EFFECTS OF SPORT TEACHING ON TRANSFORMATION OF MOTORIC ABILITIES OF STUDENTS OF FACULTY OF EDUCATION IN MOSTAR

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Abstract
The main goal of the research was to define statistically relevant differences of arithmetic means of motoric abilities at examinees in two time periods. Sample of examinees was constituted of 35 students from Department of Sport and Health at Faculty of education at University „Džemal Bijedić“ of Mostar. Kinesiological operator in this research is represented by quarterly program of teaching Sport performed in accordance to plan and program of Faculty of education, Department for Sport and Health. In the sample mentioned above 12 tests were applied for evaluation of: balance, coordination, speed, flexibility, explosive strength, static strength and repetitive strength. Analysis of differences of arithmetic means was done by T-test of small dependable samples. Results have shown that quarterly program of teaching Sport and health has produced positive transformations of basic-morotic abilities of students at most of the variables.

Keywords: sport and health, football, basketball, athletics, volleyball, anthropomotorics.

INTRODUCTION

Motoric abilities define potential of a human in performance of motoric manifestations, simple or complex movement (Sekulić and Metikoš, 2007). They are defined as a complex of individual physical and psychological characteristics which are possible to develop with a limiting factor of biological predisposition (Dautbašić i Bradić, 2005). For healthy grow and development of children it is especially important timely and optimal level of development of motoric abilities (Findak, 2001). For their development, continuous and systematic body workout is needed which the young cannot fulfil with two hours of Sport in school. In the research the main assumption was that the regular class of Sport and Health, defined by 14 teaching classes (7 subjects x 2 teaching classes) in a week, will induce statistically significant changes in the area of motoric abilities of students of Department of Sport and Health.

Regular classes of Sport at the Faculty of education are conducted as obligatory for all students of the Department of Sport and Health. Many researches have shown that student population spends its free time in percentage of only 20% in certain activities. Slater, M. (2005), in his research, has concluded that it is necessary to pay more attention to theoretical lectures from the area of sport than it is usual and in accordance to that enhance opinion about physical activity. Balboa, J. M, Barret, K., Solomon, M., Silverman, S. (1996) under the content of physical education (sport or physical culture) imply teaching about movement in three different ways: teaching in movement, teaching about movement and teaching through movement. Learning with understanding, implementation of knowledge, recognising changes and constant evaluation and familiarising with new information are, according to the opinion of these authors, key factors which benefit to development of cognitive processes. Students are the last population that can be influenced according to plan and systematically when it comes to education about sport, and all that with a purpose of indicating to lawfulness, principals of exercising and developing a habit of regular physical activity as well as its benefits on young people. Next to realization of programs in regular class, a great deal of attention is dedicated to informing students of specificities of anthropological status of people of their age.

METHOD OF WORK

Sample of examinees is made of 35 students of male gender, aged between 19 and 22 years, studying Sport and Health at the Faculty of education at University „Džemal Bijedić” of Mostar. Middle age value is 20.1., while the average aberration of all results from the arithmetic mean is 1.19.

Sample of variables

During process of test selection, the accent was on metric characteristics. Measuring instruments for this research encompassed the area of basic-motoric abilities, 12 tests. All tests have been taken from the book *Testing and measuring in sport* (Mikić, 1999) and *Methodology of scientific-research work in kinesiology* (Čolakhodžić and Rađo, 2011).

Tests for balance assessment

1. Standing with two legs longitudinally on a bench with closed eyes (MBAU2Z)
2. Standing with two legs longitudinally on a bench with opened eyes (MBAU2O)

Tests for assessment of frequency of movement (segmentary speed)

3. Taping with hand (MFTAP)
4. Taping with leg (MBFTAN)

Tests for assessment of flexibility

5. Flexibility with bat (MFLISK)
6. Touch-toe with legs in a gap (MFLPRR)

Tests for assessment of explosive strength

7. Long jump from a place (MFESDM)

8. Pole vault from a place (MFESVM)

Tests for assessment of repetative strength
9. Pull ups on a horizonatl bar with a grip (MRAZGN)
10. Squat with weight (MRLPCT)

Tests for assessment of isometric (static) strength
11. Endurance in a pull up (MSAVIS)
12. Enduarnce of weight in a squat (MSLIZP)

Plan and program of work

Classes of the Department for Sport and Health were held in summer semester. A group of 35 students were included in the program. According to plan and program of the summer semester, classes were organized from subjects: Volleyball, Athletics, Anthropomotorics, Football, Water sports, Acrobatics and Gymnastics. Classes from the mentioned subjects were held twice a week in duration of one school class. Hence, the program lasted three months.

Methods of data analysis

Analysis of data was performed in program package SPSS 19. Primarily, analyses of central, dispersional parameters were made and normality of result distribution was tested. For analysis of differences of arithmetic means of motoric abilities of students between two time periods, after implemented kinesiological operators, T-test of small dependable samples was used.

RESULTS AND DISCUSSION

By analysis of differences of arithmetic means (table 1) of the variables for assessment of motoric abilities of the observed group, according to the value of standard error of arithmetic means and T-test, it can be seen that in 7 out of 10 variables there is a statistically significant difference, except in variables for assessment of movement frequency speed (MBFTAR, MBFTAN), flexibility (MFLISK, MFLPRR), explosive strength (MSAVIS and MSLIZP). Variables in which statistically relevant effect of conducted plan and program was gained are variables for assessment of explosive strength (MFESVM), for assessment of repetitive strength (MRLPCT and MRAZGN), for assessment of static strength (MSAVIS and MSLIZP) as well as variables for assessment of body balance (MBAU2Z and MBAU2O). Having an insight into the colon which describes differences of arithmetic means between two measured time periods, we can conclude that significance of all variables is in benefit of the final measurement. As a subsystem of the entire structure of anthropological status of a human, motoric abilities are expressed to the utmost if followed with an adequate level of motoric knowledge and vice versa. With activity of dosed treatment both systems can be developed simultaneously. It can be also assumed that one of the factors playing significant role in performance of motoric abilities is factor of motoric characteristics whose influence on motoric performance would be desirable to test together with this space. Breslauer, N., Marković, K. (2011) have similar results in their research which had a goal to examine the influence of one year program of teaching athletics on the area of motoric abilities. They have concluded that the teaching of athletics has positively affected all motoric abilities which were taken in consideration. Contrary to those facts, Svilar, L., Dadić, M. (2011) in their research, which had a goal to examine correlation of content of subcutaneous fatty tissue with tests used for evaluation of agility, come to a conclusion that content of subcutaneous fatty tissue doesn't necessarily have to be a factor which determines success in tests of agility of more complex structures of movement. Coordination skills (coordination of arms, legs and body, speed of learning new motoric tasks, factor of reorganization of the stereotype of movement, speed coordination, coordination in a rhythm, agility) are highly genetical (80%) and can be changed in a small measure through different operators and content, mostly in the period of childhood, that is, they can be developed more weakly then other motoric abilities.

In this research conducted in 2006. Ohnjec, K., Vuleta, D. and Gruić, I. had a goal to test influence of specially programmed six months training process on changes in some indicators of basic and specific motoric abilities of handball players, young cadets, of RK „Sloga" Sveta Nedjelja. Above mentioned authors concluded that implemented teaching training program causes similar effects as in our research. Furthermore, in research conducted by Torlaković, A., Rađo, I., Dautbašić, S. and Gec, M. (2010) the goal was to research existence and size of effects of practising different activities (swimming, aerobics and aqua aerobics) on motoric abilities, morphological characteristics and frequency of breathing and blood pressure. In the research of mentioned authors similar results were acquired. In fact, in most of the tested variables in a short period of time positive effects were acquired.

When we analyse results of the observed group and compare them to results of a paper done a long ago, with similar goal of research, we can conclude that Arunović (1978) came to similar results on a similar sample. He determined that program of Sport and Health education positively influences on changes of explosive strength and sprinter speed.

Table 1. Testing of the differences of arithemtic means of variables for assessment of motoric abilities

Variables		A. S.	S. D.	t	df	Sig.
Pair 1	MBFTAP	.62	7.882	.472	34	.640
Pair 2	MBFTAN	.74	3.567	1.232	34	.226
Pair 3	MFLISK	3.40	15.65473	1.285	34	.208
Pair 4	MFLPRR	1.94	12.32869	.932	34	.358
Pair 5	MFESDM	1.85	14.68321	.748	34	.459
Pair 6	MFESVM	-2.37	5.73475	-2.446	34	**.020**
Pair 7	MRAZGN	-1.37	2.647	-3.066	34	**.004**
Pair 8	MRLPCT	-4.40	6.255	-4.161	34	**.000**
Pair 9	MSAVIS	-4.47	12.24206	-2.164	34	**.038**
Pair 10	MSLIZP	-8.32	14.20368	-3.469	34	**.001**
Pair 11	MBAU2Z	-1.73	1.84259	-5.578	34	**.000**
Pair 12	MBAU20	-1.78	3.85559	-2.736	34	**.010**

CONCLUSION

Results obtained by appliance of T-test point out that Sport and Health education caused statistically relevant changes of basic-motoric abilities. Regular Sport and health education produced a positive effect in 60% of the variables. Classes of Sport were based on content from these subjects: Volleyball, Athletics, Anthropomotorics, Football, Sports on water, Acrobatics and Gymnastics. Paper gives an insight into effects caused by sports teaching and in such a manner that content of class can be further shaped to give wanted effects. As a concluding thought of this paper we are mentioning research by Bycur, D. et al. which had a goal to examine participation of youth in physical activities. They came to a conclusion that more physical activities need to be implemented at this age, because this is the age which is „critical“ when physical activity comes to mind and this is the age which prefers sedentary way of life.

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