

## **THE STRUCTURE AND SPECIFIC MOTOR SKILLS OF STUDENTS FROM 14 YEARS OLD**

*Preliminary communication*

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### **Abstract**

*In order to determine the structure and motor ability, the search is carried out around 90 of 14 years old students of primary school "Bajram Shabani", Kumanovo. For the realization of research it has been accepted 13 motors variable S system: three for speed segment, four for replay percentage, three for flexibility percentage and three for agility percentage, and for variable of motor abilities of which: six for percentage of explosives and three for percentage of sprint running. Based on the results obtained from factor analysis, it can be completed that within the motor and specific abilities of students of primary school exist four dimensional spaces, which can be defined as: factor of explicit power, factor of segmental speed, factor of agility and factor of repetitive power and flexibility.*

**Keywords:** *factor analysis, latent motor dimensions, power repeater, body flexibility and agility, specific motor variable, explosive force, sprint running, explosive strength factor, speed factors*

### **INTRODUCTION**

The degree of the present kinesiology processes determination, the processes are divided into preparatory training activities and disciplines that can not be imagined without a space, connections between them and objective visibility in order to affect the verification process of transformation, are given these objective conditions for planning, programming, implementation and diagnostic checkup of the effective pedagogical of transformation processes. The raining as a process of formation and development of motor habits of athletes which forming is based on the general scientific basis (Stefanović, 2017) resulting the knowledge of the factor structure of the entities, as well as the students from different age groups. Regarding this, by the teachers of physical education is necessary the maximum acceptance of their knowledge and experience which should increase the motors skills performance and specifically within the children and the adults. It is necessary too the professional knowledge in the field of methodic knowledge and methodology. With this the information share of the obtained instruments certainly is a great objective which must show that these processes will lead toward the needed goal.

The main goal of this research is to determine the structure of some motor and specific motor skills of 14 years old students.

### **METHODS**

The research is made on 90 male 14 years old students, at the primary school "Bajram Shabani"- Kumanovo. The research is investigating the system of 13 motors variable of which: three for the percentage of the velocity segment, four for the power repeater, three for flexibility, three for agility and nine for specific motors variable of which: six for percentage of explosive force and three for sprint running percentage.

The main goal of this research is to determine the structure of some motors and specific motors skills of 14 years old students. Factorization method is carried out with main component which is confirmed by the criterion of Kaiser - Gutman according to which it is taken on the level of significance every possible component with the biggest value of one or greater. The main component's significant are transforming with varimax rotation and direct Oblimin position in orthogonal projections.

### **RESULTS AND DISCUSSION**

On the Table 1. are shown the main results of statistical parameters to the motor and variable specific motor of which: the minimum and maximum result, arithmetic as main witness, standard deviation as the main indicator, as well as the main indicators of the shape of the curve, curve asymmetry in terms of physical education, skewness and kurtosis. From this table can be concluded that the variable values have big difference between the minimum and maximum results. Standard values to tests (MČUČ, MSKL, MŠPA, MIP, SMTLN, SMTDL, SMSVM, SMPM, SMSM and SMTM) they are at a higher level and it is about results which are heterogeneous respectively, results which have high variability while some motor and some specific motor tests are at a low level, which shows that discrimination is not satisfied and it is about results which are homogeneous, as well as concrete results which have low variables. Asymmetry is small in the all variables which indicates that the distribution is normal (above 0) in addition to variability (MTTEST) and (MČUČ) where distribution is in the high level, the value of all around variables is under 2,75 it is indicating that these are of a special character of the specific results in arithmetic environment except that (MČUČ) that value of this is in the highest level which shows that the results are concentrated around the medium venues and it is about for something higher or the results are higher than 4.00.

Table 1. Descriptive statistics parameters of motor and specific motor variables (N=90)

Variables	Descriptive Statistics					
	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
MTR	20.00	33.00	26.9000	2.84447	-.142	-.330
MTN	19.00	38.00	29.5889	3.86542	-.094	.088
MTNZ	16.00	32.00	24.8778	3.61280	-.168	-.367
MPTLG30	12.00	30.00	21.6556	3.64171	-.433	.485
MPTŠS30	10.00	43.00	31.5444	6.34966	-.928	1.519
MČUČ	7.00	220.00	51.5000	30.39709	3.503	16.112
MCKL	.00	38.00	14.5169	8.13258	.667	.536
MDPS	3.00	35.00	21.1422	6.58256	-.040	-.142
MŠPA	127.00	207.00	173.3389	12.90889	-.351	1.381
MIP	49.00	136.00	90.0889	20.19547	.102	-.788
MON	17.18	25.56	20.0863	1.90715	.706	.037
M10H5	16.20	24.90	19.5349	1.79562	.917	.639
MTTEST	6.88	12.06	8.4166	1.08024	1.304	1.880
SMTLN	302.00	778.00	489.0000	85.30408	-.106	.559
SMTDN	261.00	670.00	496.3333	84.98817	-.582	.152
SMSVM	10.00	57.00	33.3333	8.46540	-.079	-.002
SMPM	600.00	1155.00	899.1111	131.25551	-.231	-.435
SMSM	115.00	238.00	172.0556	24.16068	-.197	.017
SMTM	360.00	663.00	511.8000	66.80312	-.080	-.414
TR30M	4.00	6.20	4.7727	.52869	.672	-.153
TR80M	9.50	14.90	11.5524	1.36114	.833	.113
TR100M	12.50	19.80	14.9949	1.71822	.987	.516

Table 2. Kaiser-Meyer-Olkin correlation coefficient of sampling adequacy

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.896
Bartlett's Test of Sphericity	Approx. Chi-Square	1460.827
	df	231
	Sig.	.000

Table 3. Eigen extraction sums of squared loadings

Component	Total Variance Explained		
	Total	% of Variance	Cumulative %
1	10.292	46.782	46.782
2	1.579	7.178	53.961
3	1.381	6.278	60.239
4	1.178	5.356	65.596

The adequate index of matrix it is shown in the Table 2. where the coefficient number of Kaiser Meyer - Olkin is in high level of .896 which means that it is suitable for factoring. Regarding the Table 3. the values characteristics are shown within the percentage of inexplicably variants, this system has formed four main components which are necessary to clarify 65,59 % through the space research. The first main component has the characteristics LAMBDA =10.29 and from all explanation participates with 46.78%. The second major component whose characteristic radical of 1.57, within the whole explained variability participates with 7.17%. The third main component is 1.38 whose variability and participates with 6.27%, and fourth main component is 1.17 and participates with 5.35%. After performing of the Oblimin rotation and Varimax rotation a coordinate system in order to gain new structure for specific motor and motor - space relation, four other factors are

gained larger and better explanation, we found it in Oblimin rotation shown by the Tables number 4. and number 5.

The first factor to variability have explosive power (SMTLN, SMTDN, SMSBM, SMPM, SMSM, SMTM, TR30m, TR80m and TR100m) all statistics are from F1 and are higher and brought from (.75), from (.90). This dimension can be defined as factors of the explosive strength.

The valid projections about the variabilities factor F2 for the percentage of velocity segment (MTR, MTN, MTNZ), are very high and experienced positive (from .73 to .88), which may be defined as segmental speed factors.

Table 4. Rotated component matrix of applied motor and specific-motor factors and its Varimax orthogonal rotation

Variables	Varimax faktors			
	1	2	3	4
MTR	.117	.833	.098	.087
MTN	.300	.688	-.070	.046
MTNZ	.248	.830	.195	.023
MPTLG30	.418	.228	.142	.378
MPTŠS30	-.090	.013	.101	.802
MČUČ	.032	-.044	.733	.144
MCKL	.523	.314	.144	.335
MDPS	.264	.487	.384	.076
MŠPA	.383	.056	.081	.653
MIP	-.423	-.099	-.218	-.330
MON	-.392	-.175	-.666	-.207
M10H5	-.441	-.229	-.632	-.203
MTTEST	-.426	-.271	-.650	.145
SMTLN	.838	.121	.213	.218
SMTDN	.866	.126	.170	.155
SMSVM	.715	.164	.236	-.045
SMPM	.802	.194	.210	.045
SMSM	.832	.248	.205	.080
SMTM	.868	.203	.102	.089
TR30M	-.758	-.324	-.170	-.118
TR80M	-.710	-.433	-.243	-.107
TR100M	-.681	-.424	-.262	-.143

Also the same factor F3 contains a large percentage of agility variability (MON, M10x5 and MTTEST) with a high positivity (from .72 to .76) where the same can be defined as factors of agility. It is also necessary factor F4 which contains (MPTLG30, MPTŠS30, MSKL, MŠPA and MIP) with relatively high positivity (from .38 to .79), which can be defined as a factor of strength and flexibility. In the Table 4. are shown the intercorrelation factors, where we can conclude that they have a valid connection between the F1 and F2 which is valuable on .497. Also is shown the correlation between F1 and F3 and it is also valuable on .422, between F1 and F4, F2 and F4, F3 and F4, F2 and F3 we do not have a valid connection that will not comment.

Table 5. Matrix factors to the parameters of motor and motor – specific orthogonal Oblimin rotation

Variables	Structure Matrix			
	1	2	3	4
MTR	.327	.843	-.203	.124
MTN	.430	.730	-.062	.086
MTNZ	.461	.883	-.317	.079
MPTLG30	.523	.370	-.290	.428
MPTŠS30	.040	.052	-.172	.796
MČUČ	.180	.068	-.727	.190
MCKL	.636	.477	-.317	.396
MDPS	.442	.588	-.479	.135
MŠPA	.475	.206	-.240	.690
MIP	-.507	-.255	.348	-.381
MON	-.565	-.368	.766	-.286
M10H5	-.616	-.428	.749	-.286
MTTEST	-.570	-.444	.726	.059
SMTLN	.889	.378	-.420	.307
SMTDN	.901	.381	-.378	.245
SMSVM	.753	.374	-.390	.038
SMPM	.849	.427	-.397	.134
SMSM	.893	.488	-.407	.173
SMTM	.898	.442	-.312	.177
TR30M	-.838	-.539	.368	-.204
TR80M	-.830	-.639	.437	-.196
TR100M	-.808	-.627	.452	-.229

Table 6. Factors inter correlation

Factors	1	2	3	4
1	1.000			
2	.497	1.000		
3	-.422	-.270	1.000	
4	.230	.119	-.194	1.000

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## CONCLUSION

After receiving the results for analysis of factors we can conclude that the motor spaces and specific motor skills to primary school ‘‘Bajram Shabani’’ - Kumanovo exist four factor that may define as:

- factors of explosive force
- factors of segmental speeds
- factor of agility, and
- factors of strength and flexibility replay

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