

COMPARATIVE ANALYSIS OF MOTOR QUALITIES OF STUDENTS FROM HIGHER SCHOOLS, NON-SPECIALIZED ON SPORTS

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ABSTRACT. The good general state of students is a precondition for building up in each of them, a number of character and professional necessities, motivation, culture, manifestation, self-perfection, full and correct rationalization of free time, combination of activities and interests. The purpose of the investigation is to establish and make comparison of level of development of basic motor qualities of students from two higher schools, University of Medicine – Sofia and Trakia University – Stara Zagora. The following tasks have been fulfilled: survey of literature sources, making of tests, comparative analysis of the results got. Data from the comparative analysis of the basic motor qualities show that: speed of movement of students from both higher schools is not of the necessary good level; comparatively better is developed the speed of vantage hand, students from Trakia University are with higher qualitative grades; qualitative flexibility, explosive strength of lower limbs, strength endurance of upper limbs, shoulder girdle and of abdominal muscles and endurance, are manifested at a higher grade, with the students from Trakia University, than the students from the University of Medicine.

Key words: physical qualities, students, qualitative grade, level of development

Introduction

Level of development of physical qualities is of a particular significance, and this is especially valid for the young generation. They speak about certain characteristics of the health condition and working efficiency.

Investigators Кадыров (1987), Сапов & Солодков (1980) and others, consider the working efficiency as a system of three components: Informational component characterizes with indices such as speed of information processing (short and operative memory, distribution of attention); Functional one, includes indices of the functional condition tremor, tepping-test, myotonometria, strain

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index; Motor component reflects the indices of the motor system (general/total endurance, ability for control of muscle efforts, speed-strength qualities, co-ordination capabilities).

The profound investigation of these three components, including the condition, development and perfection of the main motor qualities helps for increasing of the working efficiency and health care, students included.

The different state of preparation and motivation of students imposes differentiation in the approaches, at the education on physical culture and sports. Many higher schools come out of the traditional way of education and offer rich variety of motor activities, including new sports in the sport perfection, facultative education, extra-curricular forms, modular education and etc. (Божкова, 2011; Божкова, 2011; Къчев, Златев & Дончева, 2009; Пеева (2008; Zlatarova & Bozhkova, 2008).

The good general condition of students is a precondition for building up in each of them, a number of character and professional necessities, motivation, culture, manifestation, self-perfection, full and correct rationalization of free time, combination of activities and interests.

The above-said has formed the *aim* of the concrete investigation, and namely – to establish and compare the level of development of the basic motor qualities, with students from both higher schools, University of Medicine-Sofia and Trakia University – Stara Zagora

For realization of the aim, the following *tasks* have been fulfilled:

1. Survey of literature sources.
2. Conducting of tests.
3. Comparative analysis of the result got.

Methods

By the current and other similar investigations, the knowledge of the motor status of students from various higher schools in the country is enlarged, including the non-specialized on sports ones, and the influence of the acting educational programmes, on the subject Physical culture and sports, on their psycho-physical development (Дякова & Барокова, 2003; Игнатова at all., 2010; Симеонова, 2007; Bozhkova, 2011; Zlatarova & Bozhkova, 2008).

Object of the investigation are 128 students from 1st and 2nd year of education (56 from the University of Medicine – Sofia and 72 from Trakia University – Stara Zagora).

At testing, we have taken into consideration, the statistic characteristics of EUROFIT test battery, at its application in the higher schools (Цигилис, 2003).

The following 7 tests for establishment of the level the basic motor qualities, distributed into tree groups, have been used:

- ↳ Tests for measurement of the level of speed and flexibility – from 1st to 3rd (50 m dash; Tepping-test (EUROFIT test); Sitting forward tilt (EUROFIT test);
- ↳ Tests for measuring the strength abilities – from 4th to 6th (Standing long jump (EUROFIT test); Bending and unbending of arms at support; Standing up from occipital lying position to sitting position);
- ↳ Test for measuring the level of endurance – 7th (300 m dash).

Results have been subjected to mathematical-statistic analysis (Гирова, 1999).

The assessment of the extent of development of the main motor qualities of students, from both higher schools has been made according to the norms for assessment of fitness of students, presented on **Table 1**. (Дякова, 2007).

Table 1.

Norms for assessment of motor capabilities of students

Test №	50 m (s)	Tepping test (s)	Sitting forward tilt (cm)	Standing long jump (cm)	Bending and unbending of arms at support (times)	Standing up from lying back position to sitting position (times)	600 m (s)
Grade	1	2	3	4	5	6	7
Excellent	<6.9	<8.8	>10	>234	>49	>63	<127
Very good	6.9-7.0	8.8-9.7	9-10	225-234	43-49	58-63	127-130
Good	7.1-7.5	9.8-11.8	3-8	204-224	30-42	45-57	131-137
Fair	7.6-7.7	11.9-12.8	0-2	194-203	23-29	39-44	138-140
Poor	> 7.7	> 12.8	<0	<194	<23	<39	>140

Analysis of the results

From the results on **Fig. 1**, it is evident, that the speed of movement of students from both higher schools, is not of the level necessary. Half of the students, from the University of Medicine (50%) are with qualitative grade "Poor". Almost half of the investigated quota from Trakia University (41,7%), is also with the lowest qualitative grade. From Trakia University, the part of students with "Fair" grade (31,9%), is almost twice bigger, in comparison with their colleagues from the University of Medicine (17,8%). Too close are the percentages of students from the University of Medicine and Trakia University with "Good" grade - 28,6% and 26,4% respectively. Equal is the percentage of students from the University of Medicine with "Very good" and "Excellent" grades (1,8% each). With students from Trakia University, there are no individuals investigated, having such qualitative grades.

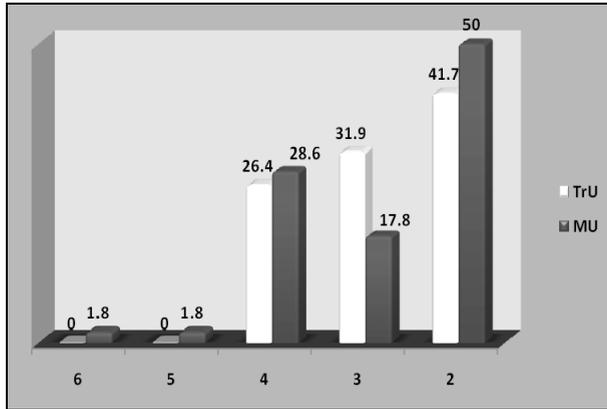


Fig. 1. Percentage of investigated individuals, depending on the qualitative grade for 50 m

Results on **Fig. 2** show the comparatively better condition at speed of vantage hand, with both higher schools, independently of the fact, that a quarter of the investigated individuals from the University of Medicine and Trakia University are with poor qualitative grade. We observe here the higherst percentages with the qualitative grade “good”, the higher percentage being for the students from the University of Medicine (42,9%), in comparison with that from Trakia University – 30,5%. With higher percentage at “very good” and “excellent” grades (13,9% each), are the students from Trakia University, while their colleagues from the University of Medicine are with much lower percentages, 7,1% and 8,9% respectively.

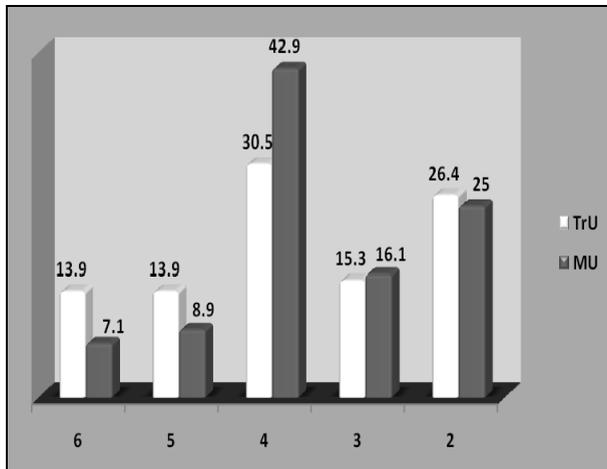


Fig. 2. Percentage of investigated individuals, depending on the qualitative grade for Tepping-test

On **Fig. 3**, the data from the qualitative assessment for Sitting forward tilt is shown. It is apparent, that the quality flexibility is very well developed with the students from Trakia University, than the students from the University of Medicine. More than one third of the investigated individuals, from Trakia University (34,7%) are with “excellent” grade, and the percentage of students with the same grade, at the University of medicine is far lower – 5,4%. Better is the situation for students from Trakia University as regards the qualitative grade “poor”- the percentage is much lower (22,1%), compared to that of their colleagues from the University of Medicine – 33,9%.

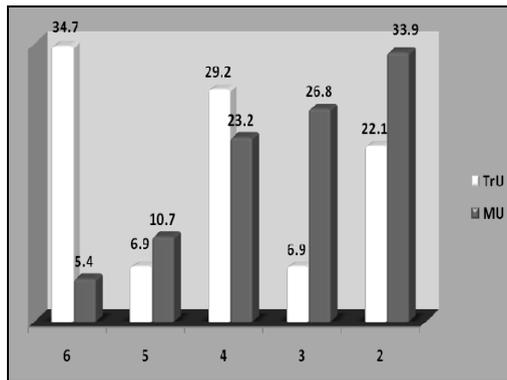


Fig. 3. Percentage of investigated individuals, depending on the qualitative grade for Sitting forward tilt

On **Fig. 4**, it is shown that the percentages of students from Trakia University, with qualitative grades “Excellent” (8,3%), “Very good” (8,3%) and “Good”(40,3%) are higher than those of the University of Medicine - 0%, 3,6% and 17,9% respectively. The explosive strength of lower limbs is poorly developed, with the bigger part of investigated individuals from the University of Medicine (57,1%), compared to that at Trakia University – 33,8%.

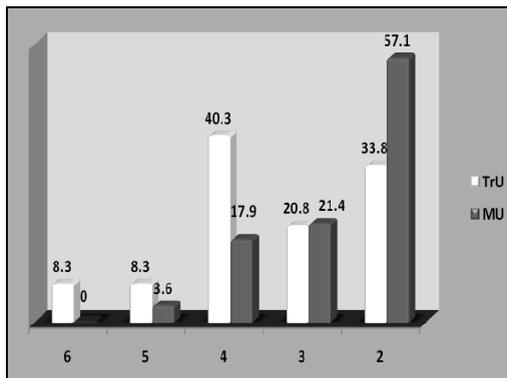


Fig. 4. Percentage of investigated individuals, depending on the qualitative grade for Standing long jump

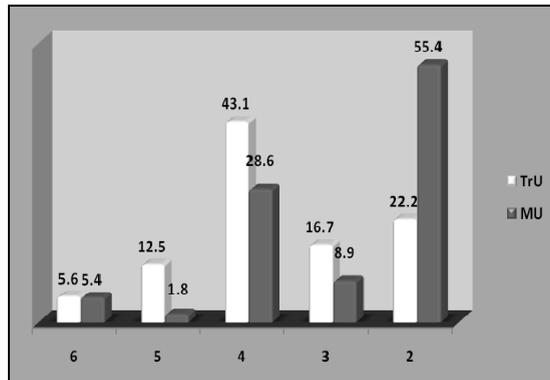


Fig. 5. Percentage of investigated individuals, depending on the qualitative grade for press-up

The strength endurance of upper limbs and shoulder girdle is better developed with students from Trakia University, compared to that of the University of Medicine. With the four positive grades – “Excellent”, “Very good”, “Good” and “Fair”, the percentage of the investigated quota from Trakia University is higher than that of the University of Medicine. In confirmation to that, is the higher percentage with “poor” grade, at the University of Medicine – 55,4% against 22,2%, at Trakia University (**Fig. 5**).

Strength endurance of abdominal muscles is poor with more than the half of the investigated individuals, from the University of Medicine (55,4%), and with Trakia University – 30,6%. Prevailing is the percentage of students from Trakia University, with grade “Good” - 45,8%. As a whole, data show the better results concerning the quality considered, with students from Trakia University (**Fig. 6**).

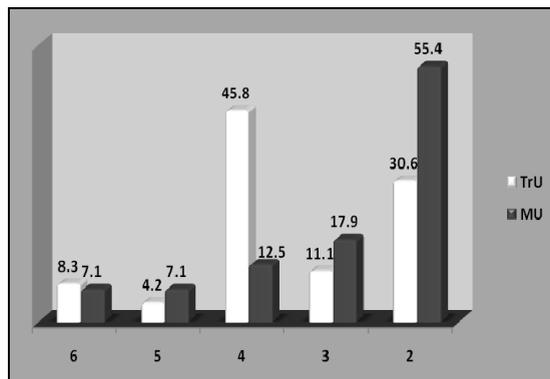


Fig. 6. Percentage of investigated individuals, depending on the qualitative grade for abdominal press

On **Fig. 7**, the percentages of investigated individuals, depending on the qualitative grade for 600 m dash are shown. It is apparent that the quality endurance is better developed with the students from Trakia University. Serious anxiety raises the high percentage of students with qualitative grade "Poor". With students from Trakia University, same is 52,8%. The extremely high percentage at the University of Medicine - 87,4%, indicates the necessity of purposefull work for improvement of this quality, which is a main one for the efficient fulfillment of any activity, both at daily round and at practicing of each profession.

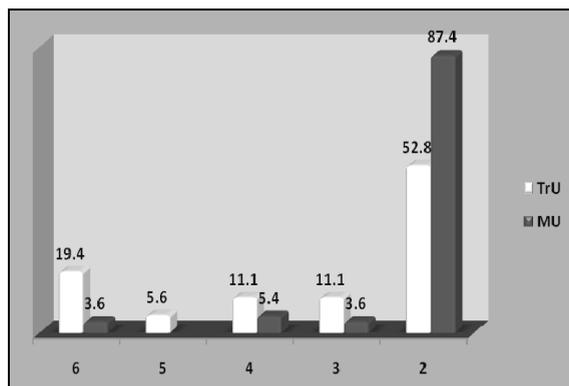


Fig. 7. Percentage of investigated individuals, depending on the qualitative grade for 600 m dash

Conclusions

1. Physical culture and sport, as a specific activity of students, helps for their social-cultural position and social including, building up of character significant standpoint of the surrounding reality and virtue system.
2. In this investigation, we have used easily applicable tests, of acceptable validity and reliability, measuring the basic components of the motor preparation of students.
3. Data from the comparative analysis of the main motor qualities show that:
 - Speed of movement with students from both higher schools is not at the necessary good level;
 - Comparatively better developed is the speed of the vantage hand, students from Trakia University are with higher qualitative grades;
 - Qualitative flexibilty, explosive strength of lower limbs, strength endurance of upper limbs, shoulder girdle and abdominal muscles and endurance are manifested at a greater extent, with students from Trakia University, than with students from the University of Medicine.

4. This investigation and similar ones of students, directed towards the increasing of the quality of the preparation of future specialists, have big theoretical and practical value, and namely:
- Through qualitative assessment of the physical efficiency of work;
 - Comparative analysis between various excerpts / samples;
 - Longitudinal investigations of the dynamics of development of the motor qualities;
 - Investigation and assessment of the contribution of new methods and programmes for improvement of the physical working efficiency and etc.

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