of society, the introduction of interactive and multimedia resources has become an integral part of modern didactics. The use of information and communication technologies in the educational process helps students develop critical thinking, self-learning skills, and a creative approach to problem-solving. This, in turn, increases their competitiveness in the labor market and contributes to successful adaptation to the dynamically changing conditions of professional activity [2]. Information retrieval systems act as a key tool, providing educational participants with access to extensive learning resources and enabling effective self-learning. These systems transform traditional approaches to learning, becoming an integral part of a guided learning process that is purposefully adapted to the individual needs and cognitive capabilities of learners. As a result of their application, not only the development of professional competencies is observed, but also the formation and improvement of students' personal qualities, which contributes to their comprehensive personal and professional growth.

Results of the study and discussion. The research conducted as part of this work served as a key impetus for the development of specialized software – a module for systematization and control of the level of physical fitness of students. This module is a system that integrates methodological recommendations for the development of physical qualities based on an objective assessment of the user's current state. The module's functioning is based on a sequence of algorithmic operations that include arithmetic, logical, and other computational processes. These operations not only determine the user's initial level of physical fitness but also provide personalized recommendations for improving it, facilitating a more effective and targeted physical training process for students.

1. Introduction of personal data. During the system initialization process, the user enters their personal data, including their last name, first name, patronymic, and age, for correct identification and subsequent analysis.

2. Analysis of weight and height characteristics. The program automatically calculates the body mass index (or BMI) based on the user's entered weight and height data. The results are displayed as a numerical BMI value and a qualitative weight classification: overweight, normal, or underweight. For example, an BMI of 21.34 indicates a normal weight.

3. Registration of initial indicators of physical fitness. The user enters the initial results of exercises for various physical qualities (strength, speed, endurance, and flexibility), allowing to assess his current level of physical fitness.

4. Evaluation and analysis of physical fitness. The program analyzes the entered results using the criteria established by the fund of assessment tools. Based on this analysis, the system provides a comprehensive assessment of the level of development of each physical quality, as well as identifies the strengths and

weaknesses of the user's physical fitness. In the case where the physical quality is rated below four points, the program recommends specific exercises for its development, including text instructions, video materials from the training program and videos from the Internet.

5. Recommendations for weight correction. Regardless of the level of physical fitness, the program provides individual recommendations for the choice of physical exercises aimed at correcting body weight. Recommendations depend on the value of the user's body mass index and may include both exercises for weight loss and for weight gain.

6. Development of a general exercise program. The system generates recommendations for performing general exercises that can be effectively performed on-site, which helps to improve overall physical fitness and prepare for more intense training sessions.

The software module should be integrated into the website of the University Department of Physical Education and into the distance learning system of the higher educational institution, ensuring its accessibility for all students. This module is designed to monitor the level of physical fitness of students and systematize the results obtained, which contributes to an objective analysis of the dynamics of their physical development and the optimization of educational programs in the field of physical education.

Conclusions. Electronic educational systems play a key role in implementing the concept of advanced learning, which is focused on the predicted future development of science and professional practice for graduates of higher educational institutions. In today's conditions, the educational process at a university should not only record current achievements, but also actively consider the prospects of scientific and technological progress, as well as the trends of digitalization of society and the educational environment. The software module for systematizing and monitoring the level of physical fitness of students, which is integrated into educational systems, should not only contribute to the development of physical qualities, but also help students acquire the skills of independent physical training. This should lead to an increase in the effectiveness of intermediate and final physical training assessments. Thus, the introduction of such software modules into the educational process is an important step towards creating a more flexible and adaptive educational environment that can effectively respond to modern challenges and provide training for future-ready professionals.

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