



TRAINING PROGRAM FOR DEVELOPMENT OF THE PHYSICAL CHARACTERISTIC OF STRENGTH IN STUDENTS

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ABSTRACT

During the recent years, more often sports specialist are focusing on improving the content of sports curriculum at the schools of higher education. The PURPOSE of the training program is to improve and develop the physical characteristic of strength in students / men /. The METHODS used to achieve the goal in the research are: theoretical analysis, sports-pedagogical testing, pedagogical experiment, pedagogical observation, graphic analysis, comparative analysis. The experiment was conducted in the academic year 2019, with the first and second year students of the Faculty of Veterinary Medicine, Faculty of Agriculture, Faculty of Economics at the Thracian University. The number of the observed students was 70, who were randomly divided into experimental and control groups. When analyzing the RESULTS obtained from the performed tests, it was found an increase in some indicators. The used training program proved its effectiveness with the results from the study. CONCLUSION: This program can be successfully applied in the classes of physical education and sports at the Higher Schools.

Key words: Higher Schools, Experiment, Improve, Increase, Successfully applied

INTRODUCTION

The Physical Education and Sports is the only subject in the curriculum of higher education institutions which contributes to better learning of the students, by physical activity (1-3). Fitness education at the University should be aimed at strengthening health, faster recovering after mental fatigue and maintaining good mental health (4). Every student knows that when training is conducted in high mood, the physical activity is accepted unreservedly (5). The quality of the training program determines the degree of its impact on the students who are involved. In order to develop the characteristic of strength, it is necessary to prepare the student in such a way so that to stimulate various biochemical and morphological adaptive changes of the neuromuscular apparatus, on the basis of which

greater strength abilities occur (6). In the most sports where all the actions and efforts of the sportsman are aimed at overcoming the resistance of his own body weight, relative strength is crucial, ie. the maximum force relative to 1 kg body mass. And in sports where the actions and efforts of the sportsman are aimed at overcoming external resistance, the absolute strength plays a decisive role (7).

The research was conducted with students from the Trakia University in Stara Zagora. Seventy students from the first and second year (man) of their study, from the Faculty of Veterinary Medicine, the Faculty of Agriculture and the Faculty of Economics participated in the research. They were randomly divided into an experimental group (42 students) and a control group (28 students).

The aim of the study is to find out the impact of the created training program for the development of the physical characteristic of strength.

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METHODS

Tasks:

1. Study of the literature;
2. Preparing the test battery;
3. Creating a training program;
4. Analysis of the results.

For the purpose of the research, the following methods were used:

1. Theoretical analysis;
2. Sport-pedagogical tests;
3. Pedagogical experiment;
4. Variation analysis;
5. Graphic analysis;
6. Comparative analysis

The created test battery includes 5 tests:

1. Long jump from a spot with both legs;
2. Abdominal presses to failure;
3. Push-ups to failure;
4. Throwing a medicine ball (3 kg) with both hands overhead onward;
5. Throwing a medicine ball (3 kg) with both hands backward.

RESULTS

The results of the study provide information about the development of strength as a physical characteristic in students as a result of the applied training program. In the present study to determine the physical condition, we measure the quantitative values of 5 tests.

After analyzing the results of the test long jump from a spot with both legs to determine the explosive force of the lower limbs we can summarize the following results. The average values of the input measurements of the experimental group (EG) are 202.6 cm and in the second 221.7 cm. The positive growth is 19.1 cm. The average values of the input measurements of the control group (CG) are 198.5 cm and in the second one are 205, 8 cm. The positive growth is 7,3 cm. The difference in the increase of the average values between the two groups is 11, 8 cm in favor of the EG. Graphically, the results are shown in **Figure 1**.

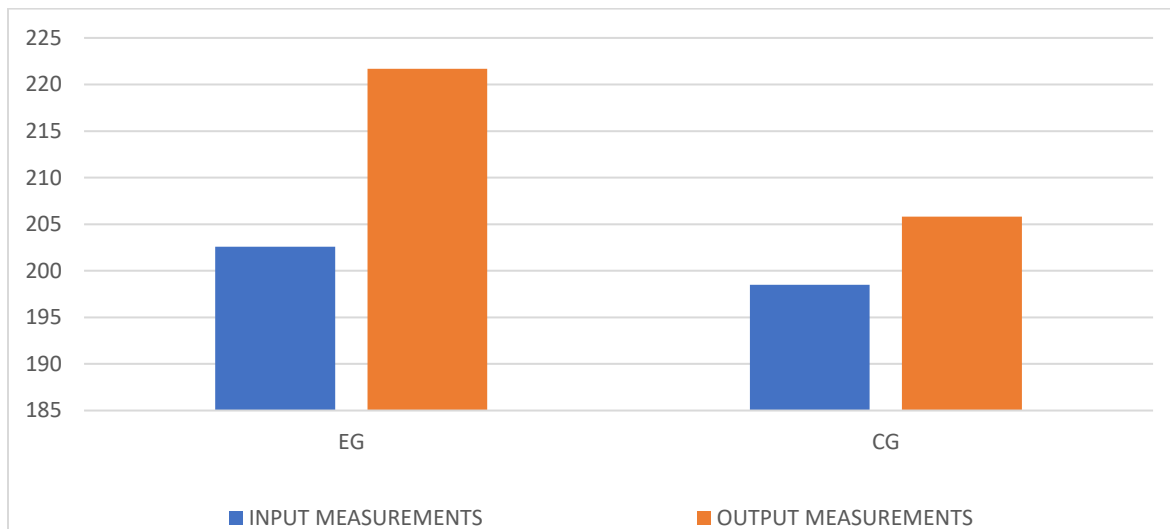


Figure 1. Long jump from a spot with both legs

After analyzing the results of the test abdominal presses to failure; to determine the strength of the abdominal press we can summarize the following results. The average values of the input measurements of the EG are 50.5 n. and in the second 62.5 n. The positive growth is 12 n. The

average values of the input measurements of the CG are 48.5 n and in the second one are 50.5 n. The positive growth is 2 n. The difference in the increase of the average values between the two groups is 10 n in favor of the EG. Graphically, the results are shown in **Figure 2**.

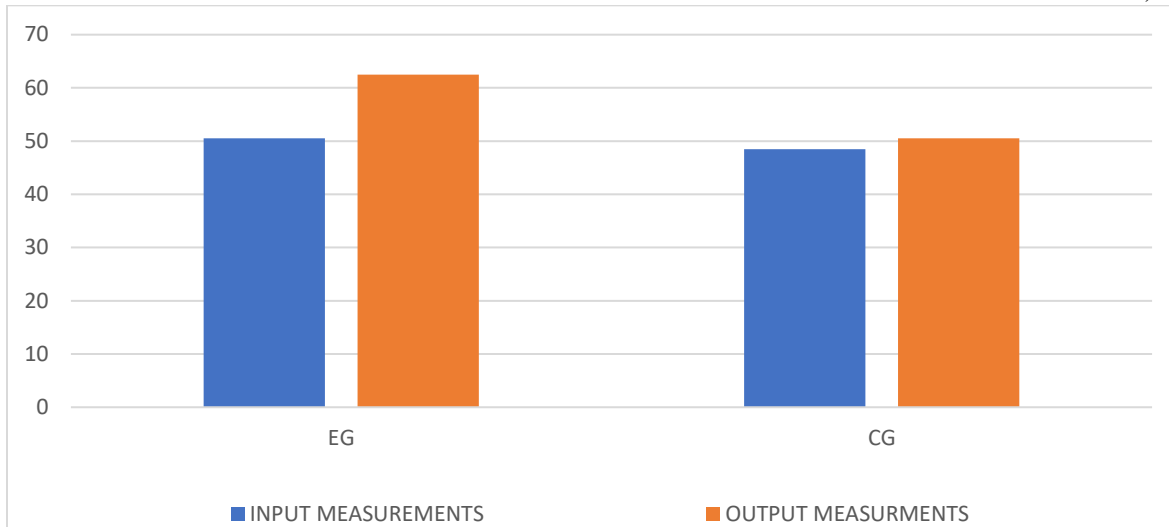


Figure 2. Abdominal presses to failure

After analyzing the results of the test of Push-ups to failure to determine the strength of the upper body we can summarize the following results. The average values of the input measurements of EG are 18 n and in the second 26 n. The positive growth is 8 n. The average values of the input measurements of CG are 20 n and in the second

one they are 18 n. The CG has showed a decrease in the result by 2 n. The difference between the average values between the two groups is 10n in favor of EG Graphically, the results are shown in **Figure 3.**

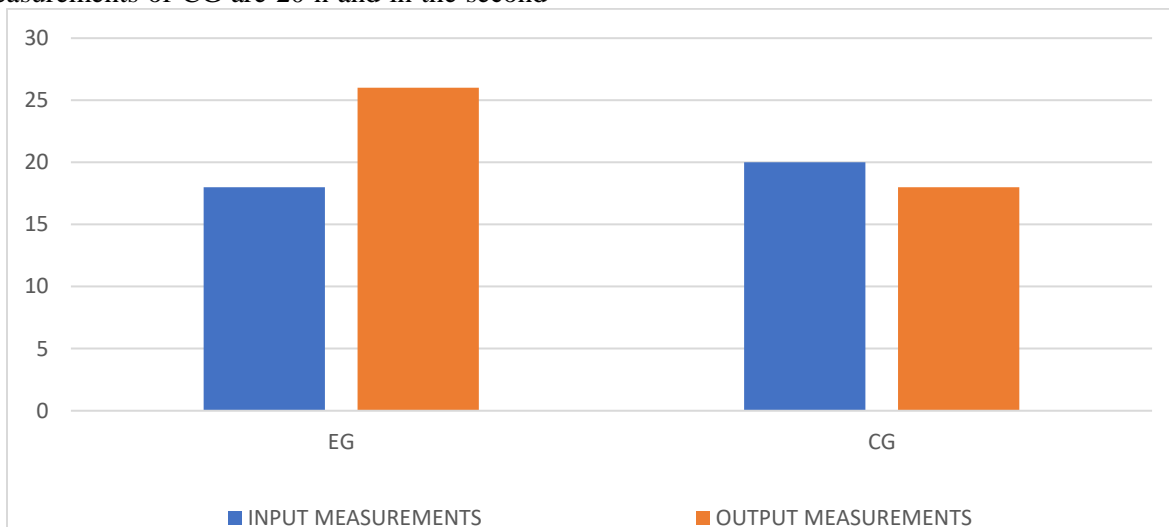


Figure 3. Push-ups to failure

After analyzing the results of the test throwing a medicine ball (3 kg) with both hands overhead onward to determine the strength of the upper, lower limbs and the strength of the body we can summarize the following results. The average values of the input measurements of the EG are 501.56 cm and in the second 543.37 cm. The

positive growth is 41.81 cm. The average values of the input measurements of the CG are 516.30 cm and in the second one are 524.62 cm. The positive growth is 8.32 cm. The difference in the increase of the average values between the two groups is 33, 49 cm in favor of the EG. Graphically, the results are shown in **Figure 4.**

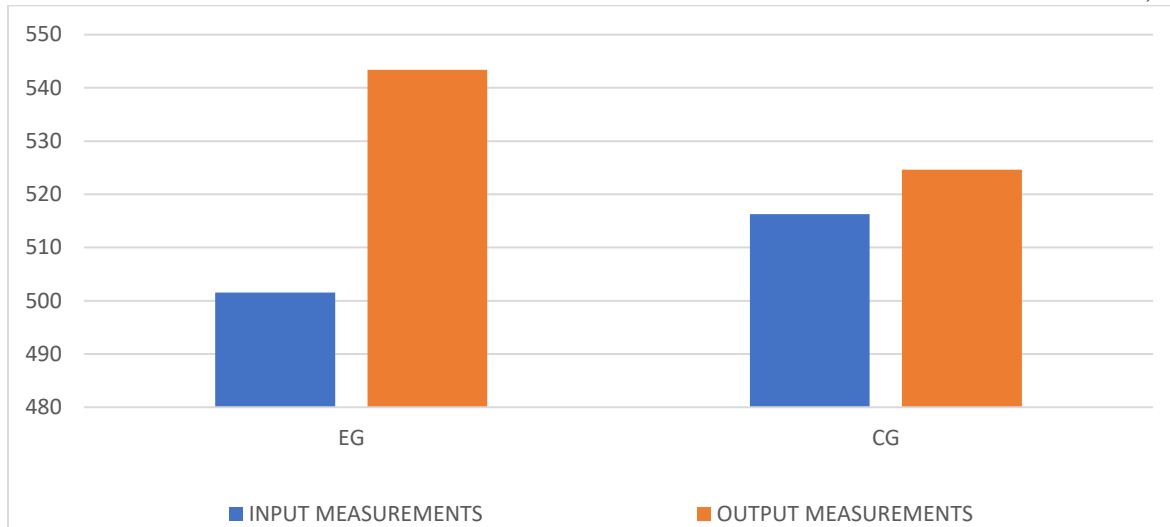


Figure 4. Throwing a medicine ball (3 kg) with both hands overhead onward

After analyzing the results of the test of Throwing a Medicine Ball (3 kg) with both hands back to determine the strength of the upper, lower limbs and the strength of the body we can summarize the following results. The average values of the input measurements of EG are 635,35 cm and in the second 740,20 cm. The positive growth is

104,85 cm. The average values of the input measurements of CG are 642, 30 cm and in the second one they are 628, 20 cm. The CG has showed a decrease in the result by 14,10 cm. The difference between the average values between the two groups is 118,95 cm in favor of EG Graphically, the results are shown in **Figure 5**.

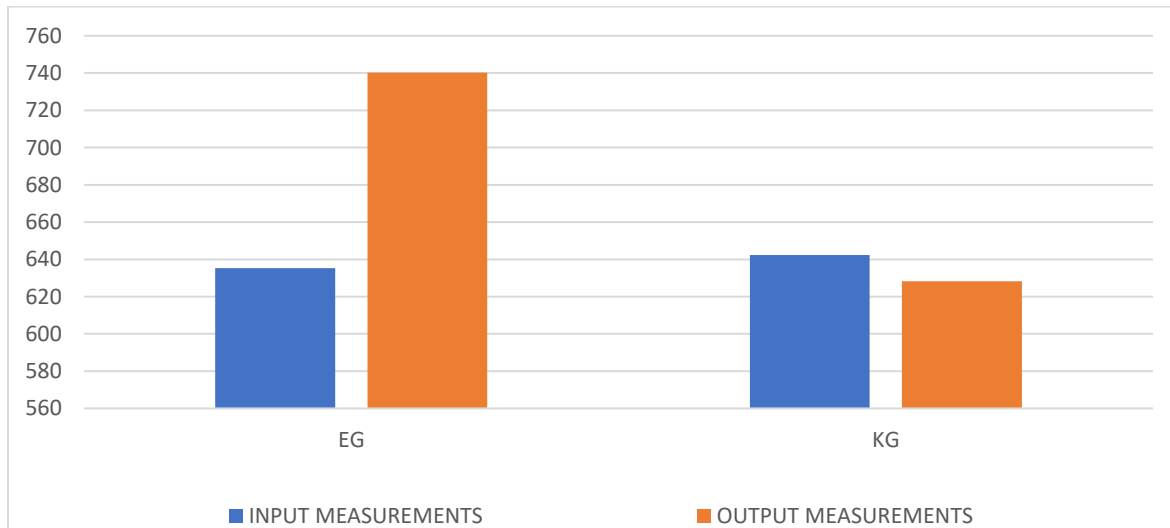


Figure 5. Throwing a medicine ball (3 kg) with both hands backward

CONCLUSIONS

1. The applied training program has proved its effectiveness by improving the studied physical characteristic of strength in the Experimental Group;

2. The results of the Control Group has showed insignificant improvements even in some of the decrease tests;

3. The proposed training program can help to organize and conduct classes better and more

effectively in the training of non-sports students in higher education institutions

4. The data which have been obtained from the present study should be provided to sports educators in order to optimize the training process in higher education institutions.

REFERENCES

1. Peeva, D., Georgiev, A., Adapted eurofit tests: representation of physical development of different age children groups at St. Kliment Ohridski private primary school-explosive strength. *Trakia Journal of Sciences*, Vol.18, suppl.1, pp 797-798, 2020, ISSN 1312-1723
2. Peeva, D., Nedkova, M., Longitudinal research of body mass index of newly accepted female students at CT „Todor Kableshkov”, 17th Symposium on sport and physical education of youth, Activities in physical education and sport, *International Journal of Scientific and Professional Issues in Physical Education and Sport. APES*, Vol. 4, 1/ 2014, Ohrid, Republic of Macedonia.
3. Peeva, D., Dynamics of physical quality force of students at the Todor Kableshkov university of transport after rugby-women training, *Trakia Journal of Sciences*, Vol. 17, Suppl. 1, 2019, C. 680-683, ISSN 1312-1723
4. Ivanova, M., Petkov, P. Innovative methods for developing physical strengths and endurance in students, *Trakia Journal of Sciences*, Vol. 17, Suppl. 1, pp 821-825, 2019, ISSN 1313-3551
5. Boyanov, V., Encyclopedia of the special body building principles and methods, Vol. 3, pp 219-220, 2006 ISBN 954-528-124-3
6. Gavriski, V., Kiselkova, E., Stefanova, D., Bichev, K., Human physiology with the physiology of sport, *Vol.3, pp 100-101, 2006*, ISBN 95499315-75-4
7. Petrov, V., Everyone needs strength, *Vol.2, pp 43-44, 1988* ISBN 953-352-221-1

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