

## THE EXAMINATION OF THE EFFECTS OF BASKETBALL TRAINING PROCESS ON COORDINATION DEVELOPING ON 9-10 YEARS OLD BOYS

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(Preliminary communication)

**Dragana Aleksić<sup>1</sup>, Jadranka Kocić<sup>1</sup>, Sladjana Tošč<sup>2</sup>, Branimir Mekić<sup>1</sup> and  
Vesko Milenković<sup>1</sup>**

<sup>1</sup>*University of Pristina, Faculty of Sport and Physical Education,  
Leposavić, Kosovo & Metohia, Serbia*

<sup>2</sup>*University of Kragujevac, Faculty of Pedagogy in Jagodina, Serbia*

### Abstract

*The research involved a total sample of 102 man pupils from 3<sup>rd</sup> and 4<sup>th</sup> grade of elementary school. The subjects were classified in an experimental and a control group. The battery for the evaluation of coordination consists of the following tests: MPON, MSL3, MONT. The experimental group was made of 54 man pupils and they were exercising according to the planned instructions where the basketball training process played the primary role. The control group of 48 man pupils was practicing according to official instructional plan and program for PE of the Republic of Serbia. Research data was processed using MANOVA. Considering the difference of the influence of the treatment, it can be pointed out that the experimental program, with all its characteristics, widely contributed to all its segments to the improvement of coordination in whole, while the treatment of the control group which represented the official actual program for PE for younger man pupils did not give better results in any of the segments of motoric ability of coordination of the examined man pupils.*

**Keywords:** *physical education, motor abilities, tests, experimental group, control group, MANCOVA*

### INTRODUCTION

In all the sciences, whose goal is the study of man, there is the tendency, not only to notice his characteristics and abilities, but also to define and connect them into some bigger wholes. In order to get the system, which is defined by certain dimensions, it is necessary to make the appropriate classification first. By using this classification, we can get the approximate image of the anthropological status of an individual. The influence of certain body activities depends on complexity degree of their structural elements, mutual correlation of these elements, as well as on the degree of involvement of certain systems and subsystems of an organism during these activities. Body activities, which are at the higher level of hierarchy, will not be always and adequately valued, according to its influence, when the behavioral-educational practice is concerned. In order to deal

with the status of motor abilities as with the primary thing, the valorization of evaluation of motor abilities, during the classes, is necessary. The main reason for it is that the estimation of motor abilities does not make sense unless the results of motor tests are estimated and graded. Three aspects are estimated, when every individual student is concerned, according to the concept of evaluation. These aspects are: motor abilities, motor and theoretical knowledge.

By different moving activities, learning about their body and its motoric, a child develops its motoric, acquires different motoric skills and habits and develops motoric activities. In this work, the subject of the research is just one segment of the anthropological area which refers to the appearance of appropriate motor abilities-coordination. The appropriate level of coordination is necessary during each motor activity. Size and character of

*Table 1. The central and dispersive parameters of mothoric abilities of experimental group/ initial N=54*

Variables	$\bar{X}$	SD	MIN	MAX	KV %	SKEW	KURT	p
MPON	20.15	5.16	11.43	32.45	25.62	.77	.32	.549
MSL3	52.30	12.45	39.17	92.24	23.80	1.64	2.80	.236
MONT	26.00	5.41	16.84	35.64	20.82	.13	-1.17	.685
MDPK	40.48	6.69	23.00	56.00	16.53	-.03	-.02	1.000
MISK	66.04	10.96	53.00	85.00	16.59	.37	-1.40	<b>.030</b>
MBSP	19.22	8.08	3.00	36.00	42.02	-.02	-.43	.980
MSDM	116.57	21.93	65.00	170.00	18.81	-.32	-.22	.999
M20M	4.85	.43	4.12	5.72	8.87	.34	-.68	.962
MSRG	20.17	4.31	12.00	30.00	21.36	.52	.24	.999
MDTK	8.07	6.67	1.00	28.00	82.61	1.41	1.73	.859
MSKL	7.02	3.69	1.00	15.00	52.55	.36	-.69	.932
MDTL	3.63	1.29	2.00	7.00	35.62	.29	-.69	.415
MVIS	3.58	3.57	.00	17.70	99.62	1.28	2.60	.913
MIPR	.82	1.32	.00	6.02	160.18	1.61	2.64	<b>.001</b>
MINS	12.69	9.83	1.99	47.87	77.46	1.14	1.51	.453
MTAR	19.31	3.04	14.00	26.00	15.74	.27	-.73	.285
MTAN	25.59	2.97	20.00	31.00	11.62	-.21	-.92	1.000
MPZD	12.80	2.27	10.00	18.00	17.73	.90	-.38	<b>.002</b>
MPSG	11.59	11.39	2.45	48.75	98.26	2.27	4.46	.148
MHNG	17.69	5.16	10.09	29.02	29.16	.74	-.21	.637
MSJN	14.43	15.70	2.23	66.89	108.77	2.01	3.25	<b>.014</b>

*Table 2. The central and dispersive parameters of mothoric abilities of control group/ initial N=4*

Variables	$\bar{X}$	SD	MIN	MAX	KV %	SKEW	KURT	p
MPON	23.10	8.32	11.43	55.01	36.03	1.65	3.23	.723
MSL3	56.41	14.09	39.17	98.02	24.97	1.28	1.43	.570
MONT	28.71	9.30	16.84	63.65	32.40	1.56	2.86	.824
MDPK	40.75	7.26	23.00	56.00	17.82	-.31	-.31	1.000
MISK	69.85	11.08	53.00	89.00	15.86	-.19	-1.41	.426
MBSP	24.25	14.37	3.00	100.00	59.27	3.00	14.18	.894
MSDM	108.96	23.45	65.00	170.00	21.52	.12	-.46	1.000
M20M	4.83	.51	4.05	6.18	10.64	.50	-.09	1.000
MSRG	19.58	4.03	10.00	30.00	20.58	.41	.82	1.000
MDTK	6.21	5.95	.00	28.00	95.78	1.77	3.33	.355
MSKL	6.96	6.10	.00	31.00	87.69	2.00	5.15	.929
MDTL	4.10	1.79	2.00	12.00	43.60	1.78	6.04	.996
MVIS	2.70	3.51	.00	17.70	130.01	1.96	5.12	.527
MIPR	.56	1.24	.00	6.02	222.43	2.49	6.59	<b>.000</b>
MINS	16.53	14.65	1.99	59.99	88.62	1.30	1.08	.635
MTAR	20.21	3.38	14.00	28.00	16.74	.19	-.84	.993
MTAN	26.17	3.60	19.00	35.00	13.78	.18	-.23	.891
MPZD	13.21	2.30	10.00	18.00	17.39	.66	-.62	<b>.084</b>
MPSG	8.52	9.42	.00	48.75	110.55	3.02	9.57	.173
MHNG	18.76	6.60	10.09	44.12	35.19	1.56	3.05	.693
MSJN	10.37	12.85	.87	66.89	123.91	2.83	8.09	<b>.071</b>

*Table 3. The central and dispersive parameters of mothoric abilities of experimental group/ final N=54*

Variables	$\bar{X}$	SD	MIN	MAX	KV %	SKEW	KURT	p
MPON	17.26	4.14	10.25	28.99	24.01	.84	.68	.777
MSL3	47.26	10.59	23.51	73.17	22.41	.25	.10	1.000
MONT	23.24	4.68	15.76	32.73	20.14	.38	-.68	.990
MDPK	43.57	6.88	25.00	60.00	15.78	-.14	.86	.466
MISK	56.43	8.25	40.00	75.00	14.63	.33	-.53	.654
MBSP	12.87	10.25	.00	33.00	79.67	.15	-1.02	.265
MSDM	120.69	22.16	73.00	180.00	18.36	.13	-.26	.702
M20M	4.44	.55	3.46	5.48	12.44	.26	-.86	.999
MSRG	21.70	4.39	15.00	32.00	20.21	.53	-.25	.236
MDTK	12.76	7.17	2.00	30.00	56.17	.63	-.02	.813
MSKL	12.13	6.21	2.00	25.00	51.22	.41	-.51	.926
MDTL	13.85	5.53	5.00	30.00	39.92	.91	.62	.109
MVIS	5.24	4.42	.00	27.01	84.24	2.25	8.96	.999
MIPR	3.85	3.39	.00	17.70	88.13	1.37	3.27	.674
MINS	33.97	20.00	11.88	91.88	58.88	.74	-.18	.472
MTAR	21.83	4.11	16.00	31.00	18.83	.50	-.76	.973
MTAN	28.06	3.95	21.00	35.00	14.08	.01	-.91	.999
MPZD	13.61	2.48	10.00	19.00	18.19	.63	-.54	.791
MPSG	23.32	26.39	4.12	120.67	113.20	2.40	5.41	.023
MHNG	15.82	4.16	9.62	24.97	26.28	.60	-.41	.960
MSJN	19.85	23.35	2.23	109.24	117.59	2.53	6.26	.028

*Table 4. The central and dispersive parameters of mothoric abilities of control group/ final N=48*

Variables	$\bar{X}$	SD	MIN	MAX	KV %	SKEW	KURT	p
MPON	20.60	6.85	11.25	46.22	33.28	1.65	3.01	.619
MSL3	51.03	11.02	23.51	85.87	21.60	.44	1.07	.953
MONT	25.83	8.15	15.99	59.18	31.55	1.65	4.13	.739
MDPK	42.40	7.41	23.00	55.00	17.47	-.74	.32	.875
MISK	60.25	10.52	40.00	80.00	17.45	.30	-.84	.398
MBSP	20.63	13.73	3.00	82.00	66.55	2.02	6.38	.890
MSDM	113.88	22.22	73.00	170.00	19.51	.31	-.36	.997
M20M	4.63	.58	3.46	6.01	12.48	.34	-.41	1.000
MSRG	21.48	4.23	15.00	32.00	19.71	.58	-.02	.386
MDTK	11.85	6.94	2.00	31.00	58.52	.82	.30	.876
MSKL	14.29	10.26	1.00	55.00	71.82	1.77	4.14	.768
MDTL	14.42	7.14	5.00	33.00	49.54	.93	.04	.049
MVIS	4.52	3.25	.00	15.24	71.77	.95	.94	.983
MIPR	3.21	3.27	.00	17.70	101.71	2.08	6.26	.447
MINS	40.19	28.38	9.89	124.47	70.62	1.22	1.18	.717
MTAR	21.54	3.38	16.00	29.00	15.68	.15	-1.00	.861
MTAN	27.54	3.78	21.00	35.00	13.71	.26	-.67	.994
MPZD	14.02	2.39	10.00	19.00	17.06	.38	-.63	.888
MPSG	15.31	19.91	.91	120.67	130.09	3.66	15.23	.025
MHNG	17.10	5.82	9.62	38.59	34.04	1.53	2.82	.925
MSJN	14.80	18.72	2.13	109.24	126.52	3.46	13.11	.154

Table 5. Multivariate analysis of covariance (MANCOVA) and variance (ANCOVA)

	n	F	p
MANCOVA	3	4.082	.000

ANCOVA	F	p	Coefficient discrimination
MPON	5.798	.001	.108
MSL3	3.123	.027	.075
MONT	6.999	.000	.009

Groups		Variables	Corrected mean		Interval of entrust	
Eksper.	Kontrol.	MPON	18.97	20.13	-1.98	-.35
Eksper.	Kontrol.	MSL3	46.25	49.64	-5.72	-1.07
Eksper.	Kontrol.	MONT	22.68	24.69	-2.98	-1.04

coordination depends mostly on a kind of activity and on forms of the specific ability demonstration, when specific branch or discipline is concerned.

## METHODS

The battery for the evaluation of coordination consists of the following tests: MPON, MSL3, MONT. During the 2005/06 academic year, a research was conducted so as to determine the effects of current program of physical education teaching on motor abilities coordination of man pu-pils. The research involved a total sample of 102 man pupils from 3<sup>rd</sup> and 4<sup>th</sup> grade of elementary school. The subjects were classified in an experimental and a control group. The experimental group was made of 54 man pupils and they were exercising according to the planned instructions where the basketball training process played the primary role. The control group of 48 man pupils was practicing according to official instructional plan and program for PE of the Republic of Serbia. At the beginning of the academic year, initial (first) measurement was performed, followed by experimental final (second) measurement at the end of experiment. Research data was processed using SPSS standard statistics procedure. The multi-variant procedures were used MANCOVA.

## RESULTS AND CONCLUSION

According to the fact that  $p=.000$  of the MANCOVA analysis, it is obvious that there is the significant difference between the two groups of the examinees, concerning the three traits of coordination movements.

After the experimental treatment, i.e. at the final testing (table 5), significant differences were found with man pupils in experimental and control groups concerning the all tests for the evaluation of coordination. The basic conclusion is that the man pupils of experimental group achieved significantly higher teaching effects than the control group, in view of partly increased motor abilities, being the result of the effects of the experimental treatment, as well as other external and internal factors.

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Correspondence:  
 Dragana Aleksiæ  
 University of Pristine  
 Faculty of Sport and Physical Education,  
 Dositej Obradoviæbb, 38218 Leposaviæ  
 Kosovo i Metohija, Serbia  
 E – mail: aleksic\_dragana@yahoo.com

## ПРОЦЕНУВАЊЕ НА ЕФЕКТИТЕ НА КОШАРКАРСКИОТ ТРЕНИНГ ВРЗ РАЗВОЈОТ НА ПРОЦЕСОТ НА КООРДИНАЦИЈАТА КАЈ ДЕЦАТА ОД 9-10 ГОДИНИ

УДК: 796.323.2.015-057.874  
 (Прейходно соопштение)

**Драгана Алексиќ<sup>1</sup>, Јадранка Коциќ<sup>1</sup>, Слаѓана Тошиќ<sup>2</sup>,  
 Бранимир Мекиќ<sup>1</sup> и Веско Миленковиќ<sup>1</sup>**

<sup>1</sup>Универзитет во Приштина, Факултет за спорти и физичко воспитување,  
 Лејосавиќ, Косово и Метохија, Србија

<sup>2</sup>Универзитет во Краљујева, Педагошки факултет во Јагодина, Србија

### Апстракт

Испитувањето е спроведено на примерок од 102 ученици од петто и четврто отделение на основните училишта. Примерокот е поделен на експериментална и контролна група. За проценка на процесот на координацијата во ова испитување е применета следната батерија на тестови: MPON, MSL3 и MONT. Експерименталната група беше сочинета од 54 ученици кои беа тренирани со планирани инструкции, при што кошаркарската игра беше примарна, така што училишниот час наликуваше на тренинг. Контролната група беше сочинета од 48 ученици кои беа одфайвени со официјалниот План и Програмата на наставаа во физичко воспитување на соодветното Министерсво на Република Србија. Резултатите од испитувањето се обработени со методата MANKOVA. Со оглед на разликите при влијанието на експерименталниот тренинг, заклучено е дека експерименталната група во однос на контролната група, постигнала значајно подобри резултати во сите сегменти на координацијата.

**Клучни зборови:** физичко воспитување, моторни способности, тестови, експериментална група, контролна група, MANKOVA