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Original article

THE IMPORTANCE OF MEANS BOORROWED FROM OTHER SPORTS IN THE MULTILATERAL TRAINING OF 7-8 YEARS-OLD DEBUTANTE FOOTBALERS

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Abstract

Aim. Identifying the structural dimensions of multilateral physical training and their use according to the training objectives that are to be achieved with the help of specific means, as well as non-traditional means in the initiation phase of 7-8 years old children in the football game.

Methods. The actual experiment took place during the months of June, July, August, which totaled 92 days of training, to which were added 13 days in which games with reduced prices were organized. We must specify that both groups (experimental and control) worked according to the same analytical program, only that the experimental group performed, immediately after the warm-up, the programs for the development of speed and skill or at the end, when it came to training strength or resistance. The option of practicing another sport during the warm-up part or at the end of the training lesson was also used.

Results. The analysis of the results of the statistical processing of the data obtained from measurements of specific parameters does not allow us to find positive developments in the experimental group compared to the control group in the parameters, although the differences are not large in absolute value.

Conclusions. General motor ability is the main component targeted at this level of training, of the 10 parameters that were tested by the two groups, the experimental group significantly improved 10 out of 10, and the control group, 6 out of 10.

Keywords: Multilateral physical training, football, junior 7-8 years, non-traditional means.

Introduction

Multilateral physical training is actually general physical training selectively oriented by the specifics of the sports branch (Colibaba & Bota, 1998), it is currently an integral part of the training of future footballers and must start from the first hours of training, in order to form and consolidate basic motor skills, as well as the development of motor qualities (Bompa, 2014). In the last decades, a diversity of different aspects of sports preparation, physical, technical-tactical, psychological, has been noted (Cojocaru, 2003; Melenco, 2007).

The demands of today's football involve an increased work rate (Reilly & Gilbourne, 2003) a greater frequency of matches and, as a result, players are required to work harder than in previous decades (Reilly, 2005). In the process of developing performance soccer (Ford, Ward, Hodges & Williams, 2006) coaches look for the most effective training methods (Stratton, Reilly, Williams & Richardson, 2005).

Numerous studies have appeared on factors that have a major importance in football performance (Williams & Hodges 2005), therefore the role of coaches is vital in the long-term development of a football player (Impellizzeri, Rampinini & Marcora, 2005) due to the importance they have in selecting the means of training. Of the traditional sports science disciplines, exercise physiology has had perhaps the greatest impact on the practices of professional football.

In the last decade, numerous studies have been done to identify the factors that determine a player's potential for progress (Stratton et al., 2005) the risk of injury (Davids, Lees & Burwitz, 2000), technical qualities (Le Gall, Carling & Reilly 2008), motor qualities (Reilly, Williams, Nevill & Franks, 2000), according to football specialists Stănculescu (1999); Motroc (1994); Cojocaru (2003); Rădulescu (1984), improving the physical condition can be achieved in practice, discussing the following components: motor qualities for football: control, attention, dribbling, shooting at the goal, tactical thinking, energy capacity for the game, physical qualities: speed, agility, balance, power, strength, balance, resistance, vigor, energy; mental qualities: motivation, desire to compete, emotional balance, desire for consecration, concentration of attention for 90-120 minutes.

The importance of using non-traditional means in the multilateral training of young footballers must be seen through the lens of achieving a multilateral physical training in which the versatility of the training must be an essential element. Specifically, it is about the multitude of means or exercises that do not belong to football, but rather to other sports activities taken from: athletics, gymnastics, basketball, swimming, judo, etc. It is important to note that the choice of

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non-traditional means must be made in such a way as to subsidize the motor structure and the aerobic / anaerobic functional demands specific to the game of football.

The notion of non-traditional means should not be summarized only in the category of motor structures taken from other sports branches or from other motor activities. One of the instructional strategies for achieving multilateral physical training, in our opinion, is its compulsory implementation in the formative stage of practicing the game of football, in which the specific means, but also the non-specific ones, called new non-traditional means, will directly contribute to the formation the general ability that directs methodologically, the requirements of a multilateral physical training in accordance with the level of previous training, as well as the individual characteristics of young footballers (Petcu, 2021). Thus, it is expected not to go directly to the narrow specialization of learning the game until after a minimum 6-month internship of multilateral physical training. This multilateral physical training course would underpin the maximum long-term performance capacity.

Methods

The study started between May 1-30, 2023, together with the coaches from Constanța county, we proceeded to a selection trial of 7-8 year old children who want to practice football. From a number of 50 debutants, we selected 36 children aged between 7-8 years, where we made 2 groups (18 control group, 18 experiment group) players from the football teams: F.C. Farul Constanta, Kinder Constanta, C.S. Snares and C.F.R. Constanta and of general schools no. 28, 12, 7. The initial testing of the two groups was carried out at the beginning of the preparatory period of a competitive year, when we made up the two groups, the experimental group C.S. Năvodari and the control group C.F.R. Constanța.

The method of measurements and control tests

GENERAL MOTRICITY

Travel speed -10m

Travel speed -20 m

Leg relaxation (standing long jump)

Combined motor skills (4 times)

Relative strength - arms

Abdominal strength in speed mode (trunk lifts)

Strength in the extensor muscles of the arms (push-ups with support on the gym bench)

Explosive arm strength (sheepball throw)

Running 600 m

Hip mobility.

TECHNICAL TESTS

Keeping the ball (number of repetitions)

Kicking the ball with the foot (strong / weak) - at a distance

Technique of hitting the ball: with the inside, with the outside, with the lace, with the head, lobbing (Notes 1-10)

Sprint with the ball at the foot

Throw with two hands (aut)

3X3,5X5 game on reduced ground at small gates

The actual experiment took place during the months of June, July, August which totaled 92 days of training, to which 13 days were added in which they added games with reduced effectiveness at small gates. The experimental part of the works is largely related to interrogative assertions and research hypotheses.

In this context, a preliminary study on the analysis of the biomotor potential of the students selected for our study was necessary. Based on the results obtained in the preliminary experiment, a pedagogical experimental sample was created, which was subjected after the initial testing to the optimization of multilateral physical training through specialized programs in a pilot experiment. After this trial experiment, we proceeded to the random selection of two samples of subjects, by verifying our working hypotheses. Thus, the subjects were divided into two representative samples, equal in terms of number and value, which we call the experimental group and the control group. The two groups carried out their activity according to the same analytical football teaching program provided by F.R.Fotbal, but also by established specialists in the field, respectively: Rădulescu (1984); Cojocaru (2003); Motroc (1994).

The two groups carried out their training in parallel, with the same workload and number of training sessions, during the same period (May – October 2023). Unlike the control group, the experimental group also carried out a special multilateral physical training program made up of non-traditional, non-specific exercises "borrowed" from different branches of gymnastics, athletics, judo, as well as other sports activities.

Examples of programs for multilateral physical training by means not specific to the game of football, used in the preparation of the experimental group.



Figure 1. Roll over the mat, vertical release and imitate hitting the ball with your head



Figure 2. Rolling forward from squat to squat, followed by driving the ball through the ball blocks



Figure 3. Roll over the mat, 360-degree twist, followed by dribbling through the rails and a point shot



Figure 4. Jumping on one foot, rolling over the mat and kicking the ball at a fixed point.

The following training, playing and testing load was applied:
54 workouts x 75 minutes = 4,050 minutes = 67.5 hours

8 x 90 minutes = 720 min = 12 hours measurements and medical control (initial phase 8,9,15,16,22,23,28,29 May 2010)

6 x 90 minutes = 540 min = 9 hours measurement and control final phase (September 1, 5, 10, 11, 18, 19)

Game - 13 x 75 min = 975 = 16 hours

TOTAL: 67.5+12 + 9+ 16 = 104.5 hours

Results

Parameters of specific motility:

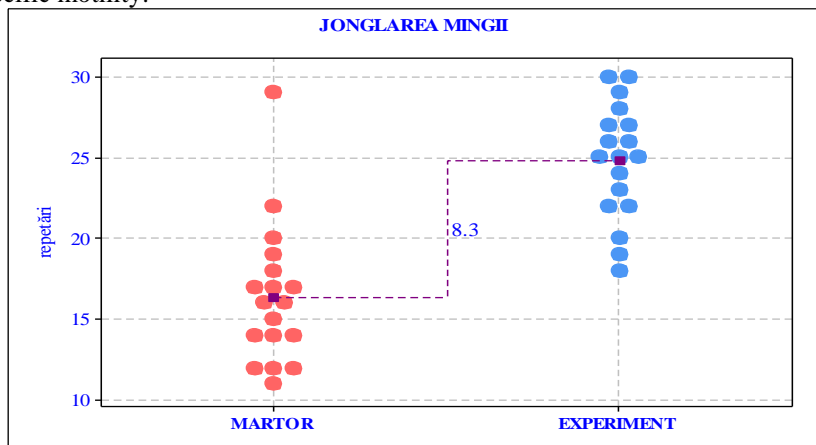


Figure 5. Graphic representation of the parameter "keeping the ball" - control-experiment group

1. Jonglarea mingii = keeping the ball;
2. Repetări = repeats;
3. Martor = control;
4. Experiment = experiment.

The measurements for the characteristic of keeping the ball were performed on the subjects of the two groups at the final tests. The arithmetic averages obtained were 16.39 and 24.78 repetitions respectively. We observe that the average of the experimental group is higher by 8.39 repetitions. The control group is heterogeneous and the experimental group is relatively homogeneous. Cohen's effect size index shows that the differences between the two means are medium to large. The verification of the statistical hypothesis carried out with the ANOVA test, highlights a statistically significant difference between means, $p < 0.05$. The null hypothesis is rejected and the research hypothesis (alternative) is accepted. The graphical representation confirms these statements.

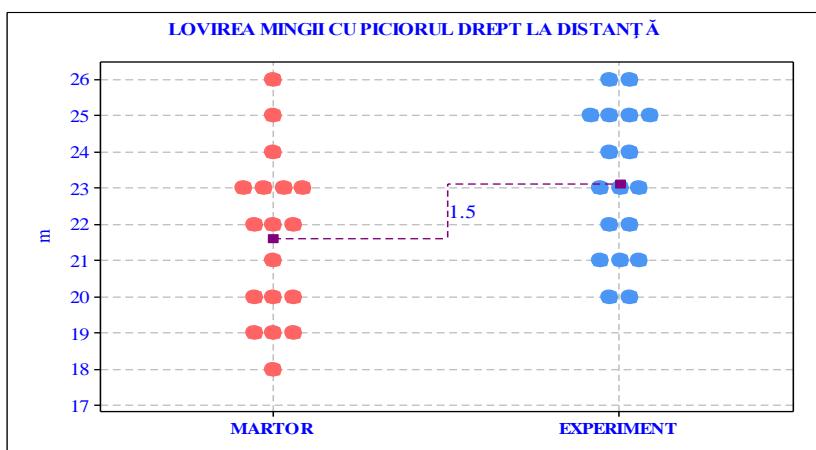


Figure 6. Graphical representation of "kicking the ball with the skillful foot at a distance"

The measurements for the feature HITTING THE BALL WITH THE RIGHT FOOT DISTANCE were performed on the subjects of the two groups at the final tests.

The arithmetic averages obtained were 21.61 and 23.11 m, respectively. We notice that the average of the EXPERIMENT group is higher by 1.50 m. The CONTROL group is relatively homogeneous and the EXPERIMENT group is homogeneous. Cohen's effect size index shows that the differences between the two means are very small. The verification of the statistical hypothesis carried out with the ANOVA test, highlights a statistically significant difference between means, $P < 0.05$. The null hypothesis is rejected and the research hypothesis (alternative) is accepted. The graphic representation confirms these statements – control group – experiment.

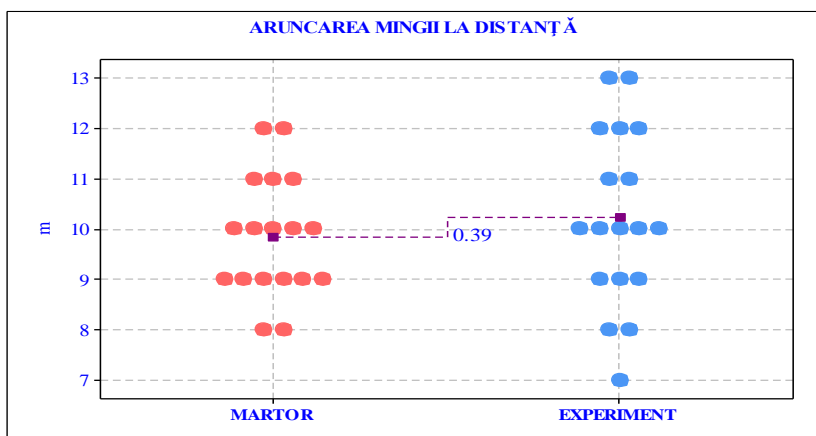


Figure 13. Graphical representation of the parameter "throwing the ball at a distance" - control-experiment group

The measurements for the DISTANCE BALL THROW feature were performed on the subjects of the two groups at the final tests. The arithmetic averages obtained were 9.83 and 10.22 m, respectively. We notice that the average of the EXPERIMENT group is higher by 0.39 m. The CONTROL group is relatively homogeneous and the EXPERIMENT group is also relatively homogeneous. Cohen's effect size index shows that the differences between the two means are very small. The verification of the statistical hypothesis carried out with the ANOVA test, highlights a statistically insignificant difference between means, $p > 0.05$. The null hypothesis is accepted and the research hypothesis (alternative) is rejected. The graphic representation confirms these statements.

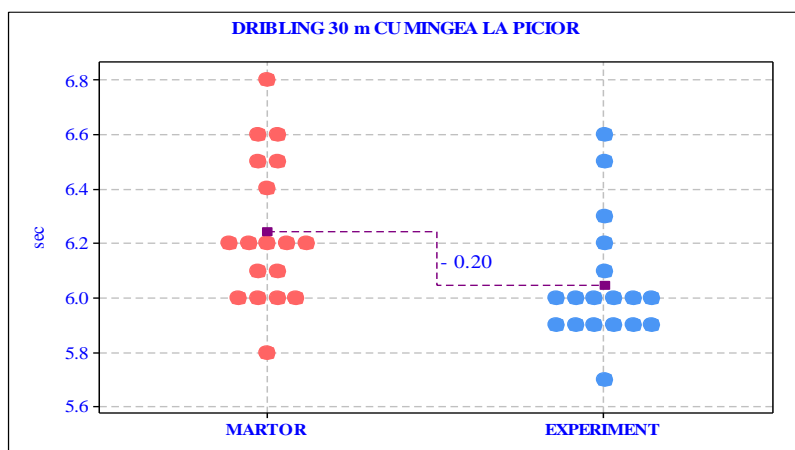


Figure 14. Graphical representation of the parameter "dribbling 30m with the ball at the foot"

The measurements for the 30 m DRIBLING WITH THE BALL AT FEET feature were performed on the subjects of the two groups at the final tests.

The arithmetic averages obtained were 6.24 and 6.04 sec

We notice that the average of the EXPERIMENT group is lower by 0.20 sec.

The CONTROL group is homogeneous and the EXPERIMENT group is also homogeneous.

Cohen's effect size index shows that the differences between the two means are very small. The verification of the statistical hypothesis performed with the ANOVA test highlights a statistically significant difference between the means, $p < 0.05$. The null hypothesis is rejected and the research hypothesis (alternative) is accepted. The graphic representation confirms these statements.

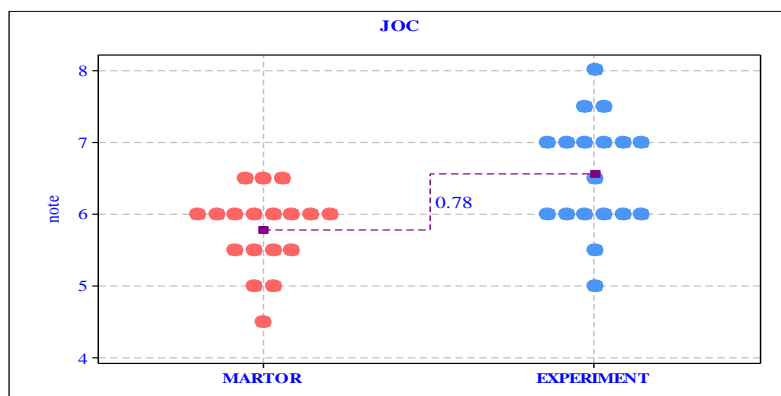


Figure 15. Graphic representation of the "game" - control-experiment group

The measurements for the JOC characteristic were performed on the subjects of the two groups at the final tests. The average grades obtained were 5.78 and 6.56, respectively. We observe that the average of the EXPERIMENT group is higher by 0.78. The CONTROL group is homogeneous and the EXPERIMENT group is relatively homogeneous. Cohen's effect size index shows that the differences between the two means are small to medium. The verification of the statistical hypothesis performed with the ANOVA test, highlights a statistically significant difference between the means, $P < 0.05$. The null hypothesis is rejected and the research hypothesis (alternative) is accepted. The graphical representation confirms these statements.

Table 1. Analysis of statistical data in general motility parameters control group

Parameters	Test	Media	Dif F-I	Ab. Std	Cv	SIZE EFECT	t	p	Research hypothesis
Running speed 10 m	I	2.50	0.01	0.08	4.31	small to medium	4.02	< 0.05	is rejected
	F	2.51		0.05	2.89				
Running speed 20 m	I	3.60	0.02	0.19	3.78	small to medium	1.43	< 0.05	is rejected
	F	3.62		0.17	3.43				
Long jump	I	180.78	4.44	7.19	4.02	small to medium	2.40	< 0.05	is rejected
	F	184.22		10.17	5.23				
Test 4 times	I	13.27	-0.26	0.35	2.56	medium to large	2.95	< 0.05	accepted
	F	13.01		0.51	3.78				
Explosive force	I	33.67	1.00	2,20	0.07	medium to large	3.18	< 0.05	accepted
	F	33.67.		1.75	0.05				
Pushups	I	12.94	0.94	3.78	29.56	medium to large	3.30	< 0.05	accepted
	F	13.89		2.94	21.23				
Crunches	I	18.13	0.98	2.97	16.84	high to very high	4.02	< 0.05	accepted
	F	19.11		2.68	14.62				
Explosive force arms	I	27.99	-0.44	1.67	0.06	small to medium	1,54	< 0.05	accepted
	F	27.45		1.02	0.04				
Running resistance 600 m	I	2.86	-0.12	0.06	2.22	medium to large	3.06	< 0.05	is rejected
	F	2.74		0.07	2.90				
Mobility coxofemoral	I	3.67	0.45	0.64	17.23	high to very high	4.39	< 0.05	accepted
	F	4.12		0.38	9.56				

Table 2. Analysis of statistical data in general motility parameters experimental group

Parameters	Test	Media	Dif F-I	Ab. Std	Cv	SIZE EFECT	t	p	Research hypothesis
Running speed 10 m	I	2.48	-0.08	0.05	2.21	high to very high	5.02	< 0.05	accepted
	F	2.40		0.05	2.79				
Running speed 20 m	I	3.58	0.09	0.16	3.78	high to very high	4.65	< 0.05	accepted
	F	3.49		0.13	2.43				
Long jump	I	173.94	12.67	7.79	4.02	high to very high	9.14	< 0.05	accepted
	F	186.61		10.07	5.23				

Test 4 times	I	13.49	-0.82	0.45	3.56	high to very	6.61	< 0.05	accepted
	F	12.67		0.41	3.78	high			
Explosive force	I	33.28	3.72	2.30	7.11	high to very	9.44	< 0.05	accepted
	F	36.00		1.88	5.22	high			
Pushups	I	12.56	5.00	4.78	38.56	high to very	9.32	< 0.05	accepted
	F	17.56		3.24	32.23	high			
Crunches	I	19.72	2.11	3.27	16.57	high to very	5.85	< 0.05	accepted
	F	21.83		1.68	12.62	high			
Explosive force arms	I	28.99	-0.38	1.67	5.98	high to very	5.25	< 0.05	accepted
	F	28.45		1.02	5.84	high			
Running resistance 600 m	I	2.47	-0.14	0.06	2.42	high to very	8.66	< 0.05	accepted
	F	2.23		0.06	2.38	high			
Mobility coxofemoral	I	3.56	0.67	1.03	27.23	high to very	3.89	< 0.05	accepted
	F	4.22		0.60	14.56	high			

Conclusions

General motor capacity is the main component targeted at this level of training, from the analysis of the results of the statistical data processing, obtained from the measurement of the 10 parameters that were tested by the two groups, the experimental group significantly improved 10 out of 10, and the group control, 6 out of 10. The analysis of the results of the statistical processing of the data, obtained from the measurement of the specific motor parameters, gives us the opportunity to note the positive developments of the experimental group in relation to the control group, in most parameters, although the differences in absolute value are not large. After comparing the results of the two groups with the ANOVA test, the differences are significant in all parameters except for two tests (kicking the ball with the clumsy foot at a distance and throwing the ball at a distance). Therefore, the research hypothesis is accepted at 9 out of 11 parameters. We can also observe that the results of the two groups are mostly relatively homogeneous. Analyzing the results obtained by the experimental group, we can say that by using the multilateral physical training programs, some deficient motor skills were also improved, for example: by working on coordination, the length of the standing jump also improved. By working on the strength, the movement speed also improved. We believe that going through the process of specific motor learning in parallel with those of multilateral physical training is more effective, because it provides a motor platform on which to build: tactical, technical, biological training, etc.

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