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COMPARATIVE STUDY REGARDING THE TESTING OF MOVEMENT AND BALANCE MIXING CAPACITY OF 3RD GRADE STUDENTS FROM RURAL AND URBAN ENVIRONMENT THROUGH SPECIFIC MEANS OF BASKETBALL GAME

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Abstract
The present paper is based on an ample comparative study in which five tests were elaborated. These are made of specific means for the basketball game and have been used to evaluate different coordinative

capacities for 3rd grade students in the rural and urban environment. The article presents the first two tests to assess capability of combining movements and balance in which the students are the subjects.
Key words: tests of coordinative capacity (mixing movement capacity, balance capacity), students, basketball, rural and urban environment.

INTRODUCTION

Conditions determine the manifestation of social progress and human qualities and the ability to act quickly under varying conditions.

A. Dragnea, A. Bota (1999) consider the coordinative abilities as "a complex of psycho-motor skills involving the ability of quickly learning new movements, fast and efficient adaptation to various conditions, specific to different types of activities by restructuration the actual motor fund." Thus we emphasize the importance of relationships between coordination capabilities and other motor skills by applying varied content of the basketball game. Particular attention should be given to the development of coordinative capacity in primary grades (A.Păcuraru, C. Preda, L. Ciocoiu, 2010; P.Moisescu 2010; A. Paşcan, 2011).

Approaching the concept of coordinative capacity is an issue of inters in special practice and theory. (A. Dragnea, A. Bota , 1999; A.Dragnea, S. Mate-Teodorescu, 2002; V. Chicu, 2007; G. Raţă, 2008; M. Finichiu, 2009;E. Moldovan, R. Enoiu, 2011, etc).

Balance body ensures adaptability to changing environmental conditions, allows preservation and restoration of complex movements in terms of execution. This involves maintaining stable positions, prepares the body for movement, aims the development of movement and ensures its completion.

The ability to combine movements (this is based on coordinative components of kinaesthetic differentiation ability, the spatial orientation ability, the balance ability) also includes the segmental coordinative of arms (ambidextrous) – legs – trunk.

RESEARCH HYPOTHESIS

Taking as reference the importance of coordinative abilities in physical education lessons and the availability for education at this age, some believe that testing (mixing movements ability and balance ability) provides objective information about the level of development and ownership of

A. General trials

1. Speed running – 25 m standing start girls/boys

the game if used specific means of basketball games for the 3rd grade students, regardless of the training environment (rural or urban).

Purpose

It is represented by the coordinative abilities (mixing movements and balance abilities) of 3rd grade students from the rural and urban environment through specific means of basketball game.

Stage I - Study of the special literature concerning the theme, choosing the working samples, analysing the research methods.

Stage II- Testing the rural and urban students through tests

Stage III- Tests elaboration to determine the coordinative abilities (mixing movements and balance abilities), testing the students through specific tests for basketball game.

Stage IV-Recording, summarization and interpretation of data, showing the conclusions.

RESEARCH METHODS

The methods and techniques of scientific research in the present article are as follows: bibliographic documentation, pedagogical observation, testing method, mathematical statistics (http://www.usablestats.com/calcs/2samplet), graphics and tables.

ORGANIZATION AND CONDUCT OF THE STUDY

This study was made at "Nicolae Iorga" School, Grindu district, Tulcea City and at "I. L. Caragiale" no. 3 School in Galati. The sample structure was of 36 children, boys and girls (18 in the rural areas and 18 in urban) with ages between 8 and 9.

During this research general and specific tests have been given. We mention the general tests have been applied only in the initial testing, in a purpose fund to establish the general level of the students. Each sample was evaluated according to scales established by us. As scoring system, was used the specific qualification for primary grades (table 1.1 - 1.2).

Table 1.1 -1.2 Scales on the granting qualifications at speed running / 25 m standing start

a) girls   b) boys

No. crt.	Standard (seconds)	Qualification
1.	5,9	Very good
2.	6,0	Good
3.	6,2	Satisfactory
4.	>6,2	Insufficient

No. crt.	Standard (seconds)	Qualification
1.	5,6	Very good
2.	5,7	Good
3.	5,9	Satisfactory
4.	>5,9	Insufficient

2. Standing long jump
Table 1.3 -1.4 Scales on the granting qualifications at standing long jump:

a) girls

b) boys

No. crt.	Standard (cm)	Qualification
1.	125	Very good
2.	120	Good
3.	115	Satisfactory
4.	<115	Insufficient

No. crt.	Standard (cm)	Qualification
1.	130	Very good
2.	125	Good
3.	120	Satisfactory
4.	>120	Insufficient

3. Length running (2'45''-G, 3'-B) – established route (including cones, balls on the basketball court). Qualifications presented in tables 1.5 – 1.6

Table 1.5– 1.6 Scales on the granting qualifications at length running

a) girls
b) boys

No. crt.	Standard (minutes)	Qualification
1.	2,45	Very good
2.	2,15	Good
3.	2,00	Satisfactory
4.	>2,00	Insufficient

No. crt.	Standard (minutes)	Qualification
1.	3,00	Very good
2.	2,30	Good
3.	2,15	Satisfactory
4.	>2,15	Insufficient

RESULTS

To analyze and interpret the data statistically we used the Statistical Usable tutorial coordinated by Jeff Sauro (http://www.usablestats.com/calcs/2samplet) we give exemples of speed running – 25 m (table 1.7)

Table 1.7 Introducing the values of statistical indicators for the speed running – 25 m standing start

	N	Mean	StDev	SE Mean
Sample 1 * (rural group)	18	6.054	0.5144	0.121
Sample 2 *(urban group)	18	6.411	0.5141	0.121

Key: -**rural group** – students in the rural areas
- **urban group** – students in the urban areas
Observed difference (Sample 1 - Sample 2): -0.357
Standard Deviation of Difference : 0.1714
Unequal Variances
DF : 33
95% Confidence Interval for the Difference (-0.7057 , -0.0083)

T-Value -2.0828
Population 1 ≠ Population 2: P-Value = 0.045
Population 1 < Population 2: P-Value = 0.9775
Population 1 > Population 2: P-Value = 0.0225
Equal Variances
Pooled Standard Deviation: 0.5143
Pooled DF: 34
95% Confidence Interval for the Difference (-

0.7053 , -0.0087)
T-Value -2.0824
Population 1 ≠ Population 2: P-Value = 0.045
Population 1 < Population 2: P-Value = 0.9775
Population 1 > Population 2: P-Value = 0.0225

For the standing long jump and lenght running the data is sinthetisied in table 1.8 – 1.9.

Table 1.8 Introducing the values of statistical indicators for the standing long jump

	N	Mean	StDev	SE Mean
Sample 1 * (rural group)	18	144.056	21.9155	5.166
Sample 2 * (urban group)	18	141.333	17.6269	4.155

Key: - **rural group** – students in the rural areas
- **urban group** – students in the urban areas

Table 1.9 Introducing the values of statistical indicators for the length running

	N	Mean	StDev	SE Mean
Sample 1 * (rural group)	18	144.056	21.9155	5.166
Sample 2 * (urban group)	18	141.333	17.6269	4.155

Key: - rural group – students in the rural areas

- **urban group** – students in the urban areas

The data which shows the mean notes obtained by research samples can be found in Figure 1.1. This shows the training level of the 2 groups. We can notice a difference of 0,35 in the arithmetical means in the students' favor from the urban area (for the speed running t=2,08 p<0,05). At standing long jump sample the difference is 2,72 in the students' favor from the rural area (t=0,41; p>0,05). The difference at length running is 0,25 for the students in the rural area (t=1,31; p>0,05).

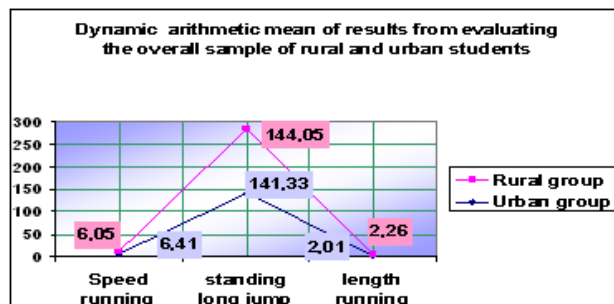Comparison between rural and urban students in general samples.

Fig. 1.1 Dynamic arithmetic mean of results from evaluating the overall sample of rural and urban students

B. TESTING THE COORDINATIVE ABILITIES – PROPOSED TESTS

To check the proposed hypothesis we developed two (2) tests to assess the ability to combine movement and balance using specific means of basketball game. We proposed standards for both tests. Scoring was done by the granting of qualifications (tables 1.10 – 1.11).

Table 1.10- 1.11 Scales on the granting qualifications at test 1 for girls and boys

a) Test 1   b) Test 2

No. crt.	Scales (no.of correct drillings)	Qualification
1.	30	Very good
2.	20	Good
3.	10	Satisfactory
4.	<10	Insufficient

No. crt.	Scales (no.of correct execution)	Qualification
1.	8	Very good
2.	5	Good
3.	3	Satisfactory
4.	<3	Insufficient

1.   TESTING THE MIXING MOVEMENTS ABILITY – "Simultaneous dribbling with two basket balls" (Figure 1.2)
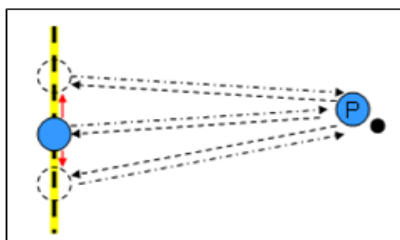

Figure 1.2 Test graphics

Used materials: basket balls
Place: basketball field
Description:
The student performs dribbling in place 30 ". The exercise will run 30 "or if the student loses possession of one of the balls, stops the dribbling.

Evaluation: Performances will include correct consecutive balls without losing control and without dribbling off.
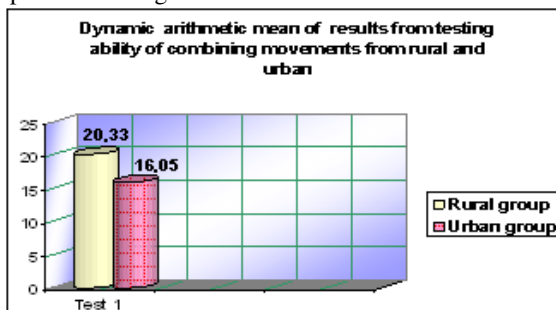

Fig. 1.3 Dynamic arithmetic mean of results from testing the ability of combining movements from rural and urban students

Noting averages chart comparison between urban and rural areas (Figure 1.3), we find that the assay results are better for the rural students than for the urban ones. This data emphasizes that rural students have a better ability to combine movements. At test 1 the arithmetic mean for rural was – *Good* (20,33 correct executions), compared to the urban that was – Sufficient (16,06 correct executions). The Student Test reflects an insignificant value of the two differences. (t=0,88; p>0,05)

Descriptive   Statistics   TEST   1 RURAL/URBAN (Table 1.12)

Table 1.12 Introducing the values of statistical indicators to test the ability of combining movements

	N	Mean	StDev	SE Mean
Sample 1 * (rural group)	18	20.333	17.5164	4.129
Sample 2 * (urban group)	18	16.056	10.7893	2.543

Key: - **rural group** – students in the rural areas

- **urban group** – students in the urban areas

Observed difference (Sample 1 - Sample 2): 4.277
Standard Deviation of Difference : 4.849
Unequal Variances
DF : 28
95% Confidence Interval for the Difference (- 5.6557 , 14.2097)
T-Value 0.882
Population 1 ≠ Population 2: P-Value = 0.3852
Population 1 > Population 2: P-Value = 0.8074

Population 1 < Population 2: P-Value = 0.1926
Equal Variances
Pooled Standard Deviation: 14.547
Pooled DF: 34
95% Confidence Interval for the Difference (- 5.5771 , 14.1311)
T-Value 0.882
Population 1 ≠ Population 2: P-Value = 0.384
Population 1 > Population 2: P-Value = 0.808
Population 1 < Population 2: P-Value = 0.192

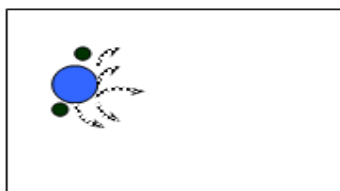**2.   TESTING THE BALANCE ABILITY – "passing the ball in balance conditions**

Figure 1.4 Graphic presentation of test 2

Used materials: basket balls, gymnastics bench

Place: basketball field
Description:
Student, from sitting position on the narrow side of gymnastics bench will receive the ball as a result of execution passing with earth from teacher. Passing the ball to the teacher will be done with two hands from the chest. The teacher passes the first 3 balls to the student's chest direction. To increase the difficulty of the fourth performance, the teacher easily passes the ball alternatively to the left and to the right (the student is forced to keep his balance on the bench)- Figure. 1.4.
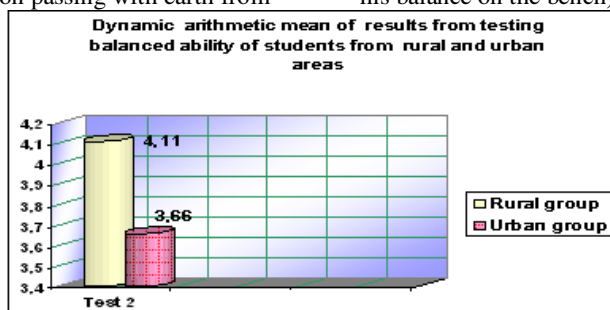

Fig. 1.4 Dynamic arithmetic mean of the results for testing balanced ability of students from rural and urban areas

Evaluation will be done by counting the passes correctly executed by the student. The exercise ends when the student becomes unbalanced and touches the ground or after 10 passes (Table 1.13).

Table 1.13 Introducing the values of statistical indicators to test the ability of balance

	N	Mean	StDev	SE Mean
Sample 1 * (rural group)	18	4.111	2.9283	0.69
Sample 2 * (urban group)	18	3.667	2.4254	0.572

Key: - **rural group** – students in the rural areas

 - **urban group** – students in the urban areas

Observed difference (Sample 1 - Sample 2): 0.45

Standard Deviation of Difference : 0.8962

<u>Unequal Variances</u>

DF : 32

95% Confidence Interval for the Difference (-1.3815 , 2.2695)

T-Value 0.4954

Population 1 ≠ Population 2: P-Value = 0.6238

Population 1 > Population 2: P-Value = 0.6881

Population 1 < Population 2: P-Value = 0.3119

<u>Equal Variances</u>

Pooled Standard Deviation: 2.6886

Pooled DF: 34

95% Confidence Interval for the Difference (-1.3773 , 2.2653)

T-Value 0.4954

Population 1 ≠ Population 2: P-Value = 0.6236

Population 1 > Population 2: P-Value = 0.6882

Population 1 < Population 2: P-Value = 0.3118

The test data analysis showed that both environments (rural and urban) have similar values and both were given the qualification *sufficient*. The mean difference of 0,45 reflects in the values of 4,11 correct executions of rural students and 3,66 for the urban students. The Student Test shows an insignificant value of the differences between the two final means (t=0,549; p>0,05). The insignificant values of the T test is explained by the fact that it wasn't aimed to evaluate training, focused on working programs for the two coordinative abilities to none of the samples.

Processing of the arithmetic average of the final testing capacity coordination of research between the two samples is shown in Figure 1.5
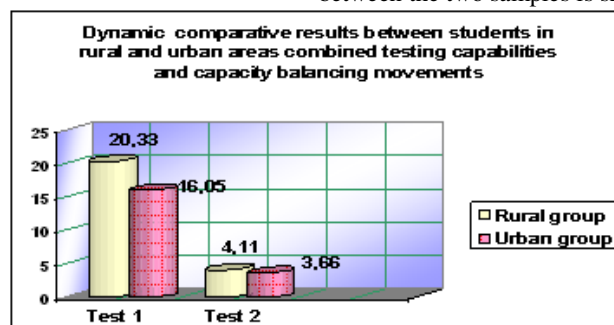

Fig. 1.5 Dynamic comparative results between students in rural and urban areas combined testing capabilities and capacity balancing movements.

CONCLUSIONS AND PRACTICAL – METHODICAL RECOMMENDATIONS

o Using developed tests for assessment of coordination, demonstrated that can be **applied to the third grade students regardless of where they conducted the training (rural or urban).**

o Content tests provide objective information about the level of development, were base on **specific means for the basketball game**

o The two tests can be used in physical education lessons in the evaluation stage, even if during the school year the pupils attend another game.

o Arithmetic average results obtained in final testing for the two samples shows that rural students have achieved better results qualitatively and quantitatively at the proposed tests, compared to students from urban areas.

o The study is interesting because **school basketball game practiced at a very early age is news,** teachers being retained in planning specific content themes for the basketball game.

o Developed tests may be a **selection criterion** for screening children and their future inclusion in the professional sports echelon.

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ASPECTS CONCERNING THE ANALYSIS OF THE FUNCTIONAL PARAMETERS AT F.C.M. DUNAREA GALATI TEAM

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Abstract: In this research we used series of tests designed to determine the physical skills of the footballers and to assess the functional capacity of the organs involved in the performance of this sport. This paper reflectes the values concerning the blood pressure, the respiratory rate, the vital capacity, Lorentz index, Ruffier test and Sargent test.

Key words: Ruffier test, Sargent test, Lorentz index.

INTRODUCTION

This paper reflects the assessing of the functional parameters concerning the footballers of F.C.M. Dunarea Galati team (17 to 18 years of age).

In assessing the cardiovascular system, it is subjected to simple exercise tests, Ruffier test which involves performing a 30-extensions leg curls in 45 seconds. These tests allow to observe variations in heart rate and blood pressure. Ruffier test is called fitness assessment test.

Sargent test or jump-test is a classic test for assessing anaerobic power developed in the case of the effort made with the muscles of the inferior limbs.

MATERIALS AND METHODS

In the aim of the achievement concerning this paper we used the next research methods: the scientifical documentation, the statistical method, the observation method.

In this research, we presented the next functional parameters concerning the footballers (17 to 18 years of age) of F.C.M. Dunarea team:
- blood pressure;
- respiratory rate;
- vital capacity;
- Lorentz index;
- heart rate;
- Ruffier test;
- Sargent test.

RESEARCH RESULTS

If we look in the table no. 1, we observe:

- *"Blood pressure - down"* has a final average for maximum of 115 and 55 for minimum, lower than the initial average for maximum of 120 and 60 for minimum. The reduction was 5 for maximum and 5 for minimum Initially, each footballer it deviates with $\pm$ 12,47, respectively with $\pm$ 6,97 compared to initial average for maximum, respectively for minimum, and finally each footballer it departs with $\pm$ 10,73, respectively $\pm$ 6,77 compared to the final average for maximum, respectively for minimum.

The final variation of 9,33 % for maximum and 12,31 % for minimum is lower, respectively higher than the initial variation of 10,39 % for maximum and 11,61 % for minimum.

The calculation of the significant difference between the final and initial average of the maximum, respectively minimum it expresses