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PARTICULAR ASPECTS IN THE PSYCHOMOTOR DEVELOPMENT OF PRIMARY SCHOOL STUDENTS, IN RELATION TO THEIR HOME ENVIRONMENT (URBAN/RURAL)

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Abstract

Complex function directly involved in the adjustment of individual behavior, psychomotricity provides the child with the optimal conditions for aquiring a system of skills designed to provide him with an effective adaptation to the growing demands of the environment in which he is active. Therefore, it is advisable to have a knowledge as thorough as possible, doubled with a clearer understanding of the main factors specific to the psychomotor phenomenon, the relationships established between them, their dynamics within the general motor component and their specific manifestation in certain environmental conditions (urban / rural).

Present as a specific objective of physical education, the development of psychomotricity ensures the completion of the acquisitions specific to the various stages of learning in the life of the child. Knowing the level of development of the psychomotor component has always been a permanent concern of the specialists in the field of physical education, because it is the basis of the elaboration of the different intervention strategies, which are specific to each educational cycle, especially to every lesson of physical education. For this reason, the return of this age stage, of crucial importance for the further development of the child, to the research domain, is a well-defined goal of this research.

Regarding the methods, 40 subjects, male and female primary school students, coming from urban and rural areas, were selected to participate in this research experiment. Using a part of the Bruininks-Oseretsky Test – Second Edition, the experiment analyzed possible differences between their psychomotor development, in the balance and strength subtests.

The analysis of the results provided by this experiment allows specialists, directly involved in the educational process, to adapt it according to modern demands. Moreover, we can conclude that the use of Bruininks-Oseretsky Test - Second Edition (BOT-2), for the purpose of a thorough and complex psychomotor assessment of primary school students, is not only necessary but also advisable.

The application of the physical education program at the level of the primary education cycle, by specialized teachers, is an essential condition for the professional guidance of the educational process and creates the opportunity to start some specific researches at this stage and to make a complete and complex evaluation of the different aspects related to the psychomotor behavior of the child.

Keywords: psychomotor development, primary school students, urban and rural environment

Introduction

The insufficient movement experience of more and more children entering the school environment as a result of inadequate psychomotor stimulation in the pre-school period, coupled with the more and more pronounced changes, demands and rigors of everyday life, call for reconsideration and return to the spectrum of theoretical and, especially, the practical aspects of knowing the level of psychomotor development of children and the concrete possibilities of optimization.

Present as a specific objective of physical education, the development of psychomotricity ensures the completion of the acquisitions specific to the various stages of learning in the life of the child. Knowing the level of development of the psychomotor component has always been a permanent concern of the specialists in the field of physical education, because it is the basis of the elaboration of the different intervention strategies, which are specific to each educational cycle, especially to every lesson of physical education.

The Bruininks-Oseretsky Test of Motor Proficiency, Second Edition, provides a comprehensive assessment of motor skills, including differentiated measures of gross and fine motor proficiency, making it a useful instrument to a variety of practitioners, specialists and researchers in a variety of settings. Moreover, due to its large scale use for the testing of different psychomotor components or the entire psychomotor capacity led to its recognition as one of the most important and valid evaluation instruments.

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Purpose:

Through its specific tasks and objectives, this research analyzed possible differences in psychomotor development of primary school students, in relation to their home environment. Using a part of the Bruininks-Oseretsky Test – Second Edition, this study highlights the importance of proper evaluation of these aspects, by using modern and effective tools, which contributes to a better understanding of educational process.

Hypothesis:

The results obtained from the assessment of primary school students through the Bruininks Oseretsky Test – Second Edition will reveal significant differences in balance and strength components in relation to the subject's home environment.

Methods:

Part of the author's doctoral thesis**,** the psycho-pedagogical experiment took place between March 2010 - June 2010 and it encompassed the following stages:

1) March 20, 2010 - May 21, 2010: the evaluation of subjects from the urban area;
2) March 28, 2010 - April 1, 2010: first stage of evaluation of subjects from the rural area;
3) June 2, 2010 - June 4, 2010: second stage of evaluation of subjects from the rural area.

For the research, a number of 40 subjects were selected (20 boys and 20 girls), 1st up to 4th grade students, coming from urban and rural areas alike. Regarding the urban area, of the 20 selected subjects, 15 were students from David Praporgescu 113 Elementary School, while the remaining 5 belonged to 162 Elementary School. In the rural area, the subjects were students of Simion Bărnuţiu Elementary School from the village of Tiur, Alba County.

As an assessment tool, we used the improved version of the Bruininks-Oseretsky Test (BOT-2), a series of tests administered individually, with very precise and well-targeted objectives, which aim at evaluating a large range of motor skills, on subjects between the ages of 4 and 21. This test was conceived to be used, among others, by kinesiotherapists, psychologists, sports teachers, coaches and it seeks to offer them an efficient instrument for measuring fine and gross motor skills. BOT-2 evaluates abilities from four different motor areas:

- Fine Manual Coordination/ Fine Manual Control: Subtest 1 – Fine Motor Precision; Subtest 2 – Fine Motor Integration;
- Manual Coordination: Subtest 3 – Manual Dexterity; Subtest 7 – Upper Limb Coordination;
- Body Coordination (General): Subtest 4- Bilateral Coordination; Subtest 5 – Balance;
- Strength and Agility: Subtest 6 – Running Speed and Agility; Subtest 8 – Strength.

For this research, from the total of eight subtests specific to the motor areas described above, we opted for the balance and strength subtests, which involve the following items:

Subtest 5 - Balance

Item 1: Standing with Feet Apart on a Line-Eyes Open
Item 2: Walking Forward on a Line
Item 3: Standing on One Leg on a Line-Eyes Open
Item 4: Standing with Feet Apart on a Line-Eyes Closed
Item 5: Walking Forward Heel-to-Toe on a Line
Item 6: Standing on One Leg on a Line-Eyes Closed
Item 7: Standing on One Leg on a Balance Beam-Eyes Open
Item 8: Standing Heel-to-Toe on a Balance Beam
Item 9: Standing on One Leg on a Balance Beam- Eyes Closed

Subtest 8 - Strength

Item 1: Standing Long Jump
Item 2: Full/Knee Push-ups
Item 3: Sit-ups
Item 4: Wall Sit
Item 5: V-up

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Results:

Statistical processing of the research results was accomplished using the BOT-2 ASSIST™, Scoring and Reporting System (software belonging to the Bruininks-Oseretsky Test, Second Edition) and EXCEL 2003 Software of Microsoft Company. The BOT-2 ASSIST™ converts total scores obtained by subjects after applying the Bruininks-Oseretsky Test, Second Edition into derived scores, which shows a common significance in terms of their interpretation from a subtest to another and from one age group to the other.

As part of our scientific approach, interpretation of the results was based on scale score, which tells how far an examinees' point score is from the mean point score of examinees of the same age, taking into account the standard deviation of point scores in the population sampled.

Table 1: Scale Score Results - Rural vs. Urban Comparison on the Balance and Strength Subtests

Statistical indicators	**BALANCE**		**STRENGTH**	
	Rural	**Urban**	**Rural**	**Urban**
Arithmetic mean	15.35	15.50	15.70	15.20
Median	15.50	15.50	17.00	16.00
Standard deviation	3.96	4.07	20	22
Maximum value	24	23	9	8
Minimum value	8	10	11	14
Amplitude	16	13	4.33	7.17
Coefficient of variation (%)	25.8%	26.3%	23.5%	23.1%
Difference of means		0.15	-	-0.50
Effect size (Cohen)		0.0004	-	0.01
ANOVA Test				
F critical	4.10		4.10	
Degrees of freedom between the groups- df_1	1		1	
Degrees of freedom inside the groups – df_2	38		38	
F calculated	0.01		0.19	
P	0.907		0.663	

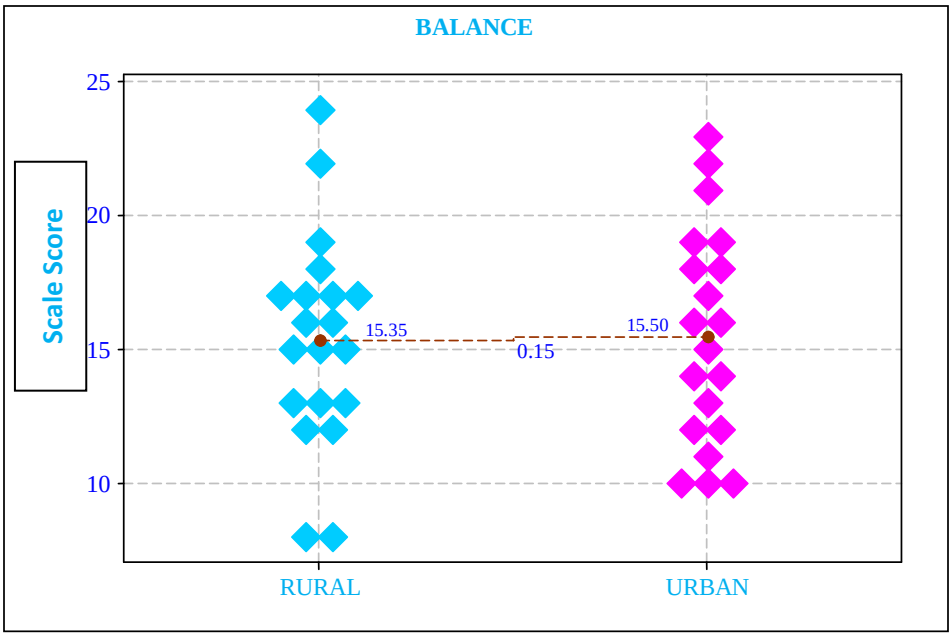

Fig.1. Scale Score Mean - Rural vs. Urban Comparison Balance Subtest

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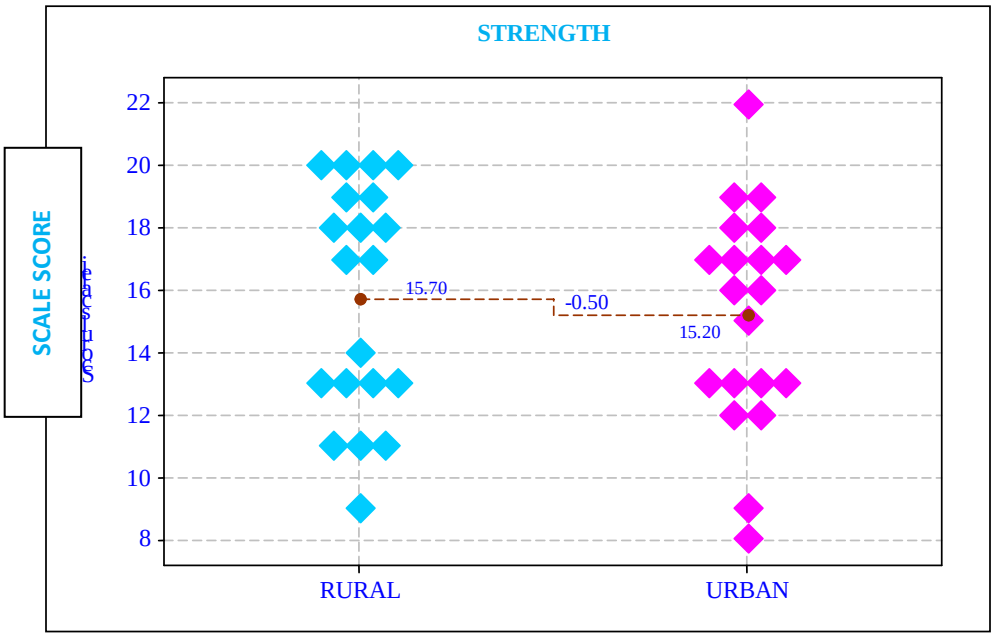

Fig. 2. Scale Score Mean - Rural vs. Urban Comparison Strength Subtest

Conclusions

The values in the Balance subtest were measured for 40 subjects. The arithmetic average 15.35 achieved by the rural group is less than the 15.50 arithmetic mean achieved by the urban group by 0.15 units. The standard deviation and the coefficient of variation specific to each group characterize both rural and urban groups as inhomogeneous. Cohen's effect-size index indicates that the differences between the results of the two groups are very low. Variance analysis performed with the ANOVA test does not revealed a statistically significant difference between these averages, P = 0.907 being greater than 0.05. Therefore, the null hypothesis is accepted and the alternative hypothesis is rejected. The results obtained by the urban group are on average higher.

The values for the Strength subtest were measured for 40 subjects. The arithmetic mean 15.70 achieved by the rural group is higher than the arithmetic mean 15.20 made by the urban group with 0.50 units. The standard deviation and the variation coefficient characterize both rural and urban groups as inhomogeneous. Cohen's effect-size index indicates that the differences between the results of the two groups are very low. Variance analysis performed with the ANOVA test does not revealed a statistically significant difference between these averages, P = 0.663 being greater than 0.05. The null hypothesis is accepted and the alternative hypothesis is rejected. The results obtained by the urban group are, on average, lower.

The application of the physical education program at the level of the primary education cycle, by specialized teachers, is an essential condition for the professional guidance of the educational process and creates the opportunity to start some specific researches at this stage and to make a complete and complex evaluation of the different aspects related to the psychomotor behavior of the child.

Complex function directly involved in the adjustment of individual behavior, psychomotricity offers the child the optimal conditions for aquiring a system of skills designed to provide him with an effective adaptation to the growing demands of the environment in which he is active. Therefore, it is advisable to have a knowledge as thorough as possible, doubled with a clearer understanding of the main factors specific to the psychomotor

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