

## THE INFLUENCE OF MOTOR ABILITIES ON SOCIOMETRIC STATUS OF THE GROUP AT STUDENTS OF 10 YEARS OLD

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### ABSTRACT

The main goal of this research is determining the motor skills of students aged 10 and their impact on the interpersonal relationships in the classroom, the influence of motor abilities of students in their position-acceptance in a group or a class – on sociometric status of the group at students. The sample of respondents consists of 200 students (100 male&100 female) at the age of ten, who attend primary schools in the city of Skopje, Republic of Macedonia. The sample of variables consists of two anthropometric and six motor variables as well as 12 variables to determine the sociometric status of the group at students. Data obtained by using descriptive statistical procedures such as: arithmetic mean, standard deviation, skewness, kurtosis, minimum and maximum result will present the image of the researched statistical positions and also it will be helpful in the further interpretation of the survey results. Through the multiple statistical procedures the motor skills impact on the acceptance of the sociometric status of the group at students can be accurately located- regression analysis, where by partial regression coefficients and coefficients of multiple regression with the coefficient of determination will determine the impact of criteria variable on the system of predictors. By the results thus obtained a scientific conclusion is allowed on an appropriate level of statistical significance of .05, which notes that students who do sports and have good motor skills are positively accepted by their classmates. Students who do not do sports and have below average motor skills are usually those with the worst behavior in the class.

**Key words:** students, motor skills, grade, position-acceptance

### INTRODUCTION

Some sociometric researches indicate that a group appreciates the following abilities: the physical strength and ability, boldness, jokes and humor, intellectual abilities etc (Keramiciev 1999, Saiti 2007, Todorovski 2007). The confident children are accepted by the group quickly and easily, whereas the ones who are timid and lack confidence face difficulties in their acceptance.

All students look for their place within each formal or informal group, trying to elevate their social status to a higher level (Berkovic 1989).

After the physical abilities of the students and the social status of the individuals in the group are determined, it will be clearer which phenomena and issues belong to this area of research. It will be determined which students dominate in their class in terms of gender and motor abilities. Hence, the motor abilities of the students and their social status in the class are the basic subject of this research. The following individual goals emerge on the basis of the presented issue and the subject of the research.

1. To determine the physical abilities of the students.
2. To determine the social status of the students in their class – social group.
3. To determine the influence of the motor abilities on the social status of the individuals in the group.

### METHODS

#### Sample

A sample group is taken in this research because of the institutionalized division of the respondents in groups, i.e. classes. All the respondents of the groups are considered to be separate entities.

The sample of respondents consists of 200 students (100 male&100 female) at the age of ten (+, - 6 months). We used two anthropological variables, five motor variables and twelve social variables.

#### Sample of variables

Anthropological-motor variables: height and weight.

Motor variables: sit-ups (PTP), plate tapping (TPR), standing broad jump (SDJ), pull-stay (VIS), shuttle run 5x10m. (TRC) and bend on a bench (DPK).

Sociometric variables: 1. I like playing on the computer more than I like playing outside with the children, 2. I often watch sport on TV, 3. Do you believe you are strong?, 4. Do you train a sport?, 5. Who would you like to be friends with, from your class?, 6. Who would you like to learn with? 7. Who do you not want to be friends with?8. Which students would you choose to be part of your team? 9. Who do you like playing with outside the school? 10. Are you afraid of some children in the class? 11. Who is the naughtiest in the class? 12. Who is the best sportsperson in your class?

#### Method of data processing

The central and dispersive statistical parameters were calculated for each motor variable: arithmetic mean (AS); standard deviation (SD); the assessment of the distribution of the results -skewness (Sk); the homogeneity of the results - kurtosis (Ku), (Min); (Max). The influence of the motor abilities on the position of the individual in the group is determined by using regressive analysis.

### RESULTS<sup>6</sup>

By analyzing Table 1, we notice that the central and dispersive parameters, as general indicators of the motor abilities of the students and the calculated measurements of variability indicate a relatively acceptable degree of homogenization of the distribution, i.e. it may be assumed that the individual parameters of the respondents are within the limits of the allowed values.

The distribution of the results in a certain number of variables partially deviates from the normal distribution. The results of asymmetry in certain variables indicate the negative tendency of asymmetry, which is determined by the use of skewness values (Sk). By analyzing the data of the variables acquired from the respondents, we found interesting and valuable data for further interpretation.

6 Presented charts and comments are not given in integral version because of the limitations of the text

Table 1 Central and dispersive parameters of the motor abilities

Variable	Gender	AS	SD	Min	Max	Sk	Ku
1. Weight (TT)	F	39.81	9.53	28	62	0.78	-0.24
	M	37.88	7.49	25	54	0.47	0.01
2.Height (TV)	F	142.54	5.67	134	155.5	0.58	-0.35
	M	141.56	5.43	130.5	155	0.22	0.25
3.Sit-ups (PTP)	F	14.78	6.27	0	23	-0.47	-0.29
	M	17.42	3.60	9	23	-0.62	-0.06
4. Plate Tapping (TPR)	F	35.27	7.30	15	50	-0.26	0.56
	M	34.46	5.52	17	44	-1.28	3.41
5.Standing Broad Jump (SDJ)	F	117.65	23.78	80	162	0.34	-0.99
	M	128.71	19.76	95	160	-0.03	-1.16
6. Pull-Stay (VIS)	F	5.83	6.55	0	24	1.55	1.96
	M	7.92	8.34	0	27	1.43	1.00
7. Shuttle Run 5x10 (TRC)	F	26.62	2.03	23.31	30.18	0.11	-0.90
	M	24.42	2.14	19.82	31.12	0.87	3.04
8.Bend on a bench (DPK)	F	19.05	6.96	9	32	0.29	-1.00
	M	18.34	6.31	7	34	0.15	0.25

**Regression of the influence of the motor abilities on the position of the individual in the group of respondents** (only the statistically important variables are presented- simple).

By analyzing Table 2, in the total sub-sample of the female students, there is a connection of the overall system of predictor variables for assessment of the motor abilities of the students and the criterion variable.

Generally, from the results of the partial regression for the influence of the motor abilities in the choice of the best sports person in the class, we may conclude that the height, standing broad jump and running 5x10 m. have the greatest influence on the respondents aged 10.

Table 2 Regression - *Who is the best sports person in your class F*

Variable	Beta in	Part. Cor.	Tolerance	St. Err. of B	T (91)	p-level (Q)
HEIGHT	-,25	,11	-,37	,17	-2,11	,03
SDJ	,66	,14	,23	,04	4,67	,00
VIS	-,27	,12	-,34	,16	-2,10	,03
TRC 5X10	-,36	,10	-1,49	,42	-3,53	,00

RO=.70 DELTA=.45, F=11.31, df1=8 df2=91, Q=.00

By analyzing Table 3, there is a connection of the overall system of predictor variables for assessment of the motor abilities and the criterion variable at a level of statistical significance Q=.01.

By analyzing the individual predictor variables, through the results of the coefficients of partial regression, it is possible to conclude that the variables which determine the weight and standing broad jump have the greatest influence on the criterion variable.

Table 3 Regression - *Do you train a sport F*

Variable	Beta in	Part. Cor.	Tolerance	St. Err. Of B	T (91)	p-level (Q)
WEIGHT	,38	,16	,01	,00	2,41	,01
VIS	,59	,16	,04	,01	3,66	,00

RO=.43, DELTA=.12, F=2.72, df1=8, df2=91, Q=.01

Analyzing the Table 4 in total the sub-sample of the male students appear a connection of the overall system of the predictors variables for motor abilities assessment at the students moreover an criteria variable.

Observed as whole, the results of the partial regression, of the influence of the motor abilities upon the variable do you feel strong, it can be concluded that at the 10 years respondents the biggest influence encompass variables VIS, HIGH and PTP.

Table 4 Regression - *Do you feel strong M*

Variable	Beta in	Part. Cor.	Tolerance	St. Err. Of B	T (91)	p-level (Q)
VIS	-,30	,12	-,01	,00	-2,43	,01
HEIGHT	-,58	,11	-,03	,00	-4,86	,00
PTP	-,22	,10	-,02	,01	-2,16	,03

RO=.69, DELTA=.43, F=10.45, df1=8, df2=91, Q=.00

From the table No. 5 in the total sub-sample a connection can be detected of the system of the predictor variables for motor abilities assessment and criteria variable, at the statistical significant level Q=.00.

By analyzing the split predictor variables, throughout their results of the coefficient of the partial regression, it is provided to conclude that this predictor system encompasses the biggest influence upon the criteria variable and the variables that determine the DPK, HEIGHT and PTP.

Table 5 Regression - *Who is the best sportiest in your class M*

Variable	Beta in	Part. Cor.	Tol.	Err.	T (91)	p-level (Q)
DPK	-,39	,13	-,39	,13	-2,82	,00
HEIGHT	-,64	,14	-,76	,17	-4,40	,00
PTP	,36	,12	,63	,21	2,88	,00

RO=.47, DELTA=.15, F=3.24, df1=8, df2=91, Q=.00

### DISCUSSION

The results acquired by the application of the test for assessment of the motor abilities indicate an acceptable distribution of the data.

If the age of the respondents is taken into consideration, none of the results of the motor abilities of the students are surprising, i.e. they are expected, having in mind the results of the research work in this area so far. It is normal for the female students to be taller and heavier, which is the result of the earlier development of the female students. Flexibility, of course, is characteristic for the female students, which in the course of entire whole life is more present in the female gender and it is characterized by higher amplitude of movements.

At male students the speed and the strength are more evident beside the lower physical height and weight comparing to the female students.

### CONCLUSION

On the basis of the evidence of the data from the basic statistics, we make the following conclusions:

On the basis of the data acquired from the matrix of correlation, we may conclude that:

The respondents who are friends, study together and play in the same team at school, the naughty students are not eligible for company and are not determined as strong.

The results of the multiple regressive analysis indicate that there are certain influences of the motor abilities on the social status of the individual in the group:

1. Motor abilities with greatest influence on the social status of the individual in the group of respondents are:
2. The static force of the arms and the shoulder plexus and
3. The weight, height, explosive force of the legs and general speed.

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