A contribution to the study of two ways of testing of motor abilitis of young students

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Summary: *The goal of this work was to determine the influence of two different ways of testing on transformation of motor abilities of young stuidents, in the conditions of self prevailing and prevailing of a partner (possible reserves of students' abilities were searched, provoked by competitve factor). The results denote a high significance of competition in getting better results during the testing of motor abilities of primary school students. These results, apart from having a great significance in testing motor abilities and getting more relevant indicators, are of valuable help in realization of other programme contents of physical education teaching.*

Key words: *influence, testing, motor abilities, younger students*

INTRODUCTION

From the beginning man is in constant competitive relation with all that surrounds him. In constant struggle, the only condition for survival was victory. Competition starts with the birth and it lasts all life long. /1/

A student at all ages is in situation to be, more or less, successful in his surroundings. There is constant need to know, check and measure own power and abilities in everyday and unusual life circumstances. Checking of physical abilities during physical education, represents great motivation and wish to achieve great results in a class or school and to be the best. By prescribed battery of tests evaluation is done at the end of every school year. The results are evaluated on the basis of Criterion for the evaluation of physical development and physical abilities of children and youth aged seven to nineteen (norms). Methodological procedure during testing demands schecking, i.e. performance of motor test individually. /2/

A long lasting work in practice has led to thinking about intriduction of competition conditions during testing. By testing of motor abilities by the use of two different methodological procedures, we will get the model which will enable getting of better indicators of students' abilities.

EXPOSITION
SUBJECT AND GOAL OF THE RESEARCH

Subject of this research is motor abilities, i.e. their manifestation in different conditions of testing (competition with oneself and with a partner as a motivational factor).

The goal is to research the possibility of the existance of differences in manifestation of motor abilities, in conditions of self surpassing and surpassing of a partner (the possible reserves of students' abilities were evaluated produced by competitive factors).

RESARCH METHODOLOGY

Research was realized in primary school " Jovan Jovanovic Zmaj" in Svilajnac, Republic of Serbia, in 2008/2009 school year.

By the choice of motor tests physical ability of students was evaluated with two measures, one of which was done in a "classical way" – test was performed individually, and then the test was done in competitive conditions with the other – in pairs.

30 examinees were included into this research. For the evaluation of motor abilities six standardized movement tasks were applied. They were chosen in the way as to cover all essential physical characteristics of examinees and all larger muscle zones. These are: Tapping of a ball at the wall for the evaluation of skillfullness, bent arm hang for the evaluation of isometric muscle power of upper body part and elbow muscles; long jump from the spot for the evaluation of explosive power of leg muscles; throwing of medicine ball for the evaluation of general strenght; shuttle run 3x10 meters for the evaluation of

general speed ability and a 30 metre running with high start for the evaluation of the running speed. /4/

Multivariant and univariant analysis of variance, decriptive statistics were used in the processing of the data.

RESEARCH RESULTS

On the basis of the results it can be stated that better results are during competitive performance for all six researched variables of motor abilities. The result for tapping the ball at the wall (MODL) is better for 0.77 tappings, 40.82 tenths in bent arm hang (MVIS), 10.83 cm in long jump from the spot (MSDM), 34.84 cm in throwing of a medicine ball weighing two kilograms (MBMD), 3.86 tenths in shuttel run 3x10 meters (M – 3x10 m), and 2.70 tenths in a 30 meter running from the high start (M – 30 m) (Table 1.).

Table 1

Descriptive indicators for examinees – during individual and competitive performance of motor tests

Variable	The way of testing	M	SD	Standard error of arithmetic middle	Min-Max	The difference of arithmetic middles
Tapping of the ball at the wall (MODL)	Individually In Pairs	12.53 13.30	3.58 4.09	.65 .75	5.00 - 19.00 5.00 - 22.00	0.77
Bent arm hang (MVIS)	Individually In Pairs	156.20 197.02	92.58 113.99	16.95 20.81	10.00 - 358.00 34.00 - 430.00	40.82
Long jump from the spot (MSDM)	Individually In Pairs	117.47 128.30	19.61 18.22	3.58 3.33	80.00 - 163.00 100.00 - 155.00	10.83
Throwing of a medicine ball (MBMD)	Individually In Pairs	275.83 310.67	74.89 82.27	13.67 15.02	150.00 - 470.00 150.00 - 540.00	34.84
Shuttle run 3x10 meters (M – 3x10 m)	Individually In Pairs	94.23 90.37	6.03 4.67	1.10 .85	83.00 - 110.00 82.00 - 108.00	3.86
A 30 meter running from the high start (M – 30 m)	Individually In Pairs	65.73 63.03	4.14 3.57	.75 .65	57.00 - 74.00 54.00 - 69.00	2.70

Further analysis is aimed at stating the level of statistical significance between two results measured during individual and competitive performance.

Table 2

Significance of differences of motor abilities of examinees between individual and competitive performance

Analysis	n	F	p
MANOVA	6	1.699	.139

The values of multivariant analysis of variance indicate that there were no statistically significant improvements between the results of students, during individual and competitive perfomance in realtion to six researched motor variables. The level of statistical significance is p=.139 (Table 2.).

Table 3

Significance of differences for examinees between individual and competitive performance in relation to researched variables

ANOVA	F	p
Tapping of a ball at the wall (MODL)	.596	.443
Bent arm hang - (MVIS)	2.333	.132
Long jump from the spot - (MSDM)	4.915	.031
Throwing of a medicine ball - (MBMD)	2.941	.092
Shuttle run 3x10 м - (M – 3x10 m)	7.704	.007
A 30 m running from a high strart- (M – 30 m)	7.334	.009

Statistically significant differences ofr examinees between individual and competitive performance were identified for three variables. For long jump from the spot with the level of statistical significance p=.031, for shuttel run 3x10 meters with the level of p=.007, and for a 30 meter running from the high start with a level of statistical significance p=.009 (Table 3.).

Table 4

Coefficient of discrminativity for examinees in realtion to motor Abilities during individual and competitive perfromance

| Variables	Discriminative coefficient
Shuttle run 3x10 м - (M – 3x10 m)	.035
A 30 meter run from a high start - (M – 30 m)	.024
Tapping of a ball at the wall - (MODL)	.024
Throwing of a medicine ball - (MBMD)	.022
Long jump from the spot - (MSDM)	.001

The largest difference of the results for examinees, between the first and the second performance is in shuttle run 3x10 meters with the discrminitave coefficient .35. The lowest discrminnative coefficient between the two results of examinees is between two performances of long jump from the spot with the dicriminative coefficient .001 (Table 4.).

Table 5

Homogeneity of the examinees during individual and competitive performance in relationn to motor abilities

Sample	m/n	%
Examinees - initially	18/30	60.00
Examinees - finally	21/30	70.00

Homogeneity of the results in the conditions of individual performance is 60%, which indicates that 18 examinees have defined characteristics of their group. In the situation of competitive performance homogeneity of the results is higher and it is 70% and only nine examinees have other characteristics and not the characteristics of their group.

Larger homogeneity of the results during competitive perfromance indicates better accepted competitive relation, which is expressed in this age (Table 5.).
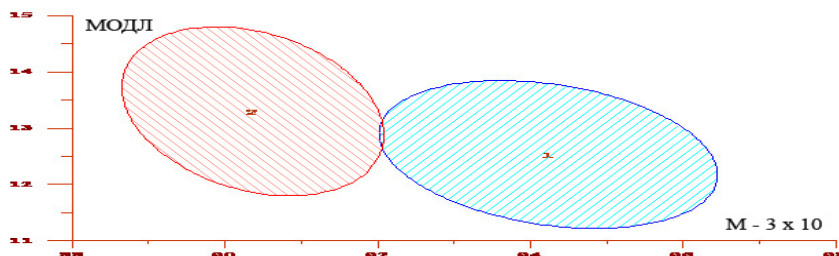
Graph 1. The view of position and characteristics of motor abilities in individual and competitive performnace in relation to two most discriminative variables

Legend: **Examinees I (1); Examinees F (2); Shuttle run 3x10 meters (M -3x10 m); Tapping of a ball at the wall (MODL).**

On Graph 1. it is possible to see interrelated position and characteristics of motor abilities of examinees in individual and competitive performance in relation to two most discrminative variables. The examinees have in final measure in shuttel run 3x10 meters and tapping of a ball at the wall achieved significant results on the basis of which we can state positive effects of competitive factor (Graph 1.).

CONCLUSION

In accepted methodology a student is faced with himself and a tendency of surpassing his abilities (struggle with himself). In a new situation a student is faced with other student who has similar abilities in competitive conditions where he has to surpass his partner.This act of perfrormance of motor test in pair should not be only defined as a victory or as a defeat of one of the perfromers, but also as a mutual help in surpassing of their abilities in a certain moment. /5,6/

Competitive factor with its positive effects did not succeed to provoke statistically significant changes in tapping of a ball at the wall, bent arm hang, and throwing of a medicine ball. Beside insufficient positive influence of competitive factor the significant influence was earlier ignorance of evaluated motor variables. Tapping of a ball at the wall, bent arm hang and throwing of a medicine ball were new events for the students so that during the perfromance of these tests competitive spirit was less expressed. Beside the wish to win, a great attention was paid to correct performance of a motor task, which influence the lack of statistically significant differences between the results.

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The report has been reviewed.