

Study on the improvement of coordinating capabilities at the level of handball teams (junior III), with the optimization of the technical-tactical potential

POSTELNICU MADALINA-GABRIELA¹; MIHĂILĂ ION²
^{1,2} University of Pitesti, ROMANIA

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Abstract:

The purpose of this study was to observe the extent to which the development of the coordination capacities could influence the improvement of the technical-tactical potential at the level of handball teams junior III, so the research was carried out on a group of 16 athletes aged 12-14, from the Handball Sports Club-ART Galati. The training program aimed at designing and implementing means, selected and dosed according to the age specifics and the preparation of the sample to be researched, aimed at improving the coordination capacities. Following the implementation of this training program, there has been a breakthrough in both technical and tactical executions, both individual and collective athletes, a faster and more creative adaptation to encounter unforeseen situations during the game.

Key words: handball, sports training, coordination skills, technical-tactical potential.

Introduction

As a result of large-scale competitions, one can observe a spectacular evolution in the technique and tactics of the handball game through the emergence of new technical techniques made with ease, even mastery, near to perfection, by the players, at very high speed. Numerous researches and experiments of specialists over the years express their concern for the improvement of handball, all of which have resulted in new methods and means of action for the preparation of future performance athletes. In order to adequately prepare advanced athletic and performance groups, we must consider providing a necessary driving force on which the technique and tactics of handball can be based. This motric fund, which forms the basis of physical and specific training, consists mainly of the development of motoring qualities. Mihaila I., argues that „in order to optimize the team performance, the training objectives for each of the sports training factors must be set. At the same time, the coach has to set the game conception that can be implemented according to the peculiarities of his own players” (<http://frh.ro/pdf/Plani%202014%20C2.pdf>).

When we refer to the content of sports training, „we must consider the fundamental constitutive elements of the instructive-educational process, that is the physical, technical, tactical, psychic and theoretical training” (Cercel, P., 1983, p.12). Next we will refer strictly to the basic component of the instructive-educational process, namely physical training. When we refer to the content of sports training, „we must consider the fundamental constitutive elements of the instructive-educational process, ie the physical, technical, tactical, psychic and theoretical training” (Cercel, P., 1983, p.12). Next we will refer strictly to the basic component of the instructive-educational process, namely physical training.

Physical training means „improving motor skills; the mastery of a wide variety of basic skills and basic skills, as well as the development of the morphological and functional indices of the organism, corresponding to the requirements of the sporting branches” (Siclován, I., 1977, p.15). Bompá considers physical training as „one of the most important factors and, in some cases, the most important component of athletic training in achieving great performance” (Bompá, T., O., 2014, p. 64).

As we all know, physical training has two aspects: general physical training and specific physical training” (Ghermanescu-Kunst I., 1983, p. 188).

The general physical training, according to Hantau C., is „the practical activity that aims to ensure a good working capacity of the body in the conditions of the physical effort. Performance can only be achieved by players with high speed, strength, strength and skill levels” (Hantau, C., 2000, p. 135).

Specific physical training „is the process of educating physical skills specific to handball. This activity takes place in conditions as close as possible to the playing conditions and is carried out in close interdependence with the acquisition of technical tactical skills” (Hantau, C., 2000, p. 135).

Physical training therefore aims mainly to develop and improve the driving qualities of handball players during the preparatory periods in order to maintain them in the precompetitive and competitive periods. Therefore, the development of motor skills is the main goal of physical training without which sporting activity can not be successfully achieved. Bota, quoted by Bastiurea E., defines the coordination capacity as a „complex

psychomotor quality based on the correlation between the central nervous system and the skeletal musculature while performing a movement” (Bastiurea, E., 2007, p. 88).

After Dragnea, Mate-Teodorescu, „the importance of coordination capacities has gained an increased share in the training process, with the expansion of the early training of young people in different sporting sectors, constituting a priority objective from the first training study” (Dragnea, A., C., Mate-Teodorescu, S., 2002, p. 353). Most specialists are of the opinion that the development of coordination capabilities can be successfully achieved at the age of 7 to 14 years.

However, it should be stressed that „to improve this motoring quality it is possible to work with athletes who have exceeded this age category. It is essential to work permanently for the development of coordination, regardless of the age scale, the level of training and the stage of training, but only on the condition of using as many different, diversified and diversified means” (Bastiurea, E., 2007, p. 91).

Methods and means

Research hypotheses:

- If, in the preparation of the handball teams, Juniors III, we will act with a number of handball specific means, selected and dosed in full accord with their age and training peculiarities, then the level of coordination skills development will be known higher values.

- Working in the training process to develop coordination capabilities, technical-tactical executions and team results will improve.

The purpose of the research: The present research was carried out in order to analyze to what extent the coordination capacities can influence the increase of the technical-tactical potential at the level of women's handball teams junior III.

Research subjects: Sporting subjects under investigation consisted of 16 athletes aged between 12 and 14, which make up the junior group III of the C.S. Handball-ART Galati. In order to achieve our goals, we used a series of anthropometric measurements as well as an entire battery of tests to test athletes, both physically and technically, and in terms of the level of coordination. Throughout the activity, the health of the athletes was good.

Tests used in research:

- *driving tests:* „combined”, jumping in length, „triangle movement”, „alternative touching of corner corners 30” (porters only);

- *technical tests:* 30 m dribbling through the balls, throwing the handball at a distance, throwing the ball in the wall and repeating it (variant 1), throwing the ball at a fixed point (2nd variant), dribbling slalom, technical test for the players field, technical evidence for goalkeepers;

- *tests on coordinating capacities:* balance on the bench, returns to the gym bench (2nd variant), sprint in the proposed rhythm, tapping-test (variant 1), running to the balls, the square test, basketball with hand in hand in running with change of direction of movement.

Methods and techniques of research: The methods used during this study were: bibliographic study method, observation method, experimental study method, test method, statistical-mathematical methodology, graphic method.

Description of the samples in which the 16 athletes achieved significant results

Technical test for field players

This test sample is established by the Romanian Handball Federation to test the field players and is carried out as follows (figure 1):

- Center triangle travel (1), exit to the top (2), lateral sloping backward (3), exit to the top (2), oblique lateral backward movement (4), lateral displacement (1). Repeat twice;

- Running speed to the center with the bypass (1-5) running on the front and 5-2 running backwards;

- Collect the ball 1 at a 2 meter lateral point and go into the dribble between the 6 pins placed at the center of the court (the first jalousie at 5 m from the tip of the triangle and the other 5 piles 3 m apart from each other). After the last pole is over, he throws himself at the goal trying to touch one of the two balls hung in the top corners;

- After throwing the ball 1, the ball 2, the ball 3, then the ball 4 are thrown and the ball 4 is thrown, without the crossing of the ground being made by the semicircle;

- After throwing the ball 4, it runs at an oblique speed to the center of the field and crosses the finish line. For each ball reached by balls 1- 2- 3-4, a 5-point bonus is awarded (Bastiurea, E., 2007, p. 104).

Technical test for goalkeepers

The goalkeeper is in a fundamental position in point 1 of the triangle and moves stepwise to points 2, 3, 4, 1 and then sprints laterally by collecting a ball in the order indicated (a, b, c, d) and which he throws in the opponent's goal without exceeding the 6 m semicircle. After throwing each ball, the triangle starting from point 1 (figure 2) is repeated. This is done until the four balls have been thrown. The time elapsed from the departure of point 1 to the last ball is timed. If a ball enters the straight or one-touch goal, a five-point bonus is given for each ball (Bastiurea, E., 2007, p. 105).



Figure 1

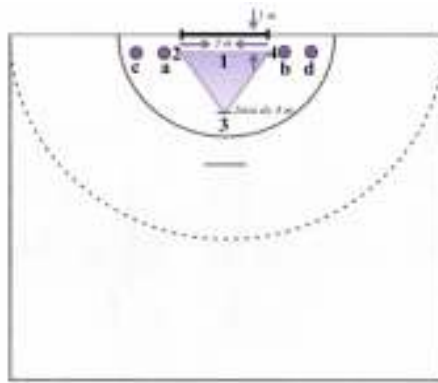


Figure 2

Returns to the gym bench (2nd version)

Standing on the narrow side of the gym, the athlete will make as many turns as possible (right and left) for 20 seconds without falling off the bench.

The result is determined by the number of turns performed for 20 seconds (half-turn precision). The return ends when the athlete returns to the original position. If the athlete loses balance (he falls off the bench), the number of turns is interrupted. After receiving the initial position the continuous counting (Bastiurea, E., 2007, p. 108).

Sprint in the proposed rhythm

Materials: 11 circles (diameter = 60 cm), stopwatch, meter.

At first, the athlete travels at a maximum speed of 30 m with a precision of 0.1 seconds. Then he goes again at a maximum speed of 30 m in which 11 circles are located (figure 3). It forces them to choose a rhythm of running or to change their rhythm as quickly as possible to get into the circle.

The result is determined by the difference between first and second distance running time. (Bastiurea, E., 2007, p. 109).

Tapping Test (version 1)

Materials: stopwatch, pencil, sheet of paper.

A square of 20x20 cm is drawn on paper, which, with two lines, is divided into four equal parts (figure 4). The athlete stays at the table and after the command "attention, start!" For 10 seconds in maximum tempo, puts points in the first square. Over 10 seconds repeat the command and the athlete, without interrupting the work passes to the second square and. a. m. d. For points not to overlap, it is advisable to get your hand on the circle. The total duration of the test is 40 seconds.

For determining the result, there are the points in each square. This is made easier by joining the points between them. Decreasing the number of square-to-square points proves insufficient stability. The decrease of the nerve processes' mobility (lability) is manifested in the stepwise increase of the frequency of the movements in the second and the third square and expresses the slowing of the process of inclusion in the work (Bastiurea, E., 2007, p. 110).

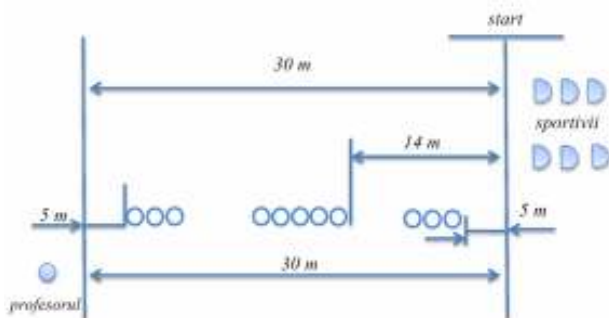


Figure 3

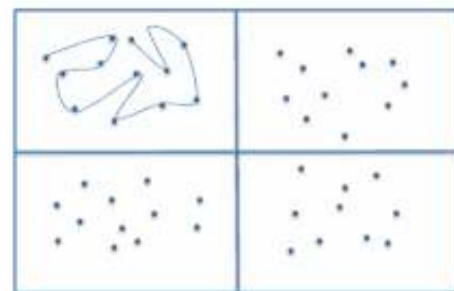


Figure 4

Running to the balls

Materials: 5 medicinal balls (3kg), a medicinal ball (4kg), stopwatch, meter, chalk.

The athlete stands in front of the 4 kg ball. Behind him, at a distance of 3 m and 1.5 m from each other, five medicinal balls (3 kg) are placed with figures 1-5 (ball distribution is free). The teacher calls a figure, the athlete returns 180 degrees, runs to the appropriate ball, touches it, and returns to the 4-kilogram ball. As soon as he touches the ball (4 kg), the teacher names another figure. a. m. d. The exercise ends when the athlete reaches three times and then touches the 4 kg ball. (Figure 5).

The result is determined by the time taken by the athlete to complete the exercise.

After explanation and demonstration, the athlete performs a control contest. Prior to the execution by another student (athlete) the position of the balls is changed (Bastiurea, E., 2007, p. 111).

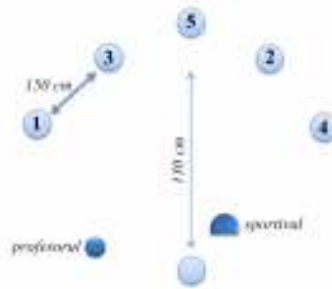


Figure 5

Results

Athletes have been tested technically and in terms of coordination capabilities, after which the values obtained were analyzed (table 1.2).

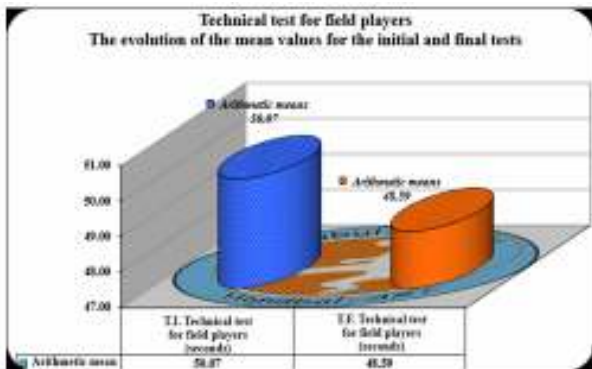
Table 1

Nr. crt.	Name and surname	Technical test for field players (seconds)		Technical test for goalkeepers (seconds)		Returns to the gym bench (2nd version) (number of executions/ seconds)	
		T.I.	T.F.	T.I.	T.F.	T.I.	T.F.
1.	A. A. M.	45,1	44,8			6	8
2.	B. D. L.	47,0	46,4			9	10
3.	B. R. E.	54,5	52,6			6	7
4.	C. A. A.	46,0	45,2			5	7
5.	C. A.	48,2	47,4			6	8
6.	D. S.	54,3	52,2			6	7
7.	G. A.			38,0	37,4	5	7
8.	L. A. M.	46,1	46,0			8	10
9.	L. M. L.	49,7	46,9			10	12
10.	M. C. E.	52,9	52,1			6	8
11.	P. A.	46,4	43,6			10	11
12.	S. A.	50,1	48,7			6	9
13.	S. C.	51,2	48,6			10	12
14.	Ș. D. A.			40,1	39,6	6	8
15.	T. Y. N.	59,2	56,6			4	6
16.	Ț. I.	50,3	49,2			6	10
Arithmetic mean (\bar{X})		50,07	48,59	39,05	38,50	6,81	8,75

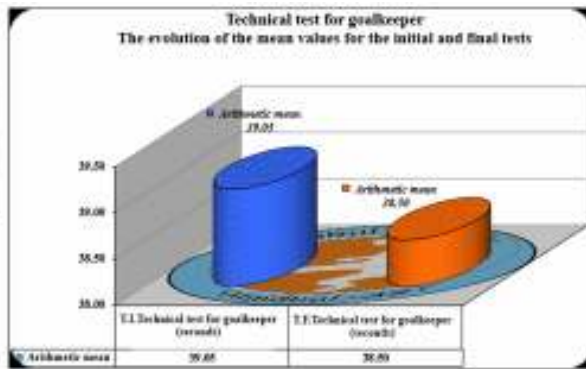
Table 2

Nr. crt.	Name and surname	Sprint in the proposed rhythm (seconds)		Running to the balls (seconds)		Tapping- test (version I) (points)	
		T.I.	T.F.	T.I.	T.F.	T.I.	T.F.
1.	A. A. M.	1,3	0,4	57,3	52,6	224	238
2.	B. D. L.	1,3	0,5	55,8	47,5	207	218
3.	B. R. E.	1,8	1,6	66,0	58,7	218	233
4.	C. A. A.	1,2	0,8	62,0	53,2	204	222
5.	C. A.	0,9	0,8	58,3	49,7	150	167
6.	D. S.	1,4	1,3	63,0	58,9	212	229
7.	G. A.	2,0	1,1	59,4	56,8	214	219
8.	L. A. M.	1,9	1,0	55,2	48,5	208	243
9.	L. M. L.	1,2	0,8	49,2	45,3	211	217
10.	M. C. E.	1,4	1,1	57,1	51,9	220	235
11.	P. A.	1,1	0,6	51,0	47,8	220	245
12.	S. A.	1,1	0,9	56,7	49,4	221	222
13.	S. C.	1,4	1,0	55,2	50,5	215	223
14.	Ș. D. A.	1,3	0,8	57,4	56,3	235	237
15.	T. Y. N.	1,5	0,9	63,0	55,9	205	211
16.	Ț. I.	1,1	0,5	57,4	55,2	212	218
Arithmetic mean (\bar{X})		1,37	0,88	57,75	52,39	211,00	223,56

Interpretation and graphical representation of the results

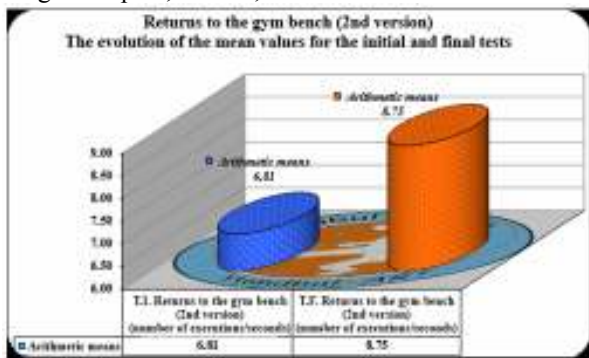


Graphic 1

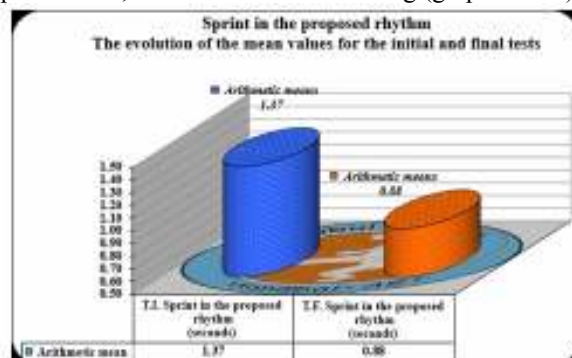


Graphic 2

As part of the technical test for field players, the sum of 14 athletes was 50,07 seconds for initial testing compared to 48,59 seconds for final testing (graphic no.1). The amount earned by the two athletes, specialized in the goalkeepers, was 39,05 seconds for the initial test compared to 38,50 seconds for final testing (graphic no.2).

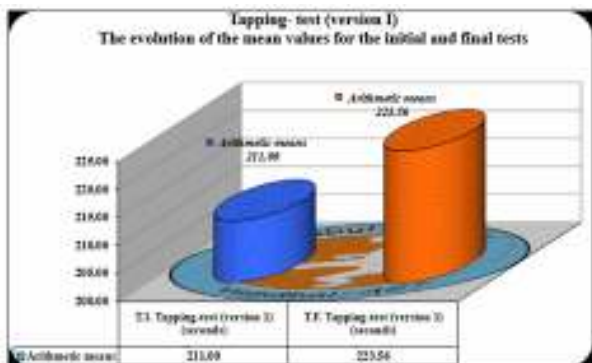


Graphic 3

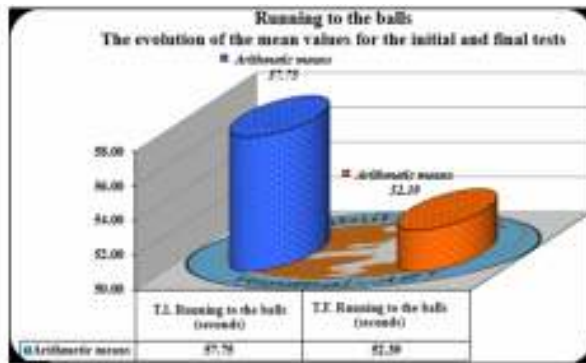


Graphic 4

In graphical representations 3 and 4, the results obtained by the 16 athletes from the final tests are remarkable, compared to the results obtained in the initial tests. Thus, in the sample of returns on the gymnasium bench (variant II) the amount obtained by athletes was 6,81 no. executions/seconds at initial testing, compared to 8,75 executions/second in final testing, the difference between the two arithmetic averages being 1,94 executions/seconds (graphic no.3). In the sprint at the proposed rhythm, the amount obtained by the athletes was 1,37 seconds on the first attempt, compared to 0,88 seconds at the end of the test, the difference between the two arithmetic averages being 0,49 seconds (graphic no.4).



Graphic 5



Graphic 6

As can be seen from graphical representations 5 and 6, the results obtained by the 16 athletes in the tests on coordinating capabilities are significant. Thus, in the test tapping test (variant I), the amount obtained by the athletes was 211,00 points on the initial test, compared to the value of 223,56 points in the final test, the difference between the two arithmetic averages being 12,56 points (graphic no.5). In the ball-running test, the amount of sports was 57,75 seconds in the initial test, compared to 52,39 seconds in the final test, the difference between the two arithmetic averages being 5,36 seconds (graphic no.6).

Conclusions

The research assumptions we left out attested to the fact that the wide range of specific handball gameplay tools that took place during the training program resulted in a significant increase in the final test results of the coordination capacity but at the same time these means also contributed to the process of acquiring the fundamental technique. As a result of the experiment, there was a clear increase in both individual and collective technical and tactical executions and actions, which led to the easier handling of the ball in various game conditions, but also to the application of complex technical elements and procedures during official competitions, which caused me to say and at the same time to conclude that the means I acted on were well selected in accordance with the particularities of the sample. Starting to practice handball at an early age and highlighting specifically the development of coordinating capacities leads to the possibility of quickening those children with a clear vision of practicing this sporting branch.

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