

# THE DYNAMIC OF MOVEMENT INDICATORS IN SPEED TASK, COORDINATION, MOBILITY AND RESISTENCE ON THE JUNIOR SEMIFOND RUNNERS III (14-15 YEARS) BASED ON THE ESTABLISHMENT OF AN OPTIM REPORT BETWEEN THE VOLUME AND THE INTENSITY OF THE EFFORT DURING AN YEAR OF TRAINING

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## Abstract

*The results obtained from the runners included in the experiment demonstrates the superiority of the workout with influence mainly different compared with narrow specialization in preparation of the 14-15 years old middle-distance race runners along a competitive year.*

**Key words:** *physique effort, physic effort, training , the volume of the effort, the intensity of the effort*

## INTRODUCTION

Physical preparation means, from the perspective of the sportive training, the necessary support of the manifestation of all the elements of the training [Ardelean T. 1990, Bompă T. 2001, Dragnea A., Teodorescu S.M.2002, Pradet M. 2000]. The high level of the performance in sport is due especially, to the increasing of the complexity of methodology of training, especially through a bigger efficiency of the didactic projecting and planning [ Bompă T. 2001].

The physical preparation, constitute, from the sportive training perspective, the necessary support of manifestation of all elements of training. [Gârleanu D.1997]. The high level of the performance in sport, is owe, to the raising of methodology of training , especially through a bigger efficiency of projecting and planning.

According to the actual results, in the semifond tasks, we can see that the training for this tasks, was spun off the training for the fond tasks, the semifond becoming more and more an „extended sprint.” [Mihăilescu L. (2010)]

## HYPOTHESIS

The main objective of this work, it is constituted by the determining the optimum between the volume and the intensity of the effort, in different stages of the training, the evolution of this parameters and the way how this alternation gets to the sportive shape.

**THE PURPOSE OF THE RESEARCH :** it is constituted by the perfecting and the scientific argumentation, of efficiency of the process of physical preparation of the semifond runners, of 14-15 years, by using the ways of training with different influence, comparative with those of

restricted specialization in the junior preparing III (14-15 years), during on an annual cycle of training. From this results it can be seen the weak and the tough points in the preparation physic of the semifond runners, and were should be actioned to obtain the competitive results of today performances.

## THE RESEARCHING TASKS

- Studying physical training of the semifond runners.
- The elaboration and argumentation of the more efficient ways of physical prepare of semifond and their repartition in annual cycle.
- The pedagogic experiment argues the efficacy of methods for physical preparation of junior semifondists III of 14-15 years.

The measuring and recording of the data was realized in standard conditions for both samples and it had followed the dynamics highlighting evolution of both groups verified, about the performances obtained on the complex of physical tasks applied. The static interpretation of the results permitted the comparing of this data and it have answered at the questions about the signification of the difference resulted between the initial tests and the final ones, on the level of the of each group. (witness and experiment). The performances obtained at the 10 force task (separated on groups and sexes) there are detailed and continue to highlight the intake and the importance of the experimental schedule applied.

## METHODS OF RESEARCH USED ARE:

- The art of literature scientifico-methodic of speciality, investigation based on questionnaire and interview: in the study it have been used a method to obtain in a short period of time a big volume of information according to coaches opinions in the “Scholar

sportive clubs" in country, according to the level of the resistance, mobility and coordination training of the juniors of 14-15 years, runners for semifond.

- The pedagogic observation: the method of measurements and of tests: it was applied a battery of 8 tests which have to reflect the levels of the resistance preparation of the semifond runners of 14-15 years.
- The pedagogic experiment: any experiment suppose the creation of a new situation by implementing of some modifications on each factor level (that constitute an object of research), the rest of the factors (conditions), remain unaltered ( the same in the case of the standard activity- witness group ).

In this way it is highlighted the action (influence of the factor modified over the results of the entire process. The first steep (the constative experiment) it have been effectuated on a group of 30 semifond junior runners III (14-15 years), continue two groups of each 15 athletes (the witness group), and 15 athletes (the experimental group) the juniors III (14-15 years) from C.S.S-L.P.S Galati and C.S Cehlaul Piatra Neamt following the testing of the athletes from the physical point of view. All data obtained have permitted the choosing of the most efficient ways according to physical preparation. The second steep fixed on the axis of the basic experiment have permitted the evaluation of the efficiency of the program of preparation proposed, with preponderant influence different comparative with those of specialization, narrow the preparation of the junior semifond runners III (14-15 years).

#### INDICATORS OF PHYSICAL TRAINING:

Coxo-femoral mobility in the sagittal plane (anterior-posterior). From sitting on a stand with the feet at its edge, it takes place the flexion (bending) of the trunk forward with knees fully stretched, with fingers slipping on the peaks of a ruler with 0 gradation up and with the support of 50 cm. The position is held 2 seconds without being permitted number of archings and it reads the number of inches that are added at the gradation 50 from the base. It is given two attempts, recording the better one; *the scapulo-humerus mobility*. From sitting with a stick held far back with both hands (palms in pronation), the perfect arms are stretched out in front of the trunk. It takes place the position of the arms perfectly stretched above the head toward the back, until the stick touches the pelvis. Then the movement is carried out in reverse, which it's returning at the initial position. It is repeated the movement until gradually approaching the palms on the stick, this can no longer be carried out correctly and italic. It measures and records the distance in inches between the distance of the palms from the last correct execution (without bending the elbows); *the running resistance 1000 m*: the running is one

time. The result is expressed in minutes and seconds; *the running resistance 3000 m*: the running is one time. The result is expressed in minutes and seconds; *the running 800 m*: the running is one time. The result is expressed in minutes and seconds; *the running resistance 1500 m*: the running is one time. The result is expressed in minutes and seconds. *50m running*. It is executed individual with start from a stand-up position, a start to whistle, straight and on a flat ground, it is measured from the first movement in seconds and tenths of a second; it is executed only one time; *the nave 5x 10m*. At the signal, the performer (situated behind the line) runs with the highest speed to the next line situated at 10m by the first line. It is executed for 5 times, at the last one the run is continued to the end without reducing speed. The test is executed for one time. The time is measured in seconds. It is necessary a nonskid ground and equipment; the pushups: from lying face position leaning with arms by the gymnastics bank, the arms and body stretched, it is executed bending arms until approaching the chest to the bank after that it is returned to the initial position. The number of executed repetition is noticed.

Statistical-Mathematic Methods of calculation and interpreting of the results: it was realized the processing and the interpretation of the data obtained through the Microsoft Office Excel 2007 program, using the student test, for independent samples and interpreting the semification of the difference registred.

In the development of the experimental program it counted the period of preparing on which was structured the base of the competition schedule. So the training it was structured on two periods of preparation autumn-winter, spring-summer. The table below express the results registred behind the implementation of an experimental program, accompanied with the values of the student test and the significant thresholds. In the case of the initial tests, the differences between the medium values of the performances obtained, of two groups are insignificant ( the values of t correspond to some semification rapids  $P > 0,05$ , for all the tests used).

On the task of coxofemoral mobility, the girls from the experimental group, presents a medium value of the final of 64,64 cm, bigger than the initial media of 58,73 cm, resulting an difference of 5,91 cm. the signification of the difference expressed by ( t calculated )=3,60, value bigger than ( t tabled ) =2,977, the difference being significant ( $P < 0,01$ ).

The scapular-humeral mobility on the girls of the experimental group has a medium value finale of 69,70 cm, lower than the initial media of 79,93 cm, resulting a difference between 7,23 cm. the signification of the difference expressed through ( t calculated )= 3,89 value bigger then ( t tabled )= 2,977, the difference being significant ( $P < 0,01$ ).

On the pshysic test the speed running -50 m, the girls from the experimental group obtain a medium final time of 7"39, lower than the initial of 7" 60, resulting an difference of 0"21. The calculation of

the significant of the difference it is expressed through (t calculated) =4,20, value bigger than (t tabled)=4.140 the difference being significant (P < 0,001).

**Table 1. The significance of the difference**

Nr. crt	The test	Experiment group n=15		t	P	Witness group n=15		t	P
		Initial test	Final test			Initial test	Final test		
		$\bar{X}_{in}$	$\bar{X}_{fin}$			$\bar{X}_{in}$	$\bar{X}_{fin}$		
1	the coxo-femoral mobility (nr.rep.)	58,73±1,76	64,64±1,71	3,60	< 0,01	58,20±1,75	59,61±1,76	0,85	> 0,05
2	the scapulo-humerus mobility	76,93±2,05	69,70±1,88	3,89	< 0,01	77,13±2,06	75,75±2,04	0,71	> 0,05
3	50 m running	7,60±0,06	7,39±0,04	4,20	< 0,001	7,62±0,06	7,52±0,05	1,89	> 0,05
4	the nave 5x 10m.	14,41±0,20	13,69±0,17	4,00	< 0,01	14,53±0,22	14,28±0,21	1,25	> 0,05
5	détente	38,66±0,96	42,24±0,91	4,07	< 0,01	38,60±0,98	39,46±0,97	0,93	> 0,05
6	decajump	1250,6±28,02	1309,3±29,05	4,03	< 0,01	1233,33±25,1	1324,66±16,2	1,32	> 0,05
7	the running 1000m	195,00±1,44	190,35±1,15	3,72	< 0,01	195,24±1,43	191,16±1,42	0,81	< 0,05
8	the running 3000m	642,95±3,35	634,02±3,01	2,96	< 0,05	643,21±3,37	640,87±3,36	0,61	> 0,05
9	the running 800 m	138,65±1,36	135,49±1,37	2,15	< 0,05	136,79±1,08	133,62±0,96	2,14	< 0,05
10	the running 1500 m	297,33±1,62	292,41±1,43	2,82	< 0,05	298,56±1,25	293,66±1,21±	2,30	< 0,05

Notă: n – 15, f – 14: P - 0,05; 0,01; 0,001  
 t - 2,145 2,977 4,140

On the down-and-up-train 5x10 m, the girls of the experimental group, obtain a final medium time of 13"69, lower than the initial one 14"41, resulting an difference of 0"72. The gravel of the difference significance it is expressed through (t calculated)= 4.00, value > than (t tabled)=2,977, the difference being significant (P < 0,01).

For the expansion , the medium final result of the girls from the experimental group is 42,24 cm, bigger than the initial one , that of 38,66 cm , resulting an difference of 3,58 cm. the significant of the difference result from the expression of (t calculated) = 4,07, value > than (t tabled) = 2,977, the difference being significant (P < 0,01).

For pentajump , the final medium result from the experimental group is of 946,08 cm bigger than the initial one, that of 898,33 cm resulting an difference of 47,75 cm. the significant of the difference result from expressing through ( t calculated)=4,04, value > than (t tabled)= 2,977, the difference being significant (P < 0,01).

For decajump, the final medium result of the girls from the experimental group is 940,08 cm , bigger than the initial one, resulting an difference of 47,75 cm. The significant of the difference expressed by (t calculated) =4,03, value > than (t tabled) = 2,977, difference significant (P < 0,001).

Regarding the 1000 meters running , the girls from the experimental group obtain a final medium value of 190 " 35, lower than the initial

medium value, and it is expressed through ( t calculated) =3,72, value > that ( t tabled) = 2,977, the difference being significant (P < 0,01).

On the physical test the 3000 meters running, the girls from the experimental group obtain a medium final value of 634"02, lower than the initial medium value of 642" 95, resulting an difference of 8"93. The calculation of the significant of the value it is expressed through (t calculated) =2,96, value > than (t tabled) = 2,145, the difference being significant (P < 0,05).

The battery of tests used, was very diversified, to capture many forms of manifestations, of driving qualities and their combinations.

The development and the application of the experimental program led to better results in the experimental group, from the point of view of the resistance training, coordination and mobility of the runnings on an average of 14-15 years.

The growth of the lodges indices revealed through the using of the criteria of the "t Student " test, tested on the beginning of the experiment, and those on the final of the experiment show, that it is significant on all the samples, that show us that the strategy used for the pedagogical experiment can be successful applied by coaches.

## CONCLUSION

Through the experimental research, it have been confirmed the hypothesis that supposed that the

changing of the accet, in the direction of using of training means in the general preparation , with preponderant influence , different comparative with those narrow specialize, in the preparing of the semifond junior runners III (14-15 years) through the reduction of the volume of the effort, from the mixt zone, and the increasing of these in the sportive mastery, but it will allow , of course the avoiding of the forced preparation on this stage of the multiannual training.

The results of the experimental researching, have confirmed the fairness of the general physical training , of the didactic strategy used by us on this level of training through the fact that, through this have been obtained similar results in the semifond results , respectively 800 m and 1500 m , but with superiors indicators, according the other samples, targeting general physical training , and that that will represent the foundation on wich it will be developed the best results in the superior stage of training of the semifond runners.

All the athleets have optimized their performance in this task , and this thig have been proved scientif , through statistics indicators determined , through the criteria "t " Student and the linear correlations established through independent variables, manipulated trough the metodoligy of general physical training, and the dependente variable , resulting from the task.

Between the initial results and the finals one of the experimental group there are several thrutful differences, under the level value of 0.05 on the 3000m running, 800 m running , and the 1500 m running , de 0,01 for push-ups , maintained in hanging, the rasing of the legs from supine, throwing of the medical ball forward, throwing of the ball backward, coxo-femural mobility, scapula-humerous mobility, the commute, the expansion, the pentajump, the decajump, 1000 m running, while for the raising from the lying, the raising of the trunk from facial lying, speed running 50m and the bounce off place, the thrutful differences are under the value level of 0,001.

Even if the results, in the 800 m and 1500 m task, are similar to the final results of the experimental group, are superior of the control group according to control tasks that target the physical preparation of the runners.

In all the calculated parameters the athlets from the experimental group presents values raised on the final test, according with the values obtained on the beginging of the experimnet.

There are no significant differences according the initial results between the experimental group and stand –by of the control tasks applied.

The athelets from the experimenta group, on the final testing, are presenting the best results, on all the control task, comparative with the initial testing. In most control tasks there are significant raisings, between initial and final testing ( $P < 0,01$ ) fact that shows the effectiveness of the methote applied by us.

So, according to the result of the researches, it has been shown that is necessary the rethinking and restructuring of the general physical training of the semifons runners, and this thing determines the obtaining of some similar results, according to all the competitional task, and assures a better physical training.

The methodology of training, was elaborated by the author after the prior researches, applied in the process of the training of these semifond junior runners in the initial training phase from Romania, revealed the efficacy of the methodic ways of the general physical training, that is very importanta, and is the bassis for future bigg performances.

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