

**RIZESCU CONSTANTIN<sup>1</sup>, GHERVAN PETRU<sup>2</sup>, BAȘTUREA EUGEN<sup>3</sup>, GEORGESCU ADRIAN<sup>1</sup>**<sup>1</sup>Faculty of Physical Education and Sport, University OVIDIUS Constanța, ROMANIA<sup>2</sup>Faculty of Physical Education and Sport, University ȘTEFAN CEL MARE Suceava, ROMANIA<sup>3</sup>Faculty of Physical Education and Sport, University DUNĂREA DE JOS Galați, ROMANIA**Abstract**

**Purpose.** The rise of the sports class attractiveness at the 1st to 4th grade, could be increased by using appropriate means to the training level and needs of the children. Dynamic and preparatory games are an important way of education at this age, helping to improve the motor qualities, number of motor skills enrichment and in the same time satisfying the children's need of playing and competing.

**Methods.** To achieve the research purpose we used the experimental method, the test method and the statistical method.

**Results.** The data from the experiment show that subjects who used the methods proposed by us (dynamic and preparatory games) have achieved superior performance in a statistically significant way compared with those who used classical methods.

**Conclusion.** Selected according to the requirements of the curriculum content, games accelerate the acquisition of the specific handball techniques and lead to faster learning of the bilateral game. To all these are added the educational aspects of the game, using common rules of behavior, cooperation and team work, achieving a fair play behavior.

**Key words:** handball, dynamic and preparatory games, Primary cycle.

**Introduction**

The school's current conditions, with dense program of education to all objects, with increased intellectual demands and independent activity, in order to assimilate knowledge, the concern for the physical development of children of school age, to maintain health and general effort capacity is one of the main tasks of the educational system and the sports teacher (N. Alexe, 1993).

Sedentary activity imposed by attending classes, do homework at home, and other static activities (television, computer) affects the normal processes of children's growth and development. It is necessary therefore that sports education classes have a certain content in order to help build the capacity to practice some sports games, namely handball - not only during school activities, but also later in life, as a "loisir" activity. (C. Rizescu, 2010).

I choosed this topic because students are eager to learn new things, it is specific for them the state of emulation, the competition, and handball game offers a wide range of possibilities of this kind (E. Baștiurea, 2005; P. Ghervan, 2003). Also, getting used to respect certain rules, it familiarizes the students with the assumption of responsibilities according with the laws of behavior in everyday life (I. Kunst-Ghermănescu, V. Gogăltan, E. Jianu, I. Negulescu, 1983). This theme is present in everyday life, being one of the most important concern of

specialists. In order to realize this research we started from the following assumption:

1. In what percentage preparatory games have led to an increased efficiency of achieving (by students) the basic elements and techniques of the handball game;

**Method**

The research was conducted at the School. 5 of Mangalia and for the experiment we used two 4<sup>th</sup> grade classes of boys. I choosed the 4<sup>th</sup> grade class because students are at the end of the primary cycle and the final model of the student to physical education activity will foreshadow the next cycle of study. In order to realize the experiment I made operational models composed from dynamic and preparatory games so that the following handball techniques be seen: movement on the ground, school ball, grip and poultry, dribble and throwing the gate (G. Csüdör, 1983, C. Rizescu, 2003). Performance evaluation was realized in three tests: passing the two-place (number of passes in 30 sec), dribble in a straight line 25 m (sec) and handball throwing gate divided into nine squares, four shoots to 7 m, number of points (C. Rizescu, 2008). There were two trials, first in late October 2009 and the second in early May 2010. To achieve the research purpose we used experimental method, test method and statistical method (Ș. Tüdöși, 1993).

**Results**

The two test results were statistically analyzed and are presented in Table 1. The values obtained were analyzed based on the following statistical indices: the arithmetic mean ( $\bar{x}$ ), standard deviation (SD), coefficient of variation (CV), the Student test ("t") and statistical significance (p).

**Discussion and conclusion**

*Passing the ball from one student to another (two students) in a static position*

The experimental group performed at the initial testing an average of 13.66 passes and 20.16 passes at the final testing. Average difference between the two tests is 6.5 passes. Standard deviation ( $T_i = \pm 2.74$ ,  $T_f = \pm 2.40$ ) indicates the average scattering of individual results from both tests. The variability coefficient confirmed the lack of homogeneity of the initial group testing, and



at the final testing it can be seen an average homogeneity in this group. The control group performed the initial testing an average of 9 passes and 11.86 passes at the final testing. Average difference between the two tests is 2.86 passes. Standard deviation ( $T_i = \pm 1.13$ ,  $T_f = \pm 1.59$ ) indicates the average scattering results at both trials. Homogeneity of variability coefficient indicates the group average in both tests. The difference between the final testing indicates a value at the test "Student" of 8.48 at a significance level of  $p < 0.0005$ . Progress made by the experiment can be attributed to the improving of the working methodology.

*The dribble trial in a straight line*

The experimental group achieved an average of 7.10 sec at the initial testing and 6.02 sec to the final one. Average difference between the two tests was 1.08 sec. Standard deviation from both tests indicate the average scattering of individual results. The value of average coefficient of homogeneity indicates homogeneity in the initial testing and lack of homogeneity in the final. The control group achieved an average of 7.44 sec at the initial testing and 7.11 sec at the final. Average difference is 0.33 sec. There is an average dispersion of individual performance and an average group homogeneity in both tests.

Statistical significance of difference between the average final test between the two groups, certifies a progress at the experimental group ( $t = 2.09$  to  $p < 0.025$ ). It is relevant the fact that working with the experimental group different from the control group it was realised firstly the increasing of the motric quality development and secondly the acquisition of the basic technical procedure correctly.

*Throwing the ball at the gate (divided into 9 squares)*

The experimental group performed at the initial testing 58.75 points and 102.50 points in the

final. There is an average difference of 44.58 points for the final testing. We have to conclude that the standard deviation ( $T_i = \pm 27.39$  points,  $T_f = \pm 20.05$  points) in both tests indicate high dispersion of individual values from the average. The coefficient of variation in growth performance conditions, confirms the total lack of homogeneity in the initial testing and final medium uniformity. The control group achieved an improvement of 23.33 points from initial testing and final testing. And in these circumstances is also very high scattering results from both tests, as evidenced by the lack of homogeneity ( $T_i = 44.01\%$ ,  $T_f = 21.28\%$ ) of them. Calculating the significance of the difference between the averages of two groups at the final testing, we find that the value of the experimental group is statistically significant to the test value "Student" of 3.36 at a significance level of  $p < 0.005$ , and in the test the experimental group obtained superior results compared with the control group where the working methodology for the study of throwing the ball at the gate was the classic one. I insisted very much on the experimental group for the ball throwing technique and only after that we practiced the throwing accuracy. In conclusion we consider that the work is validated by experimental results obtained by the experimental group meaning that handball dynamic and preparatory games, respecting the particularities of children's age (the game is still one of the main activity of children), contributes to a faster accurate acquisition (in terms of competing) of the handball technical procedures game set in the curriculum.

Applying additional motric tests showed that experimental group students achieved better statistically significant results than the control group. This indicates that the methods used also had influence on the development of motor qualities.

**Table 1:** Table 1: The results of the two groups during the experiment

Compared index	group	Initial testing		Final testing			
		x±Ds	Cv%	x±Ds	Cv%	"t"	P
Passing the two-place (nr/30sec)	exp.	13,66±2,74	20,06	20,16±2,40	11,90	8,48	<0,0005
	contr.	9,00±1,13	12,55	11,86±1,59	13,47		
Dribble in a straight line (sec)	exp.	7,10±1,35	19,01	6,02±1,55	25,81	2,09	<0,025
	contr.	7,44±1,00	13,44	7,11±0,93	13,11		
Throwing the ball at the gate divided into 9 squares (nr)	exp.	58,75±27,39	46,62	102,50±20,05	19,56	3,36	<0,005
	contr.	56±5,64	44,1	77,33±21,28	21,28		

Legend: x – arithmetic average, Ds – standard deviation, Cv – coefficient of variability, "t" – the value of the test "Student", p – significance threshold.

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