



Interrelation of the level of working capability and the use of athletics at the classes of students

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Abstract

Objective of the study was to determine the effectiveness of the use of athletics in the educational process of students to increase the level of working capacity.

Methods and structure of the study. The scientific work was carried out for four months, girls and boys, studying in the 2nd year, took part in it. To organize the experiment, control (45 people) and experimental (48 people) groups were identified. The students of the control group studied according to the work program for higher educational institutions. The students of the experimental group were offered systematic classes with cross-country training and elements of athletics.

Results and conclusions. The test results have a positive trend, characterizing the growth of physical and mental performance in young people. In this example, athletics were used. Obviously, the use of products from other cyclic sports will also have a positive impact on the level of performance, which gives young people a choice.

Keywords: *physical culture, athletics, cross-country, working capacity, endurance.*

Introduction. Currently, many researchers [2, 3, 4, 6] note a decrease in the level of physical fitness of students. This issue has been discussed for over a decade. In the works of many authors, one can find proposals for optimization [6], improvement [3], increase in the level [2] of the physical fitness of students of higher educational institutions. We can confidently say that most researchers agree on one thing: the main causes of the negative phenomenon are physical inactivity [1, 4], ignoring the principles of a healthy lifestyle [5], a decrease in interest in physical education [1, 3, 6] and low efficiency of physical education in educational organizations [2, 4].

Studies conducted in different years [1, 3, 4, 6] noted that regular physical activity has a positive effect on physical condition, functional fitness, and somatic health. As a result, an increase in the level of these indicators will positively affect the performance of young people. Also in his works A.A. Gorelov pointed to a direct relationship between the level of endurance development and working capacity [1, 4].

One of the affordable and fairly effective sports is athletics. Athletics means are easy to perform, affordable and highly effective in increasing motor activity,

developing physical qualities and, undoubtedly, increasing the level of endurance development.

Objective of the study was to determine the effectiveness of the use of athletics in the educational process of students to increase the level of working capacity.

Methods and structure of the study. To achieve this goal, a study was organized on the basis of higher educational institutions in Belgorod. The study involved girls and boys studying in the 2nd year. The study was conducted over four months.

To organize the experiment, a control group (45 people) and an experimental group (48 people) were identified. The students of the control group studied according to the work program for higher educational institutions. The students of the experimental group were offered systematic classes with cross-country training and elements of athletics.

Evaluation of the level of working capacity was assessed using tests to determine functional indicators: the Harvard step test (HSTI), the Ruffier test (RI), the endurance coefficient (EC). To assess mental performance, test tasks were proposed using the "BioMouse Research", a correction test and addition of numbers.



Results of the study and their discussion. The analysis of the scientific and methodological literature showed that the existing recommendations in the literature on improving the working capacity of students by means of physical culture are disjointed and contradictory.

The level of performance is closely related to the level of development of endurance. In this regard, the students of the experimental group were asked to use running exercises in the initial part of the lesson, and walking, running and jumping exercises in the main and final part of the lesson. All exercises were performed in the aerobic intensity zone.

To evaluate the proposed approach and search for the relationship between the level of working capacity and the use of athletics in the classroom, it was proposed to conduct testing. The results that determine the level of physical performance are presented in Table 1.

The conducted testing showed that before the start of the experiment, the groups were homogeneous. The results obtained indicated a low level of manifestation of functional fitness. Thus, the results of HSTI in both groups correspond to the average level of the

state of the cardiovascular system and physical fitness. The results of the Ruffier test showed a low level of readiness of the students' organism for a fairly simple load. And the results of the coefficient of endurance indicated that the body of young people is poorly trained.

Repeated testing at the end of the application of the experimental methodology showed a positive trend in the results in the experimental group, both in girls and boys.

To assess mental performance, a number of tests were proposed using the BioMouse Research. The results are presented in table 2.

To assess mental performance, the ability of students to concentrate and distribute attention was assessed using a correction test. The results before the start of the experiment indicate a low rate of responses and the presence of errors in test items. The "addition of numbers" test determined the ability of students to process information. Also, a low rate of answers and the presence of errors in the test task were noted.

At the end of the experiment, the results of repeated testing indicated a positive trend in the experimental group, both among girls and boys. In the experi-

Table 1. Evaluation of the results of physical performance

| Period | Test | Girls | | p | Youths | | p |
|--------|------|----------|----------|---|----------|----------|---|
| | | CG | EG | | CG | EG | |
| Before | HSTI | 73,2±6,8 | 74,1±5,6 | - | 77,3±4,5 | 77,1±5,3 | - |
| | RI | 12,9±0,6 | 12,6±0,7 | - | 11,2±0,9 | 11,5±0,8 | - |
| | EC | 19,3±1,1 | 19,6±0,9 | - | 18,7±0,8 | 18,8±0,6 | - |
| After | HSTI | 73,8±4,2 | 80,2±4,9 | + | 77,4±5,8 | 84,5±5,1 | + |
| | RI | 11,4±0,4 | 9,8±0,4 | + | 10,8±0,7 | 9,8±0,8 | + |
| | EC | 18,4±0,8 | 15,9±0,4 | + | 19,0±0,9 | 15,6±0,7 | + |

«+» – changes are significant according to Student's t-test.

Table 2. Evaluation of the results of mental performance

| Period | Test | Indicator | Girls | | p | Youths | | p |
|--------|-----------------|--------------------------|---------|---------|---|---------|---------|---|
| | | | CG | EG | | CG | EG | |
| Before | Correction test | Average response time, s | 2,1±0,1 | 2,0±0,2 | - | 1,9±0,1 | 1,9±0,2 | - |
| | | Number of errors, pcs. | 3,1±0,2 | 2,2±0,4 | - | 3,9±0,2 | 3,7±0,3 | - |
| | Number addition | Average response time, s | 3,7±0,4 | 3,5±0,2 | - | 4,1±0,2 | 4,0±0,3 | - |
| | | Number of errors, pcs. | 2,3±0,3 | 2,4±0,2 | - | 3,5±0,4 | 3,6±0,2 | - |
| After | Correction test | Average response time, s | 2,0±0,2 | 1,6±0,3 | + | 2,0±0,2 | 1,7±0,3 | - |
| | | Number of errors, pcs. | 3,2±0,2 | 0,2±0,1 | + | 3,4±0,3 | 0,5±0,1 | + |
| | Number addition | Average response time, s | 3,8±0,3 | 3,1±0,2 | + | 4,1±0,3 | 3,5±0,4 | + |
| | | Number of errors, pcs. | 3,1±0,5 | 0,4±0,1 | + | 3,2±0,3 | 0,5±0,2 | + |

«+» – changes are significant according to Student's t-test.



mental group, the average rate of responses slightly decreased, and some of the subjects made mistakes.

Conclusions. The test results have a positive trend, characterizing the growth of physical and mental performance in young people. In this example, athletics were used. Obviously, the use of products from other cyclic sports will also have a positive impact on the level of performance, which gives young people a choice.

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