

Monitoring student performance using computer technology

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Purpose: to develop a computer program for students of the department of martial arts of KhSAPC, which allows you to monitor and account for their knowledge in the discipline "Theory and methods of the chosen sport" and "Varieties of wrestling".

Material & Methods: analysis of scientific and methodological information, computer programming method.

Results: analysis of scientific and methodological information confirmed the relevance and significance of the problem of using computer technologies that create conditions where the student becomes an active subject of educational activity interested in achieving the goals of vocational education. The use of computer test programs is a fairly perfect means of monitoring and evaluating knowledge because of its objectivity in analyzing the results obtained. A computer program, CCT (ControlComplexTasks), designed for use in mobile devices, which allows you to quickly evaluate the current and course performance of students of the department of martial arts, was developed. Based on the analysis of teaching materials on the discipline "Theory and methodology of the chosen sport" (specialization "Wrestling", "Judo and Sambo", "Martial Arts") and the general course "Varieties of Wrestling" 520 control and integrated tasks for 1–4 year students of the department of martial arts, consisting of questions and three answers, one of which is correct.

Conclusions: a computer program has been developed and introduced into the educational process, which allows monitoring and accounting for the mastering of theoretical knowledge of students of the martial arts department of the KSFC in the discipline "Theory and methodology of the chosen sport" and "Varieties of wrestling".

Keywords: students-martial arts, computer program, control, accounting, test tasks.

Introduction

At the present stage of development of the theory and methodology of sports activities, one of the promising areas for improving the educational process is the use of computer technologies, which allows to create conditions for the transition from a passive to a truly active version of the organization of the learning process, in which a student becomes an active subject of educational activity interested in achieving goals vocational education [1; 2].

For the educational process in the university is characterized by the study of large volumes of scientific information, which is a prerequisite for the preparation of competent specialists. Preparing a specialist who is capable of self-development to participate in innovation activity is impossible using only reproductive teaching methods that involve the elementary transfer of ready-made knowledge to students and reproducing the information received by them [5; 6].

Computer technology provides many opportunities to make complex educational material more accessible for understanding and remembering. All this contributes to the development of the intellectual, creative potential of the student's personality, stimulates the development of critical, analytical thinking, teaches them to work with various sources of information, develops skills for independent knowledge acquisition [4].

In the series of didactic means used in the process of teach-

ing at a higher educational institution, the specific weight is control. The value of control increases due to the reduction in the share of classroom activities in parallel with the increase in students' independent work. Testing and assessing the knowledge and skills of students is an important component of the learning process and is carried out throughout the school year.

At the present stage of development of educational technologies, new forms based on the use of computer technologies are replacing traditional forms of knowledge control: automated testing systems, interactive practical work, reports and abstracts made using presentation technology, etc. [8].

The advantages of using automated testing systems lie in the promptness of obtaining information about students' knowledge, the objectivity of the results obtained, and the possibility of identifying topics and questions poorly mastered by them.

Computer test – a tool that reveals the fact of mastering educational material, consists of a task for the activity of a certain level and standard, that is, a sample of complete and correct performance of actions. Comparison of the student's answer with the standard by the number of correctly performed operations makes it possible to determine the mastery point. When creating computer tests, it is necessary to consider the level of mastering the student for whom the tests are intended [9; 10].

Purpose of the study: to develop a computer program for students of the department of martial arts of KSAPC, which allows you to monitor and account for their knowledge in the discipline "Theory and methods of the chosen sport" and "Varieties of wrestling".

Objectives of the study:

1. To analyze the scientific and methodological information on the use of computer technology in the education system.
2. To systematize the test tasks for the objectivity of the assessment of the theoretical knowledge of martial arts students of KhSAPC.
3. To develop and introduce into the educational process a computer program for monitoring and recording knowledge of students of the department of martial arts of KhSAPC.

Material and Methods of the research

To solve the research problems, the following methods were used: analysis of scientific and methodological information, computer programming method.

Results of the research

Based on the study of scientific and methodological information, it was revealed that the requirements for computer testing technology have been developed at present, which include [7]:

1. The person being tested must be notified of the number of tasks in the test and time constraints.
2. The researcher should be able to perform a demonstration test at least once before beginning the certification test in order to become familiar with the interface of the program and the methods of introducing conclusions.
3. During testing, the test task and controls should be located on the monitor screen.
4. The way to input the output should be simple and convenient. The input entered by the test should be displayed on the monitor screen.
5. Tested person should be able to: confirm the end of the introduction of the answers to the tasks (after confirming the end of the input of the answer is no longer possible to correct it) after the end of testing, immediately review the result of the answers.

Thus, the use of computer test programs is a fairly perfect means of monitoring and evaluating knowledge because of its objectivity in analyzing the results obtained.

Considering all the above, in the 2016–2017 school year, a software computer application "CCT" was developed to monitor the progress of student fighters (implementation act dated November 14, 2016), testing of this program was carried out at the department of martial arts. During the testing, the positive aspects of the program implementation were noted due to: simplicity and intuitiveness of the application interface; efficiency and objectivity of the estimates; increasing students' interest in the process of obtaining professional knowledge in

the discipline being studied.

It was also determined the absence of additional features, due to which it would be possible to improve this computer program, namely: setting the time limit for passing the test; formation of a list of questions according to selected content modules; creation of the mode "Express survey"; creating a database on the results of responses; the ability to quickly share a report on the passage of control and complex tasks with students and teachers; the ability to use a computer program on both smartphones and tablet computers. The information that was obtained during the testing led to the development of a new version and methodology for using a computer program. This program took into account the comments, corrected software bugs, improved performance.

The new computer program "CCT" (Control Complex Tasks) is designed for use in mobile devices, allows you to quickly evaluate the current and course progress of students of the department of martial arts.

Based on the analysis of educational material on the discipline "Theory and methodology of the chosen sport" (specialization "Wrestling", "Judo and Sambo", "Martial Arts") and the general course "Varieties of Wrestling" 520 control and complex tasks were selected for students of 1–4 courses of martial arts, which include one question and three answer choices, one of which is correct.

The computer program "CCT" was created for mobile devices running iOS and can be used both on smartphones (iPhone) and on computer tablets (iPad). The block diagram of the computer program is shown in Figure 1.



Fig. 1. Block diagram of the computer program "CCT"

The main screen of the computer program (Figure 2) is simplified as much as possible and allows you to select the required discipline, the number of informative modules, which will allow you to create a list of questions for test tasks, view a database of saved indicators, and configure application settings depending on the tasks of the upcoming testing.

The time allowed for answers to all questions can be chosen in the range from 5 to 20 minutes.

The mode "Express survey" allow you to randomly select a certain number of questions depending on the selected time limit provided for the test. So, when choosing an interval of

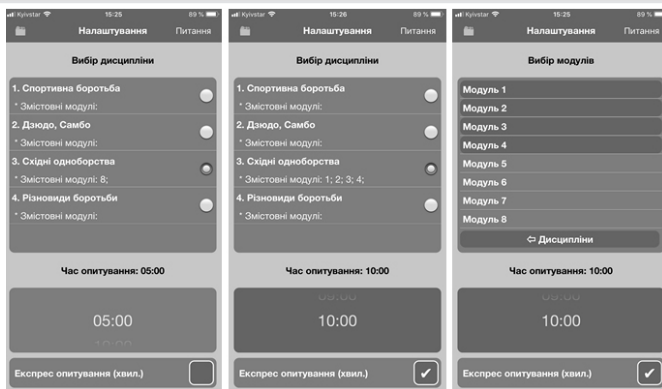


Figure 2. Main screen of the computer program "CCT"

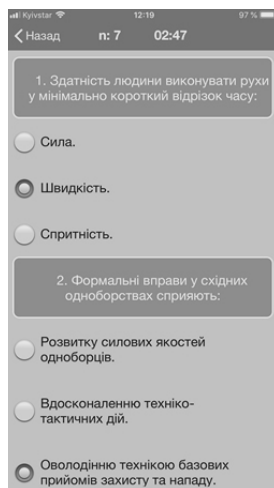


Figure 3. Screen test tasks computer program "CCT"

1 minute, you are asked to answer three questions, with an interval of 2 minutes – 6 questions, 3 minutes – 9 questions, and the like. Formation of a report on the results of the implementation of control and complex tasks in the "Express survey" mode is carried out as in the main mode of operation of a computer program.

On the screen (Figure 3), where the control and complex tasks for the corresponding course are presented, there are such additional features: view all the questions; answer questions in any order; complete the test after all the tasks have been completed if the time limit has not yet been reached. After the time allotted for answers has expired, the program itself switches to the test results viewing mode and offers to save the established report.

The report on the passage of all control and complex tasks includes: date of passing the test; information about the subject; testing mode (general testing or rapid testing); content modules, on the basis of which test tasks were formed; the number of correct answers; the total number of responses received; test time; the number of points (0–100) ECTS score; national scale assessment; list of questions that were answered incorrectly.

You can also share the established report; send it to an email

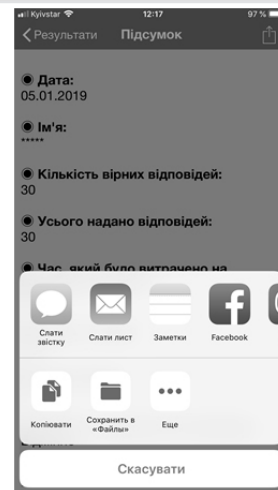


Figure 4. Screen "Results" of the computer program "CCT"

address or a method that can be offered by a mobile device, both with the actual test performer and with the teacher leading the discipline (Figure 4).

If the end of the test tasks and the available report are confirmed, it is not possible to return to the previous screen. On the "Results" screen ("Textbook" tab) there is an opportunity to familiarize yourself with educational and methodological documentation relating to this discipline, and to receive information on problematic issues of educational material.

Thus, the use of computer-aided testing programs in the educational process allows, based on the analysis of students' responses, to adjust the educational process and devote additional time to consider topics for which the student has insufficient knowledge, to shape the dynamics of student performance, to intensify cognitive interest in learning.

Conclusions / Discussion

Analysis of the literature confirmed the relevance and significance of the problem of using computer technologies that create the conditions for turning a student into an active subject of educational activity, is interested in achieving the goals of vocational education.

Selected tests for the evaluation of theoretical knowledge of students of martial arts KhSAPC.

A computer program has been developed and introduced into the educational process, which allows monitoring and accounting of the mastering of knowledge of students of the department of martial arts of the KhSAPC in the discipline "Theory and methodology of the chosen sport" and "Varieties of wrestling".

Prospects for further research will be aimed at expanding the test tasks, and supplementing their methodological support, as well as complementing the SST computer program with the ability to analyze the performance dynamics with a demonstration of the level of learning topics.

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