

STUDY ON THE MONITORING OF PLAYERS BY USING „CATAPULT ON" IN A SPECIFIC SOCCER TRAINING FOOTBALL MIDFIELD AT U17

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Keywords: *monitoring, catapult on, mezcycle, football, U17*

Abstract:

The study aimed to record, as accurately as possible in terms of volume and intensity, the approach to training from the perspective of meeting specific objectives in the game of soccer, at the level of U17 juniors. The study aims to monitor some specific technical-tactical means of playing soccer that can simultaneously satisfy both physical and technical-tactical objectives. The monitoring of the researched players with specialized equipment - „Catapult On", state-of-the-art with GPS, was the main evaluation method, which was used as a solid foundation of this research.

Introduction

The main goal of this paper was to answer the questions regarding the efficiency of the new methods and means used in the practical sports training sessions of the football discipline, taking into account their European evolution and the visible progress of the European athletes in comparison with the Romanian ones, especially in terms of soccer specific endurance.

Beyond the permanent need to refresh the means used in training, the main purpose of the present research is to create the general framework in order to approach from the perspective of effort parameters, including physical training and in particular new programs to achieve optimal parameters, in the case of U17 juniors, the specific volumes of the football game on the field during the game and during training.

[2,6]

Therefore, the means used in this research will cover both methodical procedures based on volume variation and those based on intensity variation, but especially those based on the "interval methodical procedure". I conclude that this paper deals with a topical and complex subject, but only from a general perspective,

taking into account the realities regarding the number of players included in the study and the limited time of the study. [2,10]

Without claiming to be a relevant study, the paper aims to highlight another type of approach to the development of specific endurance, but also to create the general framework for new studies, from this perspective of a multi-elementary or even multidisciplinary approach to aspects common to performance sport. [3,4,5]

Matherial and method

The "Catapult On" measurement of each individual exercise, through individual testing, gave me the overall picture of the volume and intensity of effort for each exercise. All that remained then was to structure them, according to the data collected, in order to be able to combine the exercises according to the technical, tactical and physical objectives set for each training session. [6,7]

The monitoring of the researched players with specialized, state-of-the-art GPS equipment was the main monitoring method, which was used as a solid foundation of this research. In terms of effort volume assessment, „Catapult On" provided me with objectivity and full confidence that the results and conclusions of the research would be at least accurate and sustainable. [4,5]

The regular measurement of the heart rate of the athletes in the study, both by the classical method and assisted by specific heart rate measurement equipment, provided me with preliminary data, in real time, on the correctness of the choice of the means used during the research.

The periodic evaluations, in order to check the specific resistance parameters and their evolution before, during and at the end of the implementation stages of the specific means established before the start of the research, were also strong points of the research. [1,2]

With such pressure to deliver results, football clubs have come to the conclusion that the head coach and assistant coaches, in fact the classic staff of four or five professionals, cannot effectively cover all aspects of training preparation and delivery.

Physical training, and in particular endurance training, has thus undergone a new approach, one that is very much tailored to the needs of each athlete. Thus, in the staff of each club, at least one specialist called "physical trainer" has now appeared, focused only on the physical preparation of athletes, and with this specialist, programs have also appeared, initially designed for each compartment of the team, and later even individualized according to the needs, characteristics and needs of each athlete. [8,9]

From the point of view of general physical capacity, the athletes were evaluated after the initial testing, by means of three tests. „Test 6x 20+20", „Test Beep" and „Test 2000m".

The Annals of the “Ștefan cel Mare” University of Suceava.
 Physical Education and Sport Section. The Science and Art of Movement
 eISSN 2601 - 341X, ISSN 1844-9131

In this research we used 30 exercises, structured in four main categories: analytical exercises for the development of individual technique, analytical technical-tactical exercises, global technical-tactical exercises, exercises for the development of endurance in speed, strength or agility;

Nr.	Exercise name	Number of the week	Training number
Analytical exercises for the development of individual technique			
1.	Exercise nr.1	S1, S2, S3, S6, S7	A1. A2, A4, A6, A11, A26, A31
2.	Exercise nr.2	S1, S2, S3	A1, A5, A6, A11, A14, A16, A20
3.	Exercise nr.3	S2, S3, S4, S6	A10, A14, A16, A29
4.	Exercise nr.4	S5, S7, S8	A24, A25, A34, A36
5.	Exercise nr.5	S3, S4, S5, S8	A12, A17, A20, A22, A39
6.	Exercise nr.6	S7, S8	A31, A37, A39, A40
7.	Exercise nr.7	S2, S3	A7, A9, A14
8.	Exercise nr.8	S3, S4, S6, S7, S8	A11, A15, A20, A29, A32, A36
9.	Exercise nr.9	S5, S6, S7, S8	A22, A26, A30, A32, A34, A40
10.	Exercise nr.10	S3, S4, S5, S6, S7	A12, A19, A21, A27, A31
Analytical technical-tactical exercises			
11.	Exercise nr.1	S1, S2, S3, S4	A3, A5, A8, A14, A19
12.	Exercise nr.2	S5, S7, S8	A24, A25, A31, A35, A37
13.	Exercise nr.3	S3, S4, S5, S7, S8	A12, A19, A21, A35, A39
14.	Exercise nr.4	S2, S3, S4, S6, S7	A7, A10, A11, A17, A29, A32
15.	Exercise nr.5	S4, S5, S6, S7	A16, A17, A19, A25, A27, A30, A31
Global technical-tactical exercises			
16.	Exercise nr.1	S1, S2	A1, A4, A9, A10

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Physical Education and Sport Section. The Science and Art of Movement
eISSN 2601 - 341X, ISSN 1844-9131

17.	Exercise nr.2	S1, S2, S3	A1, A5, A7, A11
18.	Exercise nr.3	S1, S2, S3	A2, A3, A8, A15
19.	Exercise nr.4	S1, S2, S4, S6	A3, A4, A6, A17, A29
20.	Exercise nr.5	S1, S2, S3, S5, S6,S7	A1, A2, A9, A15, A22, A30, A34
21.	Exercise nr.6	S1, S2, S3, S6	A4, A6, A8, A12, A27
22.	Exercise nr.7	S1, S4	A2, A3, A16
23.	Exercise nr.8	S5, S6, S7, S8	A21, A24, A29, A31, A36, A39
24.	Exercise nr.9	S5, S6, S7, S8	A24, A26, A30, A35, A37, A40
25.	Exercise nr.10	S5, S8	A22, A37, A40
Exercises for the development of endurance in speed, strength or agility			
26.	Exercise nr.1	S1, S2, S3, S4, S5	A5, A7, A15, A19, A21
27.	Exercise nr.2	S4, S5, S6	A20, A24, A30
28.	Exercise nr.3	S2, S7, S8	A10, A32, A39
29.	Exercise nr.4	S2, S5, S8	A9, A25, A37
30.	Exercise nr.5	S6, S8	A26, A36, A40

Table nr.1 - COMPARISON OF RESULTS „TEST 6 x 20 + 20m,,

Nr	N.P.	Initial testing (minute)				Final				Dif. %
		testing (minute)		%	T.1.	T.2.	Dif.+ /-		%	
T.1	T.2	Dif.+ /-								
1.	B.M	7.33	7.39	+0.06	0.87	7.30	7.33	+0.03	0.44	-0.43
2.	B.N.	7.05	7.31	+0.26	3.68	7.06	7.14	+0.08	1.13	-2.55
3.	C.H.	8.49	8.77	+0.28	3.29	8.09	8.19	+0.10	1.23	-2.06
4.	D.L.	7.16	7.59	+0.43	6.00	7.14	7.29	+0.15	2.10	-3.09

The Annals of the “Ștefan cel Mare” University of Suceava.
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eISSN 2601 - 341X, ISSN 1844-9131

5.	I.F.	8.18	8.49	+0.31	3.78	7.63	8.12	+0.19	2.49	-1.29
6.	M.C	9.02	9.21	+0.59	6.84	8.12	8.44	+0.32	3.94	-2.90
7.	P.A.	8.08	8.05	+0.37	4.81	7.63	8.27	+0.24	3.14	-1.67
8.	P.S.	7.01	7.26	+0.25	3.56	6.93	7.06	+0.15	1.87	-1.69
9.	S.A.	7.37	8.05	+0.28	3.79	7.16	7.21	+0.05	0.69	-3.10
10.	S.F.	7.13	7.34	+0.21	2.94	7.10	7.16	+0.06	0.84	-2.10
11.	T.R.	7.54	8.14	+0.20	2.65	7.45	8.03	+0.18	2.41	-0.24
12.	Ț.Ș	7.14	7.29	+0.15	2.10	7.14	7.23	+0.09	1.26	-0.84
Media		7.51	8.19	+0.28	3.69	7.35	7.48	+0.13	1.79	-1.83

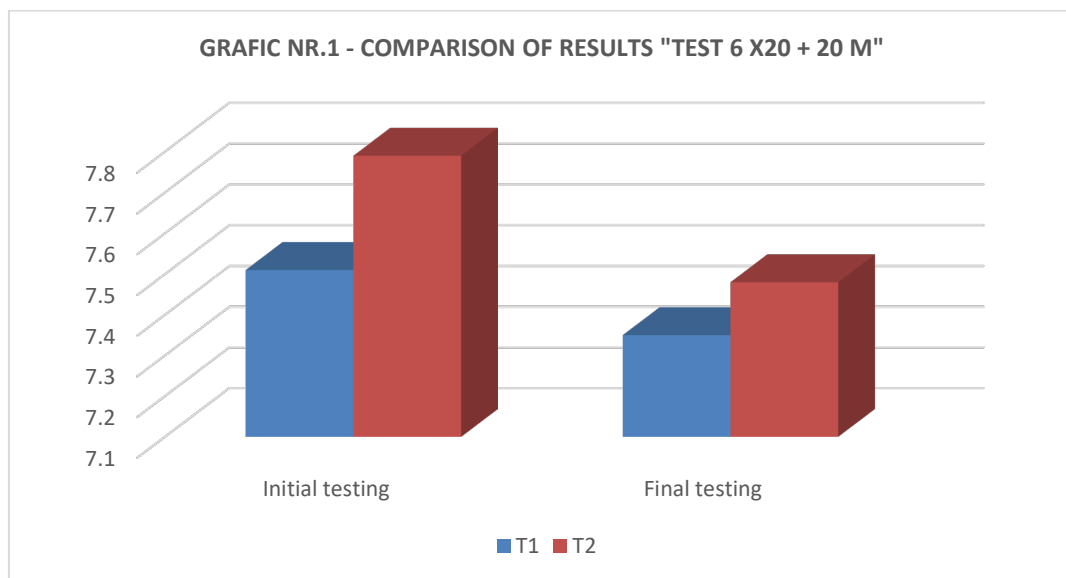


Table nr.2 - COMPARISON OF RESULTS „TES BIP,,

Nr.	N.P.	Initial testing (minute)		Final		Dif. +/-
		Level	Time	Level	Time	

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1.	B.M.	11	11.44	13	14.12	+2.68
2.	B.N.	10	10.42	12	13.38	+2.96
3.	C.H.	9	09.49	11	12.02	+2.53
4.	D.L.	8	08.54	11	11.46	+2.92
5.	I.F.	10	11.13	11	12.29	+1.16
6.	M.C.	7	08.18	10	10.56	+2.38
7.	P.A.	9	09.42	10	11.11	+1.69
8.	P.S.	8	09.11	10	11.21	+2.10
9.	S.A.	10	10.34	11	11.58	+1.24
10.	S.F.	9	10.12	11	12.17	+2.05
11.	T.R.	10	11.07	12	13.07	+2.00
12.	Ț.Ș	9	10.27	11	12.29	+2.02
Media		9.16	10.36	11.08	12.10	+1.66

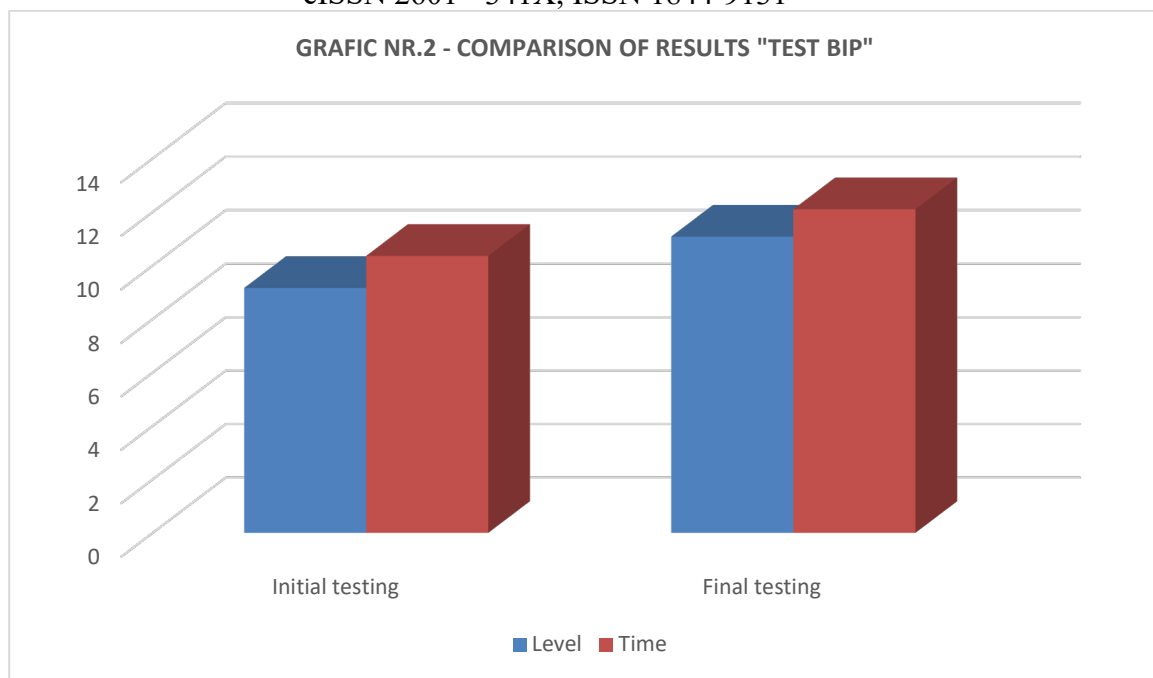
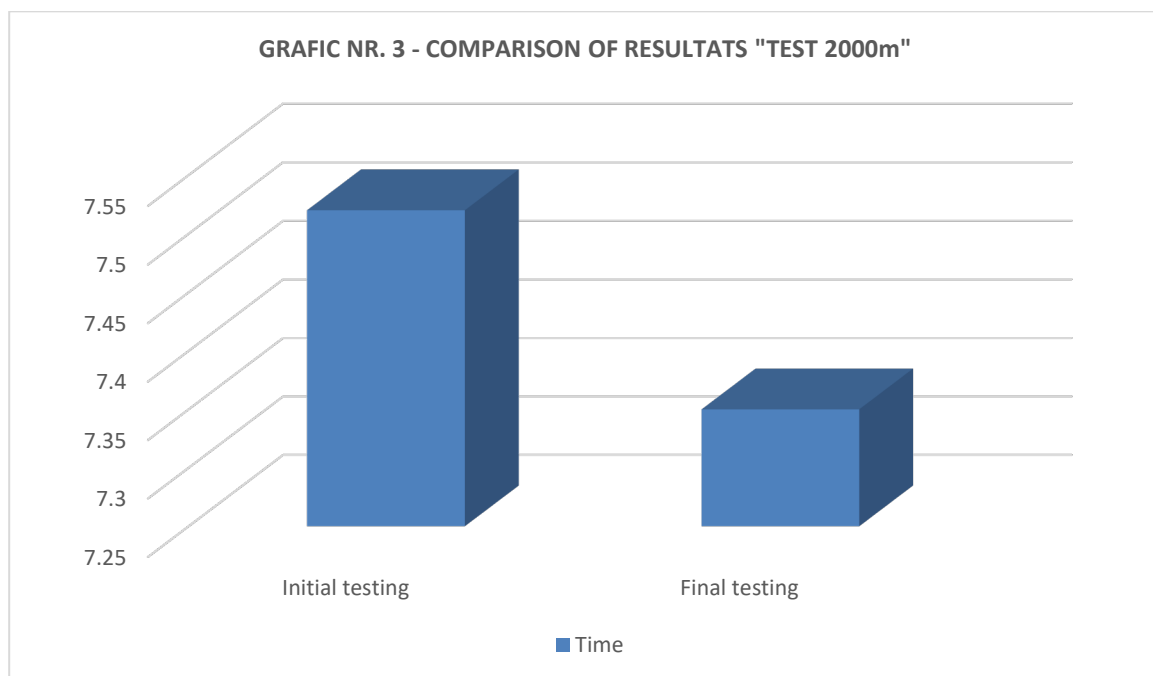


Table nr.3 - COMPARISON OF RESULTS „TEST 2000m,,

Nr.	N.P.	Initial testing (minute)		Final testing	
		(minute)	Dif.	(minute)	Dif.
				+/-	
		Time		Time	
1.	B.M.	07.51		07.36	-0.15
2.	B.N.	07.48		07.42	-0.06
3.	C.H.	08.02		07.44	-0.18
4.	D.L.	07.45		07.38	-0.07
5.	I.F.	07.48		07.33	-0.15
6.	M.C.	07.44		07.19	-0.25

7.	P.A.	07.53	07.37	-0.17
8.	P.S.	07.51	07.41	-0.10
9.	S.A.	07.46	07.34	-0.12
10.	S.F.	07.42	07.38	-0.04
11.	T.R.	07.49	07.33	-0.16
12.	Ț.Ș	07.48	07.24	-0.24
Media		7.52	7.35	-0.14



Conclusions

The results recorded at the end of the training programs, through the „6 x 20+20m Test" „Beep Test" „Beep Test" and „2000m Test" showed a quite significant increase in all the athletes participating in this study.

With the test, „6x20+20m” we noticed a decrease in the time difference between the first and the last run, on average by -1.48 sec, which shows a better increase in endurance for uniform distance and high intensity efforts.

In the „Bip” tests we found an average increase by +1.56 min, which shows that integrated training facilitates better endurance over the same distance but progressive in intensity.

In the 2000 m test, we found an average decrease in time of -0.10 min, which shows that in the case of endurance over a long distance, the classic running program is more effective.

Taking into account the results obtained by comparing the data, both on average between the two groups, as well as between themselves and at the individual level, we extracted some strengths but also weaknesses of the soccer-specific endurance development program through training: increased endurance to intense and repeated efforts over short distances; increased endurance to progressive efforts in terms of intensity over short distances; increased time for the preparation of the auxiliary materials; the risk of not reaching the targeted parameters in the case of global technical-tactical exercises; increased motivation and emotional stability in training; increased time dedicated to technical-tactical exercises;

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