

APPLICATION TO EVALUATE MUSCLE STRENGTH AT SIX AND SEVEN OLD STUDENTS (BOYS AND GIRLS)

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(Preliminary communication)

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Abstract

The research has been conducted on 120 male and female pupils (4 groups of pupils) aged six and seven. They have been tested with three (3) motor tests of estimating different types of strength. The aim of the research is to determine the basic criteria for estimating the muscle strength of the entities. According to the obtained numerical values, the conclusion is that both the male and female pupils at the age of 7 and 8 have similar strength characteristics. And yet, within most combinations arithmetic means of the achieved results have statistically significant differences.

Key words: *motor tests, Student's t-test, percentiles*

INTRODUCTION

The evaluation represents an appreciation of the achievement of a completed work. A word that in the education system defines knowledge measuring, more precise getting more accurate data on the student's achievements and results.

The assessment in education, wanted to assess the level of specific knowledge among students, and thus the assessment of success in implementation of program's planning and programs that teacher want to realize. On the other hand, they indirectly provide information to parents on the progress and development of children (Majerië, (2004); Milošević (2010); Ministarstvo... (2001).

Knowledge of pupils that is taken as an object of measurement, only one, but not the only effect of the educational process, is not something that can be observed directly, or it can directly be measured and valued. It can only be measured indirectly, indirectly through certain reactions of students as they manifest in a given test or test situations, which are created during the training process through various forms of examination.

According to the previous experience with us, widely recognized are several forms of assessment in teaching: summarise, formative and combined. Means that it is fully abandoned formative or ong-

oing assessment, and emphasis is placed on evaluating summarise or left out is the creativity and progress of students.

Experience from neighboring countries can be one of the indicators how to overcome errors made, so that what's valuable to maintain and upgrade. However, to get the objective, a relevant or a clear picture of the situation in the educational system, specifically in sport and physical education in neighboring countries, it is necessary for us to perform some research in that area, which is basically the goal of our considerations.

Any isolated view that is beyond objectivity of the functioning of the education system, only causes more problems in the already incomplete dened system. Topic knowledge appreciation and achievement or assessment in education for now is the hardest area that is not fully defined and the same must be approached with utmost seriousness by all aspects (Dzibrië, Pojskië & Humerovië; (2009); Kazazovië& Kafedzië; (2006).

The evaluation is an integrated process for determining the nature and extent of learning and development of the student. Also it would be most effective if they were taken into account with the following principles:

- Clearly specifies that what we need to evalu-

Table 1. Basic statistic parameters with six and seven years old boys (M) and girls (F)

	Mean	SD	min	max	skew	kurt
SLJ						
6F	88,77	16,697	52	120	-,123	-,533
6M	101,50	16,994	70	140	,490	-,105
7F	105,60	18,380	70	145	,298	-,407
7M	111,03	18,779	63	146	-,541	,264
R10						
6F	2,8037	,60124	1,90	4,11	,463	-,636
6M	2,3993	,31062	1,96	3,06	,614	-,415
7F	2,4920	,51346	1,90	4,03	,972	1,038
7M	2,2060	,18303	2,00	2,77	1,264	2,004
PUP						
6F	12,23	4,500	2	20	-,072	-,162
6M	14,40	5,494	3	25	-,109	-,485
7F	15,17	8,321	3	36	1,108	,649
7M	15,17	5,279	7	26	,222	-,854

Table 2. Student's t-test

Groups	SLJ		R10		PUP	
	t-test	P (0,05)	t-test	P (0,05)	t-test	P (0,05)
6F-6M	-2,927	,005	3,272	,002	-1,671	,100
6F-7F	-3,713	,000	2,159	,035	-1,698	,095
6F-7M	-4,853	,000	5,209	,000	-2,316	,024
6M-7F	-,897	,373	-,846	,401	-,421	,675
6M-7M	-2,062	,044	2,937	,005	-,551	,584
7F-7M	-1,133	,262	2,874	,006	,000	1,000

Table 3. Estimation with six and seven years old boys (M) and girls (F)

Motor tests	Marks				
	1	2	3	4	5
SLJ	up to	from-to	from-to	from-to	more
6F	58,05	58,05-77,25	77,25-101,25	101,25-117,25	117,25
6M	72,75	72,75-90,00	90,00-110,00	110,00-134,50	134,50
7F	75,50	75,50-90,00	90,00-120,00	120,00-140,05	140,05
7M	72,35	72,35-98,75	98,75-125,00	125,00-142,70	142,70
R10	up to	from-to	from-to	from-to	more
6F	1,95	1,95-2,32	2,32-3,23	3,23-4,06	4,06
6M	1,98	1,98-2,16	2,16-2,61	2,61-3,03	3,03
7F	1,90	1,90-2,00	2,00-2,90	2,90-3,60	3,60
7M	2,00	2,00-2,10	2,10-2,30	2,30-2,68	2,68
PUP	up to	from-to	from-to	from-to	more
6F	3,65	3,65-9,75	9,75-15,25	15,25-20,00	20,00
6M	3,55	3,55-10,00	10,00-18,50	18,50-23,90	23,90
7F	4,10	4,10-9,75	9,75-18,25	18,25-33,80	33,80
7M	7,00	7,00-10,75	10,75-19,25	19,25-25,45	25,45

ate has a priority in the evaluation process.

- Assessment process should be chosen because of its relevance to the characteristics or for achievements to be measured.

- For a comprehensive assessment are required

different procedures.

- Proper use of assessment procedures requires knowledge of their limitations.

- The assessment is a means towards a goal, not a self defined goal.

We need an objective assessment. There are scores of 1 to 5, for the gradation of knowledge. There is no justice if the teacher is acting good and 70 percent of the students are awarded with highest grades (grade 5). So true wronged part in this are the excellent students. Destroyed is the strongest motive - to be first in class, first on the list, towards the top. Lets reward the labour (Konèar & Saviæ (2005); 7 Majeriè, (2004).

This research was carried out with the basic aim to establish the basic criteria for assessing muscle strength at children of male and female sex, 6 and 7 years of age.

METHODS

The research was carried out with 120 students at age 6 and 7 years (first and second grade). The sample was 60 students from first grade, 30 male and 30 female and 60 students from second grade, also 30 male and 30 female. For all students were applied motor tests: standing long jump (SLJ), running at 10 m (R10) and push-ups (PUP) for assessing the overall muscle strength [2 Bala, G. (1981)., 4 Euro fit tests for children (1993).]. The pupils were from the Primary school "Bari Kuchi" - Village Shtruer, Vushtria (Kosovo). An transversely research was made and data obtained for each group was selected by age and sex ,were treated with basic statistical procedures: arithmetic mean (Mean), standard deviation (SD), minimum (min) and maximum (max) result, skewness (Skew) and kurtosis (Kurt). Calculated were also and the percentile values for 5, 25, 75 and 95 percentile. The differences between the arithmetic means in all combinations between the two groups and different ages were tested by t-test for small independent samples. The significance of the difference between arithmetic means was determined at the level of probability $p=0,05$ (Bala, (1990).

RESULTS AND DISCUSSIONS

Table 1 shows the results of the basic statistical parameters for the four groups of respondents by age and sex.

According to the results of the basic statistical parameters of the applied motor tests was noted that they were placed between the real possibilities of the achievements of the treated subjects according to their age and sex. Similar results were also determined with Bala (1981). One can note that at the same age students achieved better results than

the female students. For us it was important, applied tests did not constitute a difficult motor task to perform taken into account the age of the respondents. That, in this study was confirmed. Tests were successfully performed by all respondents who participated in the survey.

Table 2 shows the values of t-tests for the difference between arithmetic mean by the combinations between groups of respondents. Noted that in most of the combinations between groups and tests were statistically significant differences at level 5% ($p=0,05$).

Table 3 shows the basic assessment norms for 5, 25, 75 and 95 percentiles. They are shown for each group separately and by age and by gender for each of the three motor tests to assess muscle strength.

Special practical contribution of this document was trying to establish the basic norms of this methodological approach. This way of making the standards can be applied in the methodology of assessment of motor abilities of children and students.

CONCLUSIONS

According to the results we could adopt the following concluding observations and recommendations:

1. Established criteria for evaluation to be verified and with students of the same ages and both sexes and from an urban environment.
2. To develop criteria for evaluation (percentile scales) and other motor tests to monitor the motor development of the children in the state.
3. In most relations between age and gender of respondents, male students achieved better results than the female students.

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ПРОЦЕНУВАЊЕ НА МУСКУЛНАТА СНАГА КАЈ МАШКИТЕ И ЖЕНСКИТЕ ОД ШЕСТ И СЕДУМ ГОДИНИ

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Апстракт

Испитувањето е извршено на примерок од 120 ученици (машки и женски) на возраст од 6 и 7 години. Примерокот беше поделен на четири групи. Тие беа испитани со три моторни тестови за проценување на различни видови мускулна снага. Според добиените резултати од испитувањето е утврдено дека машките и женските на возраст од 7 и 8 години, имаат слични карактеристики на мускулната снага. Но сепак, во повеќето комбинации при испитувањето на аритметичките средини кои се добиени од податоците на применетите моторни тестови за проценување на мускулната снага, се утврдени статистички значајни разлики.

Клучни зборови: моторни тестови, Студентов t -тест, перцентили