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CANONIC RELATIONS OF ANTHROPOMETRIC AND MOTOR SPACE BETWEEN STUDENTS AS FOOTBALL PLAYERS AND NON FOOTBALL PLAYERS

Introduction

The game of football is one of the most popular sport on earth, including our country. Contemporary football possesses complex movements as in technical-tactical aspect, as well as in a high physical preparation, with eloquent and fast actions, then with effective and perfect kick. At certain situational moments these are giving to the game of football a dynamics and glow that awakens the curiosity of athletes and great interest among younger groups.

Even scientific researchers are loking for means and more professional methods and optimal consignments so that children from a young age to give accurate kinesiological information, that in sport, respectively in Kosovo football are scarce, and to them should be given special treatment and to work with young age groups in a professional way.

Considering the importance of anthropometric and motor parameters, then should be selected adequate operators in order to transform and do right orientation of achieving more qualitative results in football, respectively in sport in general.

Creativity and professional-scientific ability are the guidelines for the implementation and evaluation of the achieved results in sport. Based on this, the aim of this paper is supported on strengthening and in verification of scientific legalities in the achievements of qualitative results in football, as well as in changes in anthropometric and motor dimensions and situational movements. Also it will be reflected creativity and the work of physical education teachers in elementary school.With other words, I think that will be reflected statistical valid differences between students who attended football school with those that have not attended this school, but have attended physical education class during teaching process.

Methods

The sample of the tested students in this research was chosen as a population of males, 13 – years old, ± six months. The total number of the tested students is 142 entities, 71- are students from 13 - years ± 6 months, of the elementary school „Vëllëzerit Frashëri „ from Lypjan, that attended only regular hours of physical education at the school, whereas other group of the tested students 71- are regular students of the

football school at the football club „ULPIANA“ from Lypjan. But the majority of students gravitate from villages of the Lypjan Municipality, that besides the hours of physical education have attended 3-4 trainings during the week and one full year have attended football school.

In this research were applied 10- anthropometric variables which are considered to cover enough space for this research work, this method have used in their work (Hasangjekaj, B. & Kikaj Xh. 1999).: evaluation dimension of volume and body mass, definition of longitudinal dimension of skeleton and definition of transversal dimension of skeleton: APESHA–Body weight, ALARTE–Body height, AGJAKË-Length of the leg, AGJASHP-Length of the foot, APEGJO-Chest perimeter, APEBEL-Waist perimeter, APEKOF-Thigh perimeter, APEKËR-Shinbone perimeter, ADIGJU-Knee diameter, ADIZOG-Ankle diameter. BASIC MOVEMENT TESTS: MVR-Running on 20m, high start. MKGJV-Long jump from the place. MTAPKE-Taping legs.

SITUATIONAL MOVEMENT TESTS: MPUTOP-Work with the ball, MUSLLA-Ball leading in slalom 10m, MUGJRR-Ball leading in half a circle, MUTK 20m-Ball leading in the hall 20m.

Results and discussion

For common explanationof both spaces, anthropometric and motor, must be used canonical analysis which is presented in tables 1,2,3,4,5,6.

In table 1, is presented matrix of canonical correlations of motor space by the right side (right set). Based on the values presented in correlation matrix in motor space is shown to have had connectivity in most of the tests, except test MUGJRR, which showed a weaker connectivity.Whereas in Table 2, was given matrix of canonical correlation in anthropometric space by the left side (left set). Based on the data in the table is shown that all variables indicated high correlative connectivity except variable ADIGJU. In Table 3, are given crosscorrelation values or interconnection between anthropometric and motor space for two groups (students as football players non football players). Based on the values shown on the table, it is seen not so stressed intercorrelation between the two spaces, only variables of circular dimension ADIGJU and ADIZOG which have connectivity with all motor tests except tests MTAPKË and MPUTOP.

Table 1. *Canonical motor correlations*

	Mkgjv	Mtapkë	Mvr 20m	Mputop	Muslla	Mugjrr	Mutk 20m
Mkgjv	1.000						
Mtapkë	.252	1.000					
Mvr 20m	-.575	-.294	1, 000				
Mputop	.057	.447	-,070	1,000			
Muslla	-.336	-.308	,312	-,247	1,000		
Mugjrr	-.118	-,119	,174	-,105	,247	1,000	
Mutk 20m	-.521	-,252	,591	-,030	,493	,161	1,000

Table 2. *Canonical anthropometric correlations*

	Apesha	Alarte	Agjake	Agjash	Apegjo	Apebel	Apekof	Apeker	Adigju	Adizog
Apesha	1,0000									
Alarte	,789	1,0000								
Agjake	,709	,854	1,0000							
Agjash	,711	,756	,721	1,0000						
Apegjo	,824	,713	,612	,664	1,0000					
Apebel	,776	,561	,556	,571	,781	1,0000				
Apekof	,818	,574	,568	,585	,743	,797	1,0000			
Apeker	,796	,658	,605	,614	,774	,714	,783	1,0000		
Adigju	,191	,114	,249	,137	,175	,301	,223	,258	1,0000	
Adizog	,257	,261	,389	,283	,251	,331	,250	,315	,855	1,0000

Table 3. *Canonical Crosscorrelations*

	Mkgjv	Mtapkë	Mvr 20m	Mputop	Muslla	Mugjrr	Mutk 20m
Apesha	.138	.111	-.130	.115	.003	.030	.057
Alarte	.153	.126	-.027	.196	.075	.026	.181
Agjake	.165	.097	-.041	.268	-.034..	.041	.056
Agjash	.154	.170	-.033	.183	.021	.110	.085
Apegjo	.193	.167	-.068	.118	-.083	.014	.016
Apebel	.156	.097	-.123	.082	-.137	.-062	-.102
Apekof	.125	.134	-.167	.094	-.045	.-.007	-.031
Apeker	.248	.104	-.173	.060	-.033	.078	-.078
Adigju	.410	-.012	-.357	.089	-.375	-.209	-.492
Adizog	.390	.004	-.278	.044	-.290	-.226	-.387

For the explanation of anthropometric and motor space is shown in Table 4, which presents the correlation coefficient (R), level of validity (P), level of freedom (Df) and roots of canonical correlation and common variance (R^2) . In this case are shown two canonical factors: First canonical factor has the value of canonical coefficient R=.66 which explains with 44% of the common variance R^2= .44 in the level of validity p=0.00.

Second canonical factor has weaker connectivity of canonical correlation with R= .40 which explains common variance with 16% and with validity P= 0.04, table 4.

Whereas, in table 5, are given the values of first canonical factor in morphological space, whose vectors go in two directions with bipolar dimension which projects the variable vector ALARTE in positive pole .55, while in negative pole is projected variable vector ADIGJU -.74. In motor space in table 6, is distinguished the test for leading the ball corridor 20 meters MUTK .70, whereas weak correlative links are showing the tests MUSLLA and MUTK 20m. We can conclude that between anthropometric and motor space is a relation between knee diameter and body height, which have effect in performing the test of leading the ball in corridor 20 meters.

Second canonical factor presents a weaker relation of canonical correlation with R= .40 which explains common variance with 16% and with validity P= 0.04, table 4. As well as vectors of second canonical factor table 5 are distributed in two directions with bipolar

dimension where in morphological space, variables give the value of different poles as: ALARTE-.68, AGJASHE -.51, APEGJO -.41,APEKER -.74, ADIGJU -.43, vectors of which are projected in negative pole, while in positive pole are projected the variables: AGJAKE .54, and APEBEL .57. Whereas in motor space is distinguished only the test of explosive force, vectors of which are projected in negative pole MKGJV -1.03 which has a great relation with the variables of anthropometric space that enable realization of a long jump from place. As a conclusion we can say that from the structure of first canonical relation from the factors of anthropometric and motor space, it is shown that the test of leading the ball in corridor is dependent from a knee diameter and body height, while in second canonical factor test of explosive force is dependent on many anthropometric variables: ALARTE, AGJASHE, APEBEL, APEKER, ADIGJU, AGJAKE, APEGJO.

Table 4. *Canonical relation*

	R-Canonic	R²-Canonic	h²	Df	P – level	λ
0	,66	,44	150,85	70	**,00**	,31
1	,40	,16	73,18	54	**,04**	,57
2	,39	,15	50,00	40	,13	,68
3	,29	,08	27,81	28	,47	,81
4	,24	,06	15,83	18	,60	,88
5	,20	,04	7,34	10	,69	,94
6	,10	,01	1,58	4	,81	,98

Table 5. *Canonical anthropometric factors*

	Root 1	Root 2
Apesha	.07	.39
Alarte	**.55**	**-.68**
Agjake	-.07	**.54**
Agjash	.19	**-.51**
Apegjo	-.10	**-.41**
Apebel	-.26	**.57**
Apekof	.23	.22
Apeker	-.21	**-.74**
Adigju	**-.74**	**-.42**
Adizog	-.11	.07

Table 6. *Canonical motor factors*

	Root 1	Root 2
Mkgjv	-.09	**-1.03**
Mtapkë	.32	-.24
Mvr 20m	-.04	.00
Mputop	.25	.02
Muslla	.35	-.06
Mugjrr	.18	-.36
Mutk 20m	**.70**	-.38

Conclusion

Based on the main purpose of this paper is the verification of anthropometric and motor relations of situational movements between students as football players and non football players of 13 years of age.

In this paper was treated the sample of 142 entities students of elementary school “Vëllëzërit Frashëri” in Lipjan, 71 students non active in football and 71 followers of football school.

In order to verify relations between anthropometric and motor space, we conducted also canonical analysis, in this case we have obtained two matrixes of correlations, to the right and to the left side, where are shown the correlations in anthropometric and motor space.

Crosscorrelations or interconnections altogether (right with left set), it is noticed that circular dimension factor has connectivity with all the situational tests in fotball with what once again confirms the importance of this factor for football players and it remains that in the future this process to continue and to have further researches.

Whereas from the structure of first canonical relations from the factors of anthropometric and motor variables, it is shown that test of leading the ball in corridor is dependent by anthropometric variables, knee diameter and body height, whereas in second canonical factor, the test of explosive force is dependent by more than anthropometric variables as: ALARTE, AGJASHE, APEBEL, APEKER, ADIGJU, AGJAKE, APEGJO.

Such research studies are good predictors and should be considered especially during the selection of children and youth for football school, for orientation and their selection in sport.

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Taking into account morphological and motor status of students as football players and non-football players of the same age is meant by certain basic system of anthropometric latent dimensions which are developed with the influence of endogenous and exogenous factors and the impact of physical education classes and various trainings outside education process.

While in motor space the research is defined in basic motorics and in situational motorics of the game of football, where in some of them important factor is genetic factor or born.

Through this study we can conclude that the work that students do in schools during the physical education classes, will change with the students as football players who had the opportunity that except physical education classes to work as well during the week 3 to 4 trainings in the football school.

For this research was taken the sample of 142 entities of 13 – years of age from them 71 students and active football players and 71 students that aren't active football players.

The main purpose of this paper is verification of canonic relations, anthropometric space, and basic motor tests and situational motorics to the students as football players and non-football players and also we will verify the implementation and impact of anthropometric space parameters in basic motor tests and situational motorics.

Key Words: *Anthropometric and motor dimensions, Football players and non football players.*