

THE STUDY ON DEVELOPMENT OF RESISTANCE IN THE LICEAL CYCLE

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Abstract: The purpose of this paper is to study and find the most effective methods and means specific to athletics for the development of the general resistance of high school students, respectively for the Xth grade.

It is assumed that the use of methods and means specific to athletics in the physical education and sports lessons, to X-class students, will lead to the improvement and development of the driving ability resistance.

Introduction: Resistance is the ability of the body to perform a mechanical work of a certain intensity, for as long as possible, without decreasing the efficiency of the activities (A. Demeter, 1981, A. Nicu, 1996). The development of resistance must be considered a priority task of physical and sports education, having a direct influence on the individual's ability to work, a matter of great social importance.

It can be developed within fairly wide limits by acting on it in the special educational-educational process organized in this respect. Resistance, being closely related to respiratory and cardiovascular systems, requires a careful choice of the appropriate method, because a wrong dosage of intensity or volume can have quite serious consequences on the young.

Material-method: The research was carried out in Fălticeni, at the "MIHAI BĂESCESCU" Technical College, in the 10th grade, in the school year 2018 - 2019. The accessibility of methodical methods for the development of resistance at the level of high school education, especially in the 10th grade, should be carefully considered. It is a matter of applying an effort to subjects aged 15-16, an age that implies certain psychosomatic and functional-morphological changes during this period.

In principle, all procedures are accessible if they are used with care in the effort. Regarding their nature, usually exercises used to

develop resistance are not complicated, which allows students to practice. (Kodzabasisa Igor, 2001). Making and dosing exercises should be done according to the students' level of preparation and development, the material basis and the objectives proposed in the lesson. (I. Săvescu, 2007)

To complete the experiment, use the following methods:

- **the method of uniform efforts** – when exercising the same intensity and increasing the volume (expressed by duration, distance, number of repetitions, etc.) in the same activity or from one activity to another (lesson, physical activity of maintenance, etc). (Gh. Cârstea, 1999).

In accomplishing this method we used the following exercises:

- 1) Running in uniform tempo on groups of 8-10 students, on distances of 150-200 m; 2-3 repetitions, active pause 1-2 minutes;

- 2) On groups of 8-10 students, in a row, 300-400 m running at uniform tempo, 1-2 repetitions, active pause 2-3 minutes;

- 3) Running in varied tempo in unordered tempo over distances of 400-500 m, 2-3 repetitions, active pause 3-4 minutes.

- **method of repeated efforts** – when the intensity of physical effort remains constant but is carried out with a number of repetitions increasing in the same effort unit (distance or duration). (Gh. Cârstea 1999)

In doing this we used the following exercises:

- 1) Students on groups of 8-10, running semifond stepped running in a tempo set at 200 meters distance, 3-4 repetitions, active pause 1-2 minutes;

- 2) Students on groups of 8-10, run semifond stepped race in a tempo set at 200 m distance, 6 repetitions, active pause 2-3 minutes;

- 3) The same exercise but at 300 m distances, 4 repetitions, active break 2-3 minutes.

- **the Fartlek method** – is based on the alternation of different trekking tempers, also called speed-play; consists in increasing the intensity of the effort at certain times of effort (alternating uniform run with short portions / durations executed with greater intent. (G. Rață, B.C. Rață, 2006)

In doing this we used the following exercises:

- 1) Students divided by groups of 8-10, running at a beep, running at moderate tempo 150m, then 50m accelerated treble pace 3/4 (intensity 75-80%), 3-4 repetitions, 1-2 active pause ;

2) Students divided into groups of 8-10, run at sound, running at moderate tempo 300m, then 150m accelerated treble speed 3/4 (intensity 75-80%), 2-3 repetitions, active pause 2-3 minutes;

The student's assessment of resistance will be planned by the teacher and in the 10th grade will include the running of the distance of 800 m in girls and 1000 m in boys.

Evaluation scale of the resistance run in the 10th grade is the next:

Sex	Performance achieved for the notes					
	5	6	7	8	9	10
Female	4'35"	4'30"	4'25"	4'20"	4'15"	4'10"
Male	4'35"	4'30"	4'25"	4'20"	4'15"	4'10"

Results and discussions: We used the following control samples:

- ***Running in the distance of 800m females and 1000m male*** – in both samples the start is taken from the top of a starting line. At the 800 m test, it is taken from the straight line and at the 1000 m is taken from the turn and the run runs flat. Control samples are performed on groups of 5-6 pupils. It is forbidden to travel by walking during the test. Time is recorded in minutes and seconds for both female and male.

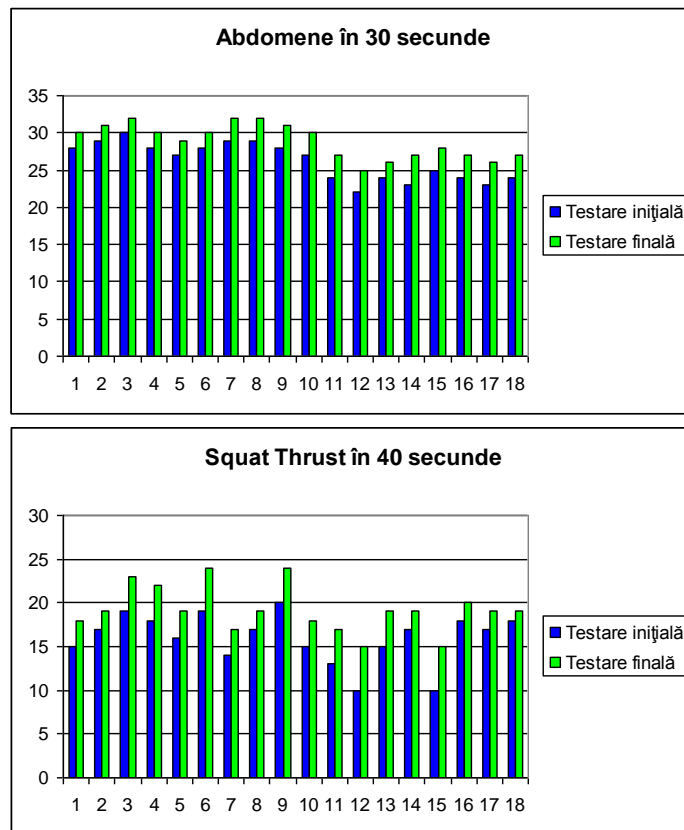
- ***Trunk lifts from the back (abdomen)*** - from the dorsal position with hands on the nape, the knees bent at 45 ° and the soles fixed to the ground: truncates rising to 90 ° and returning to the initial position. Record the maximum number of repetitions in 30 seconds.

- ***Squat Thrust*** (of the squat vertically jumping with extended arms followed by squatting and extension in the position of flotations with support on both palms) - standing on both legs is moved to a squat position with his palms on the ground, jumping backwards with the stretching of the legs and extension of the trunk with a squinting, followed by a jump on both legs with the extension of the arms and trunk and returning to the initial position. Record the number of repeats performed in 45 seconds.

The results obtained in the control samples in the initial and final testing within the experiment group:

X= Arithmetic mean;
 S= Standard deviation;
 Cv= Coefficient of variability;

Nr. Crt.	INITIAL Name/ First name	Sex	800 m (min)		1000 m (min)		Abdomen in 30 "(nr./rep.)		Squat Thrust în 45" (nr./rep.)	
			T.I.	T.F.	T.I.	T.F.	T.I.	T.F.	T.I.	T.F.
Alergare pe 800 m feminin										
1.	C. D.	M	-	-	4,18	4,10	28	30	15	18
2.	P. A.	M	-	-	4,05	3,55	29	31	17	19
3.	R. S.	M	-	-	4,10	3,59	30	32	19	23
4.	G. B.	M	-	-	3,47	3,38	28	30	18	22
5.	T. V.	M	-	-	4,02	3,51	27	29	16	19
6.	S. F.	M	-	-	3,57	3,46	28	30	19	24
7.	L. L.	M	-	-	4,04	3,55	29	32	14	17
8.	N. D.	M	-	-	3,55	3,42	29	32	17	19
9.	Z. C.	M	-	-	4,00	3,50	28	31	20	24
10.	H. B.	M	-	-	3,58	3,49	27	30	15	18
11.	D. E.	F	4,10	4,05	-	-	24	27	13	17
12.	R. M.	F	4,04	3,57	-	-	22	25	10	15
13.	B. R.	F	3,56	3,48	-	-	24	26	15	19
Alergare pe 1000 m masculin										
14.	M. A.	F	4,00	3,50	-	-	23	27	17	19
15.	P. I.	F	4,03	3,55	-	-	25	28	10	15
16.	A. O.	F	3,47	3,38	-	-	24	27	18	20
17.	I. S.	F	4,07	4,00	-	-	23	26	17	19
18.	S. M.	F	4,00	3,53	-	-	24	27	18	19
19.	X. S.	M	3,91	3,63	3,86	3,56	26,22	28,89	16,00	19,22
20.	S. C.	M	0,23	0,23	0,28	0,20	2,48	2,23	2,77	2,55
21.	C. V.	M	0,06	0,06	0,06	0,07	0,09	0,09	0,17	0,13



Conclusions: The collected and then statistically mathematical data were staggered, giving a synthesis of the main values considered. Based on these tables, I went over to analyzing and interpreting the data.

Regarding the development of the driving ability, we have selected three samples to which all subjects were tested, once at the beginning of the experiment and once at the end, and the analysis revealed the following:

Sample 1 - Running resistance on a distance of 800 m for the female and 1000 m for the male.

At the 800 m sample, the experimental group in the initial test had an average of 3.91 seconds, and the final test was 3.63 seconds, achieving an improvement of 0.27 seconds. At the 1000 m sample, the experimental group on the initial test had an average of 3.86 seconds and the final one 3.56 seconds, achieving a progression of 0.30 seconds.

Sample 2 - Trunks from the back (abdomen) in 30 seconds.

In this sample, the experimental group at baseline testing had an average of 26.22 reps, and at the final 28.89 reps. The difference between the initial and final testing of the experimental group is 2.67 repeats.

Squat 3 - Squat Thrust (crouching upright jump with extended arms followed by squatting and extension in flotation position with support on both palms).

Subjects in the experimental group had an initial trial of an average of 16 repetitions and the final of 19.22 repeats, thus achieving a 3.22 repeat progression.

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STUDIUL PRIVIND DEZVOLTAREA REZISTENȚEI LA CICLUL LICEAL

Keywords: metode, rezistența, ciclul liceal

Abstract: Scopul acestei lucrări prezintă studierea și găsirea celor mai eficiente metode și mijloace specifice atletismului pentru dezvoltarea rezistenței generale a elevilor din ciclul liceal, respectiv pentru clasa a X-a. Se presupune că folosirea metodelor și mijloacelor specifice atletismului în lecțiile de educație fizică și sport, la elevii clasei a X-a duc la îmbunătățirea și dezvoltarea aptitudinii motrice rezistența.