

RESEARCH ON THE ENDURANCE AND SPEED INDICATORS OF STUDENTS FROM SOFIA UNIVERSITY “St. KLIMENT OHRIDSKI”

(Preliminary communication)

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Abstract

Specialization in “Physical Education and Sport” was introduced at Sofia University “St. Kliment Ohridski” in 2009/2010 academic year. Every year about 30 students are admitted, some of them foreign. Entrance examination does not include criteria related to sport and that puts some doubts on the preliminary preparation of future specialists. In the academic year 2014/2015, within the frame of activities in track and field athletics for specialization “Physical Education and Sport” (PES) on one side and jogging (athletics) for other students at Sofia University (SU) two tests were administrated – one for endurance and one for speed. The study involved 18 students from PES and 20 sportsmen from the general SU group (control group). Two tests were made – “Beep” test and 35 meters sprint test. The results were statistically processed. In both tests students from general (control) group showed better average result (\bar{X}) than PES students. Students from PES show lower results in tests for endurance and speed compared to the general group athletes despite the fact that they attend specialized classes in different sports. Results confirm our opinion that it is imperative to introduce special criteria related to sports for future specialists.

Keywords: *students, physical education and sport, athletics, motor testing, motor endurance, motor speed, kinesiology experiment, physical ability, analysis of variance*

INTRODUCTION

The modern educational system is in closely relationship with the resulting changes and features in the development of modern society. Successful realization of the knowledge and skills of students is dependent on the skills and competencies of their teachers.

Main task of education is the training of qualified specialists, people with diverse knowledge and well trained in their sphere of activities.

In the modern educational system in Bulgaria and especially in the area of physical education and sport in recent years tends to lower the level of competence of the pedagogues. The reasons are many and varied. One of them is lowering the criteria for selection of the future specialists.

In a survey examining attitudes of students from different disciplines of the FPPE, Sofia University for sports and their past experience, 50.6 percent reported that they exercise regularly in primary and secondary school. It is worrying that the remaining 49.4% of the respondents answered that they did not do sports regularly (Ignatov, 2016).

The quality of physical education and sports train-

ing classes does not meet the modern requirements. The lack of qualified physical education specialists in many of the cities is one of the main reasons for bad organization and control of the physical education process (Tzvetkov, 2014).

Mileva (2015) makes an interesting research among first-year students at the Teachers Faculty of National Sports Academy – Bulgaria on their views on the status of the teaching profession. A large percentage of respondents - 39.8% assessed the status of the teacher of physical education and sport at an average 20.3% and still as low and very low. This fact, in addition to poor past experience of future sports teachers in Bulgaria, put the profession to the test.

For the successful realization of physical education teaching in addition to appropriate curricula and material conditions for teaching professionally educated teachers are also necessary (Majatović, & Ilić, 2014).

Specialization in “Physical Education and Sport” (PES) was introduced at Sofia University “St. Kliment Ohridski” in 2009/2010 academic year at the Faculty for Preschool and Primary school Education (FPPE). In 2013 the first class of students - professionals bach-

elor's degree has graduated. From the first ever intake each year about 30 candidates - students successfully meet the requirements and begin training in this subject, as in each new group has foreign students, mainly from Macedonia, Serbia, Moldova, Greece and others. Unfortunately the faculty has no requirement to cover certain criteria related to the future specialization of young people - namely sports. This in our opinion is a serious prerequisite for admission of students with insufficient preparation for the upcoming training. According to our observations during the learning process, a lot of newcomers do not have the sports knowledge and abilities.

Within the program of each group of "PES" there are included three semesters of classroom practice in athletics, as in the last semester except practice there are lectures. The first two semesters, students receive ongoing evaluation and the final is about of the Methods of teaching athletics and theoretical knowledge in the discipline.

In the academic 2014/2015 year between classes in athletics with students from the "PES" on the one hand and sports classes (jogging and athletics) for SU students from the other were conducted tests to establish the level of physical ability. For the purpose of this publication will be compared between the measured results in two tests - "Beep Test", which is an indicator of endurance and sprint 35 meters - of speed. Performance in both tests were dropped for two groups - students of "PES" - 18 athletes of second course and students of general group of Sport (the control) - 20 persons. It should be noted that the control group included students who are actively engaged in sports (mainly running more than once a week).

Students in the first group (Specialty PES) are trained in existing curriculum and their colleagues of the general group (control), attend once a week sports at the University. It is noteworthy the fact that the students of PES for curriculum have classes in different sports while studying, which implies a higher level of physical performance. Athletes of the general group are actively involved, mainly running, but do not represent

sports teams or clubs, and concerned by himself, with unorganized sport outside education - training process in high school.

Purpose: Highlighting the need to introduce specialized examination requirements in sport for PES students in Sofia University, which will improve the quality of admission of future professionals - teachers of physical education and sport.

Accordingly, the purpose of the research we set to perform the following *tasks*:

1. Define the level of physical ability in tests for endurance and speed.
2. Compared the performance of two groups (PES and general group) for both tests of speed and endurance.
3. Comparison of the results in valuation tables.

RESULTS AND DISCUSSION

Students from both groups, independently one by one within the same practice held preheating and perform two tests, having first two sprint stages and then endurance test.

▪ 2x35 m sprint

On running track is marked distance and each studied occupies start of pre-drawn starting line. Ran with a maximum speed of two sections 35 m with 3-4 minutes rest between them and reported a better result.

▪ "Beep Test" - multistage endurance test is one of the most popular tests used to verify and assess the endurance in many sports.

Pre-drawn distance of 20 meters is marked with lines, cones, etc. Shuttle running begins of a certain low level, as the investigated persons should not lag behind the recorded sound. Each level continues one minute. The test ends when the running is not possible in two consecutive "shuttles" to be get in time. The most commonly used is the version with an initial speed of 8.5 km / h, the increase in speed every minute is 0.5 km / h. Record number of completed sections to the last level.

For the purpose of the study was used analysis of variance and the data were processed with statistical package SPSS - 19th version.

Table 1. "Beep" test - data for control group and PES group

„Beep Test“	N	X min	X max	R	X	S	V	V%	As	Ex
PES	18	3,4	8,0	4,6	6,1	1,23	1,53	20,26	-0,49	-0,11
Control group	20	4,2	8,1	3,9	6,8	1,89	1,19	28,00	-0,68	-0,31

Note: Critical values of coefficients of skewness and kurtosis with n = 20 and $\alpha = 0.05$ is equal to 1,024 and 1,985.

Table 2. 35 m sprint test - data for control group and PES group

35 m sprint	N	X min	X max	R	\bar{X}	S	V	V%	As	Ex
PES	18	4,50	6,22	1,32	5,16	0,52	0,27	10,08	-0,79	-0,11
Control group	20	4,56	5,22	1,26	4,91	0,20	0,04	4,07	-0,25	-1,12

Note: Critical values of coefficients of skewness and kurtosis with n = 20 and $\alpha = 0.05$ is equal to 1,024 and 1,985.

Table 3. Evaluation table, test results of 35 m and number of persons, according to

Rating	Men norms, 35m sprint	Number of persons falling within the category, PES	Number of persons falling within the category, general	Women norms, 35 m sprint	Number of persons falling within the category, PES	Number of persons falling within the category, general
Very good	< 4,80	4	7	< 5,30	3	7
Good	4,80 – 5,09	3	6	5,30 – 5,59	2	
Average	5,10 – 5,09	3		5,60 – 5,89		
Poor	5,30 – 5,60			5,90 – 6,20	2	
Very poor	>5,60			>6,20	1	

Table 4. Evaluation table, test results of VO2 max of „beep“ test and number of persons, according to

Rating	Men norms, VO2max, ml/kg/min	Number of persons falling within the category, PES	Number of persons falling within the category, general	Women norms VO2max, ml/kg/min	Number of persons falling within the category, PES	Number of persons falling within the category, general
Excellent	>52,4			>41		
Very good	46,5 – 52,4			37 – 41		1
Good	42,5 – 46,4			33 – 36,9	2	2
Average	36,5 – 42,4	3	9	29 – 32,9	3	3
Poor	33 – 36,4	5	2	23,6 – 28,9	3	1
Very poor	<33	2	2	<23,6		

The data results for the two tests are presented in Tables 1 and 2.

In table 1 are the processed values for “beep” test, which showed that the arithmetic mean (\bar{X}) for PES is 6.1, and for the Control group is 6.8. Students of the General group of sport show better results. It should be taken into consideration that both groups are mixed (men and women) and for convenience are not separated by gender. The coefficient of variation $V\%$, indicating the degree of dispersion (homogeneity of the sample) for this test was respectively 20.26 and 28.00 for the PES and for the control group - ie the sample is approximately homogeneity. The coefficient of asymmetry which gives an indication of the symmetry of the distribution curve (A_s) <0 , indicates that the distribution curve is left withdrawn for both groups. The height of the peak of the normal distribution is described by the indicator kurtosis (Ex), which in the normal distribution is equal to zero. In this case we have values for $X <0$ for both groups, suggesting negative kurtosis (or down from the top of the normal distribution).

Table 2 shows data for the test “35 meters sprint.” The average arithmetic mean (\bar{X}) for PES is 5.15 seconds and for the control group $\bar{X} = 4,91$ sec. Again, as with “beep” test students in the control group have better mean value of the quality sprint, as measured by this test. The coefficient of variation $V\% = 10.08$ PES, a control group $V\% KG = 4.07$, which indicates homogeneity of the sample. Here, the values of skewness and kurtosis are negative signs for the two groups, respectively, left or downloaded distribution curve and decrease from the peak of the distribution curve. Interpretation of results reasonably be concluded that despite the expectations

of the students in group sports have better indicators of endurance and sprint from those of the group of PES measured by two specific tests.

In the scientific literature, commonly used valuation tables by which to grade the level of respondents in a given indicator. In Internet there are many such tables, as in this case are used for such amateur sportsmen. In Table 3 and 4 are summarized and the number caught in each group of students, respectively for the test “35 meters sprint” and VO2 max, corresponding to the result of the “beep” test.

Both tables can be delineated some trends, although the number of persons participating in the study is not large (a total of 38 students from both groups):

- Students show better results in the test speed, when in terms of endurance, most of them fall into the bottom of the table - from medium to low and very low level.

- The table shows that students from general group have a very good results for the sprint, while 1/3 of athletes from PES (6 persons) fall groups of medium to weak. In the same way in the test for endurance, the students from general group outperform those from the “experts”.

CONCLUSION

Establishing specific criteria for admission of students in specialty “PES” in SU to assess their abilities in the specific area is imperative measure. Otherwise it will be difficult work with future specialists, some of whom enter the University without ever have engaged in active sport, with little or no prior preparation. Students from sports groups showed very low results in tests of endurance, which once again proves the low level of

development of this so important motor quality. It necessary target work to improve performance associated with endurance.

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