UDK 796.012.1-057.87(497.7:497.11)

Georgi Georgiev,
Žarko Kostovski,
Viktor Mitrevski

QUANTITATIVE DIFFERENCES IN ACQUIRING THE MOTOR TESTS WITH STUDENTS FROM THE REPUBLIC OF MACEDONIA AND REPUBLIC OF SERBIA

INTRODUCTION

Dynamics and latest trends of modern life greatly condition, in some way, on the lives of young people, specifically on the correct growth and development of the young individual. Often it is evident in urban environments where the space is limited and the conditions are reduced for physical activity. The regular teaching on the subject physical education, upbringing and sport is the foundation that has fundamental values and significantly affect the growth, development and health of the individual. Modern teaching methods and work techniques are one of the sources that are used for following the bio-motor development, functional and motor abilities of the person. The application of motor tests is just one of the methods by which on the simplest way one can get to some information about the level of motor skills possessed by the individual.

The subject of our research were students from the Republic of Macedonia and the Republic of Serbia from the elementary education who regularly attended the course of physical and health upbringing, education and sport. Our goal was to determine whether there were differences in certain motor skills, determined by achieved results from the applied motor tests in this research.

METHODS OF WORK

The research was carried out on 124 respondents who performed teaching in urban environments, divided into two sub-examples males of age 14-15 years (+/- 3 months).The first sub-example was composed of 69 students from the eighth grade in the municipalities of Bitola and Prilep, from the Republic of Macedonia and the other sub-example was composed of 55 students of the eighth grade from the municipality of Kikinda -Republic of Serbia. The survey was conducted at the elementary schools OU "Goce Delchev" from Prilep and OU "Elpida Karamandi" from Bitola and OU "Fejesh Clara" and "Vuk Karadzhich" from Kikinda.

We tested motor skills among students using six motor tests of which two tests for assessing the explosive strength of legs (jump forward from a place - SDM and triple jump from a place-TDM), two tests for assessing starting speed (running at 20 meters from high start-T20VIS and running at 50 meters from high start-T50VIS) and two tests for precision assessing (darts-PIK and horizontal target shooting with a ball - GHT).

The basic descriptive statistical parameters of obtained indicators were processed, minimum and maximum score, arithmetic means, range, variance, standard

deviation, Skewness and Kurtosis. The determining of the differences' significance between the results of respondents in the survey was conducted by t-test.

RESULTS AND DISCUSSION

In Tables 1 and 2 are shown the basic descriptive parameters of the research results from motor tests among respondents from the both sub-examples (the Republic of Macedonia and Republic of Serbia). The number of respondents was defined (Valid N), arithmetic means (Mean), minimum and maximum score (Minimum, Maximum), distance (Rang), variance (Variance), standard deviation (Std.Dev.), Skewness (Skewness) and Kurtosis (Kurtosis). Based on the gained results were defined the upper and lower limit obtained values for each individual indicator and the distance between them.

Skewness' values of most indicators point to an asymmetric distribution of results. Excluding Skewness' values gained from the indicators for assessing of the starting speed among the respondents from R. Serbia: running at 20 meters from high start (Skewness = 2,26) and running at 50 meters from high start (Skewness = 1,80).

Kurtosis' values for most indicators are below the limit values, therefore the distributions are considered platikurtic. Leptokurtic, was noticed among the respondents from the Republic of Serbia at the indicators for assessing starting speed: running at 20 meters from high start (Kurtosis = 7,17), and running at 50 meters from high start (Kurtosis = 5,39).

Table 1. *Basic statistical parameters of gained motor tests' results among students from the Republic of Macedonia*

Descriptive Statistics (adstudy.sta)	Valid N	Mean	Minimum	Maximum	Range	Std.Dev.	Skewness	Kurtosis
SDM	69	176,39	110,00	238,00	128,00	25,732	-0,103	0,149
TDM	69	552,93	400,00	697,00	297,00	72,117	-0,265	-0,508
T20VIS	69	37,28	32,00	50,00	18,00	3,807	0,628	0,493
T50VIS	69	79,00	64,00	100,00	36,00	9,149	0,353	-0,688
PIK	69	29,87	5,00	44,00	39,00	10,238	-0,434	-0,801
GHT	69	15,51	5,00	29,00	24,00	5,868	0,378	-0,715

Table 2. *Basic statistical parameters of gained motor tests' results among students from the Republic of Serbia*

Descriptive Statistics (adstudy.sta)	Valid N	Mean	Minimum	Maximum	Range	Std.Dev.	Skewness	Kurtosis
SDM	55	174,85	105,00	220,00	115,00	24,304	-0,571	-0,007
TDM	55	551,98	374,00	647,00	273,00	55,410	-0,963	1,581
T20VIS	55	36,42	32,00	55,00	23,00	4,149	2,257	7,167
T50VIS	55	80,56	66,00	123,00	57,00	9,850	1,800	5,393
PIK	55	24,25	15,00	34,00	19,00	4,244	-0,158	-0,442
GHT	55	21,15	14,00	28,00	14,00	3,922	-0,260	-0,936

In other to see exactly whether there are differences in achieved results of motor tests during the study, using the t-test were determined differences in arithmetic means for each indicator individually.

From the inspection of the Table. 3 can be noted that among the indicators for explosive strength assessment (jump forward from a place-SDM and triple jump from a place-TDM) and starting speed (running at 20 meters from high start-T20VIS and running 50 meters from high start- T50VIS) are not observed statistically significant differences between students from the Republic of Macedonia and the Republic of Serbia. In both indicators for accuracy assessing the obtained values of Q (Q=.000, in the variable darts - PIK and Q=.000 horizontal target shooting with a ball - GHT), indicates that there are statistically significant differences in the gained results between the students of R. Macedonia and R. Serbia.

From the review may be noted that respondents from the Republic of Macedonia achieved better results in the variable for assessment of precision-darts (PIK) than the respondents from the Republic of Serbia and vice versa the respondents from the Republic of Serbia achieved better results at the variable for assessing the precision of horizontal target shooting with a ball (GHT) then the respondents from the Republic of Macedonia.

Table 3. *t-test, differences in the achieved motor tests' results among students from the Republic of Macedonia and the Republic of Serbia*

Variables	Groups	N	X	SD	t - test	Q
SDM	R. Macedonia	69	176,39	25,732	0,339	0,736
	R. Serbia	55	174,85	24,304		
TDM	R. Macedonia	69	552,93	72,117	0,080	0,936
	R. Serbia	55	551,98	55,410		
T20VIS	R. Macedonia	69	37,28	3,807	1,197	0,234
	R. Serbia	55	36,42	4,149		
T50VIS	R. Macedonia	69	79,00	9,149	-0,914	0,363
	R. Serbia	55	80,56	9,850		
PIK	R. Macedonia	69	29,87	10,238	3,812	**0,000**
	R. Serbia	55	24,25	4,244		
GHT	R. Macedonia	69	15,51	5,868	-6,117	**0,000**
	R. Serbia	55	21,15	3,922		

CONCLUSIONS

From the gained results the following conclusions can be stated:

- There are statistically significant differences between the achieved results in the motor tests' survey among students from the Republic of Macedonia and the Republic of Serbia.
- Statistically significant differences in the achieved results of motor tests were observed at the indicator for precision assessing at the both variables.

• Respondents from the Republic of Macedonia achieved better results at the variable for precision assessment - darts (PIK) than the respondents from the Republic of Serbia and vice versa the respondents from the Republic of Serbia at the variable for precision assessing - horizontal target shooting with a ball (GHT) achieved better results than the respondents from the Republic of Macedonia.

Literature

1. Bala, G. (1986). *Logicke osnove metoda za analizu podataka iz istrazivanja u Fizickoj kulturi.* Novi Sad: Sava Muncan.
2. Georgiev, G. i Mitrevski, V. (2010). Differences in the achieved results and obtained grades at the female students from deterrents cities of the Balkans. Годишник на техническия университет във Варна „Съвременни технологии на обучение, контрол и оценка по физическо възпитание и спорт в образователната система“ (стр.184-187). Варна: Технически университет.
3. Митревски, В. (2009). *Критериуми за оценување во наставата по спорт и спортски активности.* Магистерски труд, Скопје: Универзитет „Св. Кирил и Методиј“, Факултет за физичка култура.
4. Mitrevski, V. (2009). Differences in the Gained Results of the Male and Female Students Achievements as a Result of the Different Conditions in Which was Conducting Sport and Sports Activies Schooling. **Vo** *zbornik na Научни Трудове Том 48, серия 8.2 Физическо възпитание и спорт* (str. 89-93). Ruse: Rusenski Unversitet „Angel Kanchev“.
5. Mitrevski, V., Georgiev, G., Klinčarov, I., & Popeska, B. (2009). Differences in the Gained Results of the Male Students Achievements in First Year in Sport and Sports Activies Schooling. **Vo** *zbornik na Научни Трудове Том 48, серия 8.2 Физическо възпитание и спорт* (str. 67-71). Ruse: Rusenski Unversitet „Angel Kanchev“.
6. Mitrevski, V. (2009). Differences Between the Achieved Results of the Numerical and Descriptive Evaluated Females Students in the High Shools. **Vo** *zbornik na Научни Трудове Том 48, серия 8.2 Физическо възпитание и спорт* (str. 146-148). Ruse: Rusenski Unversitet „Angel Kanchev“.
7. Mitrevski, V., Georgiev, G., & Petrov, L. (2010). Qvantitative differences between schoolgirls at high school regarding the level of their achievements classes in physical education. **Vo** zbornik na trudovi Inovacii v obrazovanieto (str. 994-997). Sumen: Sumenski univerzitet „Episkop Konstantin Preslavski“, Pedagogiceski fakultet.
8. Rokita, A. (2001). Interes za sportske aktivnosti ucenika prvih razreda srednje skole u razdoblju od 1995. do 2001. godine, Kineziologija, 37 (1), 99-105.

QUANTITATIVE DIFFERENCES IN ACQUIRING THE MOTOR TESTS WITH STUDENTS FROM THE REPUBLIC OF MACEDONIA AND REPUBLIC OF SERBIA

The research has been conducted on two sub-samples of male gender from the Republics of Macedonia and Serbia, aged from 14 to 15 years (±3 months) who had their training classes in urban areas. The number of entities participating in the tests was 119 in total. The aim is to establish if there are differences in motor abilities through acquiring the motor tests for assessing explosivity, start speed, and precisity. Statistically significant difference between the two groups is established with the estimating precisity only.

Key words: *indicators, acquiring, estimation, training classes, test, differences.*