ANNALS OF THE ORADEA UNIVERSITY
Fascicle of Management and Technological Engineering
ISSUE #2, SEPTEMBER 2013, http://www.imtuoradea.ro/auo.fmte/

RESULTS OF MOTOR SKILLS FINAL PRIMARY SCHOOL COMPARED TO THE STANDARDS OF PHYSICAL EDUCATION

Benida PLJAKIĆ[1], Branko KRSMANOVIĆ[2], Ognjen KRSMANOVIĆ[3], Nevena ČEKOVIĆ[4], Tijana ŠĆEPANOVIĆ[2], Enver MEĐEDOVIĆ[1], Ahmet MEĐEDOVIĆ[5], Izet KAHROVIĆ[1]
[1]State The University of Novi Pazar, Serbia
[2]Faculty of Sport and Physical Education, Novi Sad, Serbia
[3]Football club Vojvodina, Serbia
[4]Faculty of Sport and Physical Education, Nis, Serbia:
[5]Medical School, Novi Pazar, Serbia

***Abstract*—** The main aim of the research upon which to base this work relates to the practical application of scientific and educational standards of mandatory education for teaching the subject of physical education. Educational standards are the result of working on the project of the Ministry of Education of the Republic of Serbia. Through this co-operation on a sample of 120 respondents-students who have completed primary education, is seen the quality of motor skills that the curriculum of the Republic of Serbia content that is checked at the beginning and end of the school year. Through methodological work will be displayed: basic parameters of motor skills in patients compared to a group of women, middle, and disperzoni parameters, asymmetry patients, analiya difference between the group of respondents, characteristics of homogeneous group of patients, the distance between the group of patients, group of respondents, graphical displays of the results between groups than those of women. The paper by using tables and charts with modern methods will be the results of research.

***Keywords*—**motor skills, evaluation and achievement, standards of physical education, sport and Technical Education.

I. INTRODUCTION

THE modern way of evaluating student achievement of success in the field of physical education is a legacy of teaching school, which is mastery of specific knowledge, skills and discipline seen as their primary and one task. Since the contents of the form and methods of physical education behind the objective needs of students and society, and both show a lack of interest in this form of education. In this situation, the teacher in order to present in a physical education lesson obeubedi more committed students, using assessment as a means of coercion or reward or punishment, and not as a means to objectively verify achieved.

Monitoring and evaluation of students' progress is carried out continuously throughout the school year. Any assessment (evaluation) of motor skills is taken into account the level of personal motor abilities of every individual, made in the course of the school year, according to their individual abilities. For the assessment of physical growth and motor skills currently applicable test battery of the Institute of Sport. In addition to these tests proposed by the Ministry of Education will begin very soon the application of educational standards at the end of compulsory education for physical education that have arisen as a result of the development of education in Serbia.

II. CASE STUDIES

The subject of research is the study of evaluating student achievement of the final year of primary school in the motor skills to the educational standards for the end of compulsory education for physical education.

III. GOAL AND OBJECTIVES OF RESEARCH

On the basis of the research, the aim of the research is to analyze and determine the real situation in the field of evaluation of achievement and to improve the educational process of students in the final grade of primary school to the physical education curriculum as well as the specifics of this course is to determine the results of motor abilities of the participants.

The task was:

-To display the main parameters of the respondents motor skills - identify the differences between the group of women, - to define the characteristics of each group of subjects, - to determine the homogeneity of the motor skills of each group of subjects, - to determine the contribution of features characteristic of each group.

IV. RESEARCH HYPOTHESIS

Taking into account previous experiences, the issues,

cases and research objectives and methodological approach in this study, can be set up basic hypotheses: Global research hypothesis is:

H0 There is a big difference between the groups among female groups, compared to the tested motor skills.

V. RESEARCH METHODOLOGY

To determine objectively evaluate student achievement toward educational standards in physical education shall effect the measurement of motor skills student. Using the method of theoretical analysis, which corresponds to the research, we found. After completing the measurements to calculate the basic parameters of the area, the difference determined using univariate and multivariate analyzes of covariance. Statistical analysis was performed to estimate the parameters of descriptive statistics for each variable separately.

V.1. The sample

The sample in this study was taken from the population of eighth grade students in elementary schools. The sample included 120 respondents from the eighth grade of 6 schools in Novi Pazar.

VI. ANALYSIS AND INTERPRETATION OF RESULTS

In accordance with pre-determined draft study analyzes the thematic unit motor abilities of women compared to the group of girls-girls. The first section presents the central and dispersion parameters, skewness and kurtosis measures in relation to the monitored parameters. The second part analyzes the differences between the groups girls-girls, in order to evaluate the results and the appropriateness of further consideration, identify trends and methodological priorities for processing. Defined characteristics and homogeneity of each group of girls-girls, determine the distance between them. The analysis was performed on the motor skills and agility in the air, coordination with bat and agility on the ground, 20 m high tackle, deep forward bend on the bench, jump from a place, standing on one leg on a sample of 120 respondents, consisting of 3 experimental sub-groups of girls or girls group 1 (44), group 2 (39), group 3 (37).

The central and dispersion parameters, measures of skewness and kurtosis of the mentioned characteristics motor skills represent groups of girls-girls and routed to the possibility of using parametric procedures.

Table 1: The central and dispersion parameters and measures of skewness and kurtosis motor skills group 1 patients (44)

	sr.vr	std.d	min	maks	k.var	interv.pov.		sk	ku	p
MOKVZ	834.21	108.20	472.0	1038.0	12.97	801.30	867.11	-.70	1.53	.831
MKOPL	433.25	66.51	315.0	588.0	15.35	413.02	453.48	.45	-.47	.405
MOKNT	12.43	2.23	9.6	18.2	17.94	11.76	13.11	1.01	.33	.293
M20VS	4.31	.87	1.8	6.0	20.14	4.05	4.57	-.35	.73	.534
MDPRK	17.66	8.43	9.0	39.0	47.71	15.10	20.22	1.12	.11	.037
MSKOM	1149.09	119.57	900.0	1350.0	10.41	1112.73	1185.45	.06	-.95	.618
MSUKL	6.07	3.85	1.1	16.7	63.46	4.90	7.25	1.05	.23	.088

Table 2: The central and dispersion parameters and measures of skewness and kurtosis motor skills group 2 patients (39)

	sr.vr	std.d	min	maks	k.var	interv.pov.		sk	ku	p
MOKVZ	847.39	115.06	485.0	1124.0	13.58	810.08	884.69	-.25	1.56	.452
MKOPL	424.33	93.60	275.0	678.0	22.06	393.99	454.68	.51	-.11	.872
MOKNT	12.34	2.72	8.2	18.8	22.05	11.46	13.22	.65	-.52	.352
M20VS	4.11	.84	1.8	6.0	20.52	3.84	4.38	-.90	1.28	.348
MDPRK	18.15	8.25	8.0	40.0	45.47	15.48	20.83	1.25	.88	.098
MSKOM	1560.26	150.08	1400.0	2000.0	9.62	1511.60	1608.92	1.12	.78	.105
MSUKL	7.16	4.47	1.9	21.1	62.49	5.71	8.61	1.23	1.40	.534

Table 3: The central and dispersion parameters and measures of skewness and kurtosis motor skills group 3 patients (37)

	sr.vr	std.d	min	maks	k.var	interv.pov.		sk	ku	P
MOKVZ	1023.32	127.19	880.0	1462.0	12.43	980.91	1065.74	1.62	2.68	.042
MKOPL	406.60	84.25	285.0	607.0	20.72	378.50	434.69	.82	-.05	.417
MOKNT	14.19	2.77	9.4	21.5	19.54	13.26	15.11	.43	-.26	.793
M20VS	3.98	.81	1.6	5.2	20.33	3.71	4.25	-1.06	.75	.680
MDPRK	16.19	7.40	6.0	40.0	45.71	13.72	18.66	1.18	1.34	.155
MSKOM	1315.68	83.35	1150.0	1600.0	6.34	1287.88	1343.47	.92	2.10	.116
MSUKL	6.76	3.86	2.3	16.9	57.15	5.47	8.04	.81	-.10	.267

Analysis of the differences were different levels of motor skills girls-girls, multivariate MANOVA descriptive analysis, based on the obtained values, there is a difference and a clearly defined boundary between the groups surveyed.

Table 4: Statistical analysis of the girls-girls women compared to motor skills

analiza	n	F	P
MANOVA	7	21.237	.000
diskriminativna	7	22.590	.000

Table 5: Significance of differences between groups of girls-girls women compared to motor skills

	F	p	k.dsk
MOKVZ	31.662	.000	.000
MKOPL	1.094	.338	.074
MOKNT	6.301	.003	.078
M20VS	1.610	.204	.028
MDPRK	.609	.546	.069
MSKOM	119.441	.000	.000
MSUKL	.759	.470	.027

As p <.1 accept the alternative hypothesis A3, it means that there is a significant difference between some groups of women of the patients: agility in the air (000), quickness on the floor (.003), long jump seats (000) .

Discrimination coefficient indicates that the largest contribution to the discrimination between groups of girls-girls women compared to motor skills, and that is the biggest difference, in: agility on the floor (.078), coordination with the bat (.074), deep forward bend on the bench (. 069), 20 m high start (.028), standing on one leg (.027), long jump seats (000), agility in the air (000).

It should be noted that the latent characteristic, which is the hallmark of the determined difference između group of girls-girls, and discriminant analysis it is incorporated into the structure at which there is a significant difference between groups of women. Latent feature is coordination with the bat (.338), 20-meter high start (.204), deep forward bend on the bench (.546), standing on one leg (.470).

Table 6: Characteristics and homogeneity of the group of girls-girls women compared to motor skills

	grupa 1	grupa 2	grupa 3	dpr %
MOKNT	umerene	manje	veće* [2]	28.261
MKOPL	veće	umerene	manje	26.812
MDPRK	umerene	veće	manje	25.000
M20VS	veće* [1]	umerene	manje	10.145
MSUKL	manje	veće	umerene	9.783
MSKOM	manje	veće* [2]	umerene* [1]	.000
MOKVZ	manje	umerene	veće* [2]	.000
n/m	44/44	37/39	32/37	
%	100.00	94.87	86.49	

Based on the above it can be said that the characteristics of group 1 has 44 of the 44 patients, the homogeneity was 100.0% (greater), 0 means that the respondents have other features rather than the characteristics of their group, and the characteristics of group 2 has 37 of the 39 patients, the homogeneity of the 94.9% (higher) because 2 patients had other features, also features group 3 has 32 of the 37 patients, 86.5% homogeneity (higher) for 5 patients had other features.

This means that patients whose characteristics are similar to that of group 1, and unknown to their affiliation with the group of girls-girls, one can expect with confidence from 100.0% to belong to just one group, that it is possible to forecast with a certain confidence.

Table 7: Distance (Mahalanobis) between a group of girls-girls women compared to motor skills

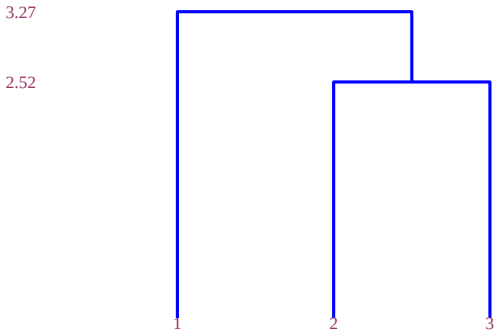
	grupa 1	grupa 2	grupa 3
grupa 1	.00	3.51	2.53
grupa 2	3.51	.00	2.52
grupa 3	2.53	2.52	.00

By calculating the Mahalanobis distance between groups of girls-girls respondent obtained another indication of similarity or difference. Distance of different areas can be compared. Distance in the table indicate that at least the distance between the female groups-girls: Group 3 and Group 2 (2.52) (higher) and the most distant group of respondents girls-girls: Group 2 and Group 1 (3.51) (higher).

Table 8: Grouping girls-girls group of respondents in relation to motor skills

nivo	Bliskost
grupa 2,grupa 3	2.52
grupa 1,grupa 2	3.27

Based on the displayed dendrogram reveals that the nearest group 2 and group 3 with distance 2:52, and the biggest difference between group 1 and group 2, the distance of 3.27.



Legend: group 1 (1) Group 2 (2) Group 3 (3)

Based on the graphic display ellipses (confidence interval) may be possible to observe the relative positions and characteristics of each of the 3 groups of girls-girls patients (group 1 (1) Group 2 (2) Group 3 (3)), in relation to the three most discriminating (features) motor skills such as: agility on the ground (OKNT), coordination with bat (KOPL), a deep forward bend on the bench (DPRK).

The graph x-axis (horizontal axis) is the quickness on the floor (OKNT), and the ordinate (vertical axis) is the coordination of the bat (KOPL).

It is noteworthy that in comparison to agility on the ground, group 2 (2) has the lowest value motor skills, and the highest value group 3 (3). With regard to coordination with the club, group 3 (3) has the lowest value of motor skills, and the highest value of group 1 (1).

The graph x-axis (horizontal axis) is the quickness on the floor (OKNT), and the ordinate (vertical axis) is a deep forward bend on the bench (DPRK).

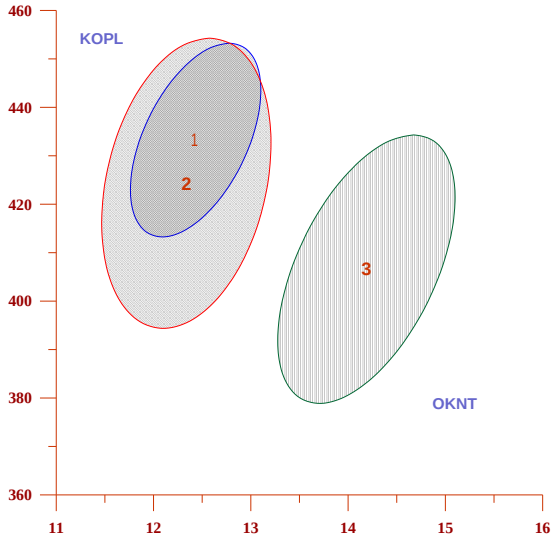


Figure 1: Ellipses (confidence interval), a group of girls-girls of the patients agility and coordination on the ground with a bat

Legend: group 1 (1), group 2 (2), group 3 (3); agility on the ground (OKNT), coordination with bat (KOPL)

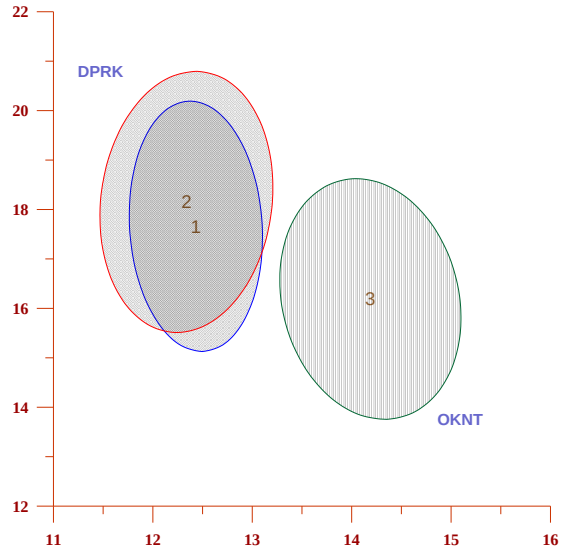


Figure 2: Ellipses (confidence interval), a group of girls-girls of the patients agility on the ground and a deep forward bend on the bench

Legend: group 1 (1), group 2 (2), group 3 (3); agility on the ground (OKNT) deep forward bend on the bench (DPRK)

It is noteworthy that in comparison to agility on the ground, group 2 (2) has the lowest value motor skills, and the highest value group 3 (3). Compared to a deep forward bend on the bench, group 3 (3) has the lowest value of motor skills, and the highest value of group 2 (2).

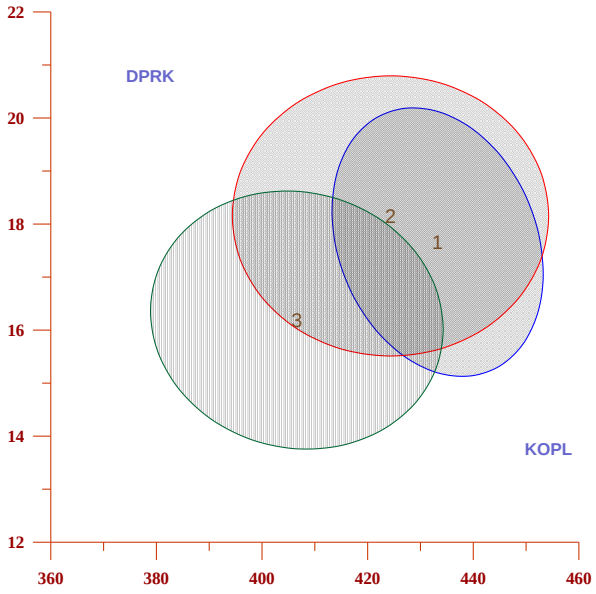


Figure 3: Ellipses (confidence interval), a group of girls-girls women in coordination with a bat and a deep forward bend on the bench

Legend: group 1 (1), group 2 (2), group 3 (3); coordination with the bat (KOPL) deep forward bend on the bench (DPRK)

The graph x-axis (horizontal axis) is the coordination of the bat (KOPL), and the ordinate (vertical axis) is a deep forward bend on the bench (DPRK).It is noted that in relation to co-ordination with the club, group 3 (3) has the lowest value of motor skills, and the highest value of group 1 (1). Compared to a deep forward bend on the bench, group 3 (3) has the lowest value of motor skills, and the highest value of group 2 (2).

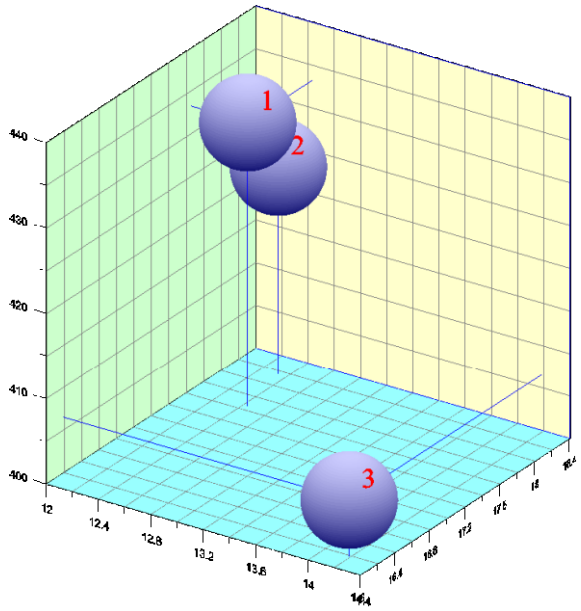


Figure 3:

In this part of the study will be analyzed anthropometric characteristics of the subjects by group girls-girls.

VII. Conclusion

There was a difference between a group of girls-girls (.000) compared to patients motor skills of agility in the air (.000) with quickness on the floor (.003), with the long jump seats (000). There was no difference coordination with the bat (.338). 20 m high start (.204). deep forward bend on the bench (.546). standing on one leg (.470). The existence of the limit (000) has been confirmed for agility on the ground coordination with the bat on the bench depth reach 20 m high start standing on one leg, jump out of agility in the air. There is a latent differences in: coordination with the bat (.338). 20 m high start (.204). deep forward bend on the bench (.546). standing on one leg (.470).

Based on respondents motor skills can be said that:

- Group 1 has the following properties for agility on

the ground values are moderate in coordination with the club values are higher for the deep forward bend on the bench for moderate values are 20 m high start values are higher * 1 for standing on one leg values are smaller for the long jump the values of the lower and homogeneity is 100.00% (44/44).

- Group 2 has the following properties for agility on the ground values are less coordination with bat values are moderate to deep forward bend on the bench values are higher for the 20-meter high start values are moderate to stand on one leg, the values are higher for the standing long jump of values are higher * 2 and homogeneity is 94.87% (37/39).

- Group 3 has the following properties for agility on the ground values are higher * 2 for coordination with bat values are less deep forward bend on the bench values are lower by 20 m high start values are lower for standing on one leg for moderate values of the long jump from the moderate values of * 1 and homogeneity is 86.49% (32/37).

ZC13 the patients motor skills (MANOVA and discriminant .000 .000) indicate that there is a significant difference between the 3 groups of girls-girls, agility in the air (000), quickness on the floor (.003), long jump seats (.000), no difference was found in, coordination with the bat (.338), 20-meter high start (.204), deep forward bend on the bench (.546), standing on one leg (.470), with discrimination, agility on the ground (. 078), coordination with the bat (.074), deep forward bend on the bench (.069), 20-meter high start (.028), standing on one leg (.027), long jump seats (000), turn-in air (000).

REFERENCES

[1] Ancukić, K. (1994). Improvement of physical education in the modern organization of the educational - educational work in schools, Belgrade
[2] Visnjic, D. & Martinovic, D. (2005). Methods of physical education. Belgrade: BIGZ.
[3] Koturović, Lj., Jeričević D. (1994). Role of Physical Education in the prevention of deformation of schoolchildren, Belgrade
[4] Krsmanović B, Berkovic, L. (1995). Theory and methods of physical education, University of Novi Sad, Faculty of Physical Education
[5] Leskošek, J. (1980). Theory of Physical Education. Belgrade: Yugoslav union organization of physical education.
[6] Međedović, E. (2004). Contributes to physical education. Novi Pazar: DUN.
[7] Međedović, E. (2010). Methods of physical education. Novi Pazar: DUNP.
[8] Pljakić, B. (2011). Attitudes of fourth grade students and their parents toward physical education. Master thesis. Vranje Teachers College.