

Implementation of Gymnastic Means to Improve the Development of Students' Physical Qualities

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***Abstract**--Among the huge number of types of physical development and upbringing of the young generation, gymnastics occupies a leading position. It is impossible to achieve good results in any sport without a preliminary warm-up, the basis of which is gymnastic exercises. In universities (except for specialized ones) there is no gymnastics as a subject, but even using gymnastics in the form of drill and general exercises in applied physical education classes, it is possible to solve the problem of creating a beautiful figure and significantly improving flexibility and coordination of movements. The article presents an analysis of the complex development of physical (motor) qualities and the functional state of the body of university students in physical education classes conducted using various types of gymnastics.*

***Key words**--motor qualities, functional state of the body, test trials, gymnastic.*

I. INTRODUCTION

In the university system of physical education of students in physical training classes, a significant place is given to physical development, mental and psychophysical capabilities of students. However, the priority in this system belongs to the development of physical (compulsive qualities), the functional readiness of the body with the aim of strengthening health and maintaining high working capacity of students for their further educational and professional work. At the same time, a number of authors studying the level of physical fitness and the functional state of students studying at different courses of individual universities in the country note a steady tendency to increase the number of students assigned to a special medical group. Moreover, 30-40% of them have a decrease in lung vital capacity, which is undoubtedly associated with a deterioration in the functions of the respiratory system and a decrease in the main indicators of the development of physical qualities: strength, speed, speed endurance for 40%, 10%, 19% respectively. All these factors indicate a decrease in students' motor activity and, as a result, a deterioration in their health.

In the modern conditions of our society, the emerging sustainable innovation course in the reform and modernization of education seems promising not only for pedagogical and humanitarian universities, but also for classical universities in the country in particular; the existing system of physical education in them, as well as the content and forms of conducting physical education classes, urgently need universality, updating, modernization of the student learning process, that is, their professional training, development and upbringing as individuals, taking

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into account the complex formation of their optimal level of development of motor and functional capabilities of the body [1, 6].

In this regard, in the last decade, the health status of students and especially the reproductive health of students as expectant mothers has been given the close attention of many scientists and society as a whole. The importance of the reproductive health of female students is their physical fitness and physical activity in physical education classes, in which the amount of physical activity within 2 classes per week is clearly insufficient. Therefore, it should be noted that physical education classes conducted as part of the educational program of the university on physical education in general, also do not solve the whole range of issues and the complex of tasks assigned to them.

An analysis of research programs of various authors on the development and improvement of students' motor qualities, their functional state in physical education classes at different stages of training shows that at present, a systematic approach and unanimous opinion on the study of this important problem in physical theory and practice, unfortunately not traceable.

Hence, it is no coincidence that a number of authors note the observed increase in the number of students with general deviations in the state of physical development, physical fitness, and as a factor in lowering the level of health in general [3, 11, 13]. Others say that the number of students entering universities in the 1st year related to the main medical group due to their health is about 14–16% [5] and, as a result, their interest in physical education at the university is reduced [4]. At the same time, the students engaged in various physical exercises independently, on the contrary, observed the formation of a positive effect in relation to different types of physical activity and physical exercises of a different nature [7, 8].

Recently, new and non-traditional types of gymnastics have gained considerable interest and popularity among students: aerobics, bodybuilding, shaping, stretching, wushu, hatha yoga, breathing exercises, and others [12, 10, 9, 2], which are aimed at strengthening individual muscle groups, the basic functional systems of the body, which play an important role in fulfilling the functions of motherhood in girls.

In this regard, the introduction of a specially designed curriculum for the comprehensive use in physical education classes at a university of various gymnastics, its non-traditional types, as well as special applied gymnastic exercises with elements of a circular training, may be in demand in the process of teaching students as a special universal form of physical education classes in a higher educational institution. The main goal of these classes is to improve the holistic process of optimizing the motor activity of female students at physical education lessons, with a motivation for improving their orientation, and an increased interest in independent, individual classes, which leads to an intensification of the development of physical qualities and improvement of the functional state of the students' body.

The aim of the study was to study the complex development of physical (motor) qualities and the functional state of the body of university students in physical education classes conducted using various types of gymnastics.

II. METHODS

113 students, aged 17-19 years old, studying at the National University of Uzbekistan, Faculty of Biology and Soil, took part in the ascertaining experiment. Of the total number of subjects for a long experiment from September 2018 to May 2019, 104 students were selected, who made up control group No. 1 and experimental group No. 2, 52 people each. For health reasons, all subjects were assigned to the main medical group and were equalized by average indicators: age, level of physical fitness and functional state of individual body systems at rest.

The students who made up the control group were engaged in physical education lessons according to the basic program of physical education, approved for higher educational institutions of the Republic of Uzbekistan in accordance with the educational standard. Students included in the experimental group, engaged in a training program according to a special program using various gymnastic exercises and non-traditional types of modern gymnastics (aerobics, women's athletic gymnastics, shaping and stretching elements) with the inclusion of general developmental exercises with and without objects exercises on gymnastic apparatus and training devices.

The program also included outdoor games, gymnastic relay races using acrobatic elements and obstacle courses; applied exercises in climbing, climbing, balance and special exercises of general physical training, conducted by the method of circular training.

In both groups (No. 1 and 2), the students at the beginning and at the end of a long experiment evaluated the development of motor qualities and the functional state of the cardiovascular and respiratory systems of the body at rest according to specially selected tests, which are presented in Tables 1, 2. The obtained digital results The tables were subjected to mathematical statistics. The arithmetic mean (M), the arithmetic mean error (t), the significance of the differences (P) were calculated.

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III. RESULT

As a result of the study and analysis of digital data, it was possible to establish the following. The basic motor qualities of the students of both groups developed unidirectionally, that is, upward. However, the representatives of the experimental group, the digital indicators were slightly higher than the students of the control group.

Strength indicators of the muscles of the hands in pulling up in the supine position and push-ups on the gymnastic bench after 2 years of observation during physical education lessons increased in both groups with a positive trend. So, the maximum number of pull-ups in the control group was 16.23 ± 0.82 times, in the experimental group - 19.7 ± 0.91 times. The number of push-ups in group No. 1 and group No. 2 was 13.49 ± 1.78

times, against 18.62 ± 1.22 , respectively. A comparative analysis of the groups revealed a significant difference ($P < 0.05$) of the value of this indicator with some advantage among students of the experimental group.

The revealed increase in the power indices of the muscles of the abdomen and back was also slightly higher among the students of the experimental group, in contrast to the control. After the 2nd year of training sessions, 13.41 ± 1.36 times among students of the experimental group, versus 17.21 ± 1.84 times among students of the control group for indicators of abdominal muscles and 15.33 ± 1.76 and $19, 2 \pm 1.68$ times ($P < 0.05$) for indicators of back muscles, respectively.

The determination of the concentration of explosive force (long jump from a place) after 2 years differs from the start of the experiment in both the control and experimental groups. For students in the control group, the long jump from standstill was 156.62 ± 2.68 cm versus 161.86 ± 2.39 cm in the experimental group from 158.98 ± 3.23 cm to 174.47 ± 2.46 cm ($P < 0.05$).

In special tests to determine the flexibility in the hip joints, coordination stability, a sense of static balance and the coordination of movements of the whole body among students of the experimental group, in contrast to the control group, more significant shifts of the studied parameters upward, which had significant differences, were noted ($P < 0.05$) in digital comparative analysis by groups.

The exception was the 30 m running indicator. It reflects the speed qualities of the students (development of speed), which, 2 years after the start of the experiment, allowed us to identify a general trend in improving temporary results. In the control group, it amounted to 5.41 ± 0.07 s (initial result 5.52 ± 0.06 s). In the experimental group (initial result 5.45 ± 0.04 s), the final one was 5.29 ± 0.05 s ($P > 0.05$). According to the presented digital indicators and a comparative analysis of the results in both groups, we can state their positive upward trend, however, they were significantly ($P < 0.05$) better among students from the experimental group.

Assessment of the development of the functional state of individual body systems of students at rest, were evaluated at the beginning and at the end of a long experiment. Vital lung capacity — before the experiment in the two groups, there were no significant differences. After the experiment, its positive tendency to increase was established. So, at the beginning in the control group it amounted to 3200 ± 210 ml, after the experiment 3430 ± 220 ml. In the experimental group, it increased from 3160 ± 215 ml to 3680 ± 230 ml, ($P < 0.05$). In assessing the work of the cardiovascular system, it should be noted that the heart rate at rest among students of the experimental group was lower than in the control. The blood pressure at the time of the end of the experiment also had a clear tendency to decrease.

IV. CONCLUSION

The obtained test results for students of both groups before and after a long experiment clearly illustrate that students on physical education classes according to the experimental program, on average, have higher digital indicators than students in the control group in developing physical qualities and functional state of students in physical education classes using gymnastics.

Based on the foregoing, it can be concluded that in the process of training sessions in physical education lessons, the use of various gymnastics, its non-traditional types using original applied and special gymnastic exercises of general physical training for university students, is an effective tool in developing their motor qualities and improving functional preparedness of the body for physical and mental stress.

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