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ORIGINAL RESEARCH

THE CORRELATION BETWEEN THE PHYSICAL TRAINING AND THE SPORT PERFORMANCES IN SPEED SKATING AT CHILDREN

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Abstract

Sport practice at an early age is a problem of high actuality, this being debated intensely by specialists, the solving of the problem in cause being appreciated as a highly important factor in the general conception of the complex process of sport practice, in this process a very important role being held by the physical training.

The present paper approaches the complex problem of the connection between the physical training and the sport performances at children through an experiment realized on 6 speed skaters, 4 boys and 2 girls, with ages of 8-9, experiment that had as purpose the demonstration of the importance of the multilateral physical training at skaters of an early age, of course without excluding the importance of the other factors necessary for superior results.

Through the obtained results we proved that there is a direct connection between the physical training and the sport performances at children, knowing that the superior results in speed skating, on a long period, depend also by the training quality at an early age.

Key words: correlation, physical training, sport performances, speed skating.

Introduction

As we already know, the sport practice at an early age is an actual problem and intensely debated by the specialists, the specialty literature lately starting to pay sufficient attention to this problem which is rather delicate, its solving being appreciated as a highly important factor in order to obtain top results at a worldwide level.

Renato Manoo (1996) defines sport practice as being “a complex process of intervention, of which purpose is to learn and improve the technique, under the simple or chained form, for an individual, a group or a team, and that aims at the development of the physical-psyche allowing to reach certain maximum sport performances, taking into account the subject’s, group’s or team’s potential” [4, pg. 26].

Also, Dragnea A. (2002) considers that the process of sport practice as “a complex process developed systematically and continuously gradual, of adaptation of the athlete’s organism at intense physical and psychic efforts, implied by his participation in competitions” [1, pg. 155].

Children, in general, present differences considered rather important both from the corporal constitution point of view and from the aptitudes, attitudes etc. It is considered that the main factors that determine the success in the performance sport are: the availability for performance, the physical aptitudes, the social environment, motivation etc.

At the same time, practice at an early age, and not only, can be understood as “a progressive reaction at systematic changes in the practice task and the determination of certain changes in the physical condition (*fitness*) and the fatigue level” [2, pg. 131].

It is considered that the tendency to lower the selection age has been made on the basis of perfecting the sport orientation systems and of motor evaluation also of the improvement of training methods and techniques [4, pg. 173].

The training of athletes of an early age must differ from the one of adults, the main characteristics of this complex process being [3, pg.69]:

- Training stages must be different from the adults' ones.
- The division into periods of the practice must be adapted and planned according to age particularities.
- Practice must not surpass the true needs of athletes.
- Sport practice at an early age must be adapted depending on the development and the maturity of the respective athlete.
- An inadequate motivation can lead to the progressive decrease of athlete's interest for the respective sport branch.
- The appearance and perpetuation of a stress state has as result the faulty learning of the technique, also the maintenance of the different motor problems existent at this age, etc.

Also, Martin D. and Nicolaus J. (2000) consider that, from the point of view of the contents and practice conceiving at an early age, this contains three tasks [5, pg. 104-107]:

- To discover talented athletes and promote them.
- Long term training of the performance to be initiated in an adequate manner, to develop multilaterally but, at the same time, specific depending on the practiced sport branch.
- Performance objectives must be chosen depending on the effort's capacity that all children have, taking into account the age and sex particularities.

Practice, in general, can be seen as being so general, and specific, the specific practice basing on the general one. At the superior levels of training for speed skating, and not only, we discuss at a superior level (from a scientific point of view) about the specific practice's gravity in comparison with the general one.

Speed skating practice is based, especially, on the relation between fatigue and recovery. It is known that made practices on a certain period of time, by successive cycles of practice, chosen depending on the athlete's particularities, can lead to an ascending increase of the performance level, of course based on a correct relationship with the recovery process. Through this alternation of quantitative, qualitative accumulations and of recovery special results can appear, in time, only if these have at their base scientific methods very clearly limited, especially at an early age.

Material and methods

In elaborating the present paper I started from the premise that, speed skating, in addition to this the majority of sport branches, it is susceptible to be perfectible by continuous study of its components, physical training being one of the most important. This experiment started from the research hypothesis that if we realize an adequate physical training, in concordance with the age and sex particularities, then also the results will be superior, being so a direct connection between the physical training and the sport performances at children, in speed skating.

The study we are talking about has been made in 2005-2006 on 6 speed skaters, 4 boys and 2 girls, with ages of 8-9, legitimated at the Petroleum Club of Ploiesti, experiment that had as purpose the demonstration of the importance of the multilateral physical training at skaters of an early age, of course without excluding the importance of the other factors necessary to the appearance of superior results.

The experiment had been axed on the evaluation of the main aptitudes necessary for practicing speed skating, through the tasks specific to land, that were: speed running on 50 m. plat, commutation (running on 10 m, turning back and running on the same distance – 10 m – until the start line), length jump from standing, consecutive jumps from skating position (5 left – 5 right), abdominal musculature strength (from dorsal lying position lifting up the stretched legs and close until vertically and coming back) – there are being made under timing in 30 sec., mobility, simulator (the number of skating steps realized in 30 sec had been tested), resistance running on a 400 m distance. Each of these results had received a certain score, on the basis of existent tables at the specialty federation, resulting a total score for every athlete.

Also there had been calculated the obtained times at the tasks of 100 m and 300 m obtained at the Children's National Championship – on tasks and polyathlon, which was held at Miercurea Ciuc on the 24th-26th of January 2006.

The 6 skaters have been divided in two groups, that is: an experimental one made of Mănescu Pedro Andrei, Dinu Silviu și Fierar Andreea and a control one made of Bălăceanu Gabriel, Lambriu Eugen și

Iordăchescu Patricia. The first group has been preparing after a practice schedule with a total percentage over a calendar year (these varying over the entire year depending on the practice steps they were at) of 55% physical practice, 30% technical practice, 10% tactical practice and 5% mental and psychological practice, while the second group had a total percentage of 45% physical practice, 30% technical practice, 15% tactical practice and 10% mental and psychological practice.

At the end we compared the total scores obtained both by the boys and girls at the land tasks with the obtained results at the Children’s National Championship – on tasks and polyathlon.

Depending on the obtained results at the championship the correlation between them and the obtained results at the physical tasks specific both graphically and in written.

The used research methods and techniques have been: the experimental method, the measurements and recording methods, the bibliographic study method, the statistic-mathematic method and the graphic method.

The obtained results and discussions

The results of the physical tests (on land) specific to speed skating are presented in the tables 1 and 2, and the total scores of these tests are presented in the tables 3 and 4, arranged scores in a descending order. In tables 5 and 6 there are presented the obtained performances at the Children’s National Championship – on tasks and polyathlon, both at boys and girls, such as the total scores and the differences of scores obtained by the 6 athletes at this competition.

Table 1. Physical tests results – boys

Nr. Crt.	Name and surname	50 m. (sec.)	Commutation (sec.)	Jump in length from standing (cm.)	Consecutive jumps from skating position		Abdomen	Mobility	Simulator	Resistance (min.)
					Left (cm.)	Right (cm.)				
1.	MPA	8,8	11,3	180	835	830	30	+11	28	1,30
2.	DS	8,9	11,3	175	825	830	30	+5	27	1,30
3.	BG	9	11,4	170	850	870	30	+1	25	1,31
4.	LE	9,5	11,8	165	740	750	27	+12	25	1,33

Table 2. Physical tests results - girls

Nr. Crt.	Name and surname	50 m. (sec.)	Commutation (sec.)	Jump in length from standing (cm.)	Consecutive jumps from skating position		Abdomen	Mobility	Simulator	Resistance (min.)
					Stânga (cm.)	Dreapta (cm.)				
1.	FA	9,7	12,1	150	750	775	28	+11	21	1,38
2.	IP	10,4	12,3	145	705	700	20	+12	21	1,57

Table 3. The total score obtained at the physical tests – boys Table 4. The total score obtained at the physical tests - girls

Nr. Crt.	Name and surname	Total score of the physical tests
1.	MPA	650
2.	DS	620
3.	BG	575
4.	LE	555

Nr. Crt.	Name and surname	Total score of the physical tests
1.	FA	570
3.	IP	485

Table 5. Obtained performances at the Children’s National Championship – on tasks and polyathlon, 2006 - boys

Nr. Crt.	Name and surname	Day I		Day II		Total score	Score difference from the first	Place
		100 m. (sec.)	300 m. (sec.)	100 m. (sec.)	300 m. (sec.)			
1.	Mănescu Pedro Andrei	13,71	36,08	13,79	37,40	100,980	-	1
2.	Dinu Silviu	13,62	37	13,89	37,86	102,370	1,39	2
3.	Bălăceanu Gabriel	14,39	37,84	14,36	38,87	105,460	4,48	3
4.	Lambru Eugen	15,1	39,78	15,03	40,47	110,380	9,40	4

Table 6. Obtained performances at the Children’s National Championship – on tasks and polyathlon, 2006 - girls

Nr. Crt.	Name and surname	Day I		Day II		Total score	Score difference from the first	Place
		100 m. (sec.)	300 m. (sec.)	100 m. (sec.)	300 m. (sec.)			
1.	Fierar Andreea	14,94	40,71	15,60	40,39	111,64	-	1
3.	Iordăchescu Patricia	16,01	43,05	16,17	43,01	118,24	6,60	3

Figure 1. Obtained results at the tasks of 100 m.- boys

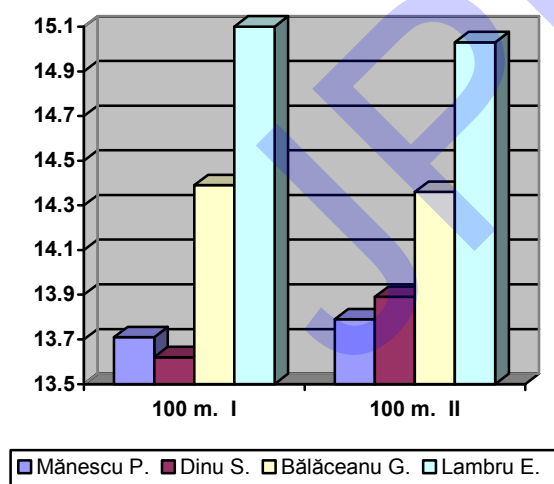


Figure 2. Obtained results at the tasks of 300 m.- boys

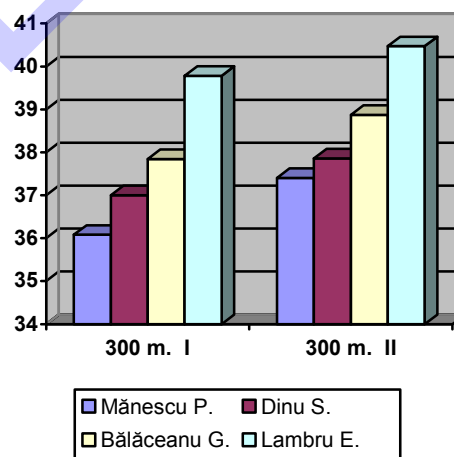


Figure 3. Obtained results at the tasks of 100 m.- girls

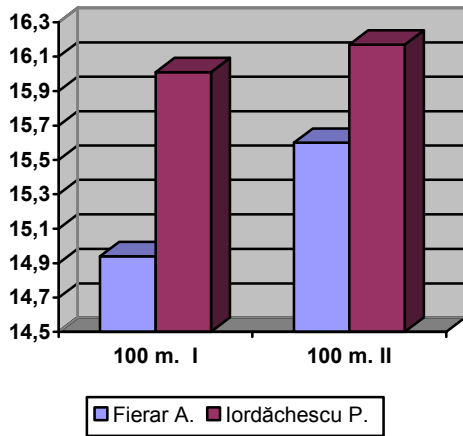


Figure 4. Obtained results at the tasks of 300 m.- girls

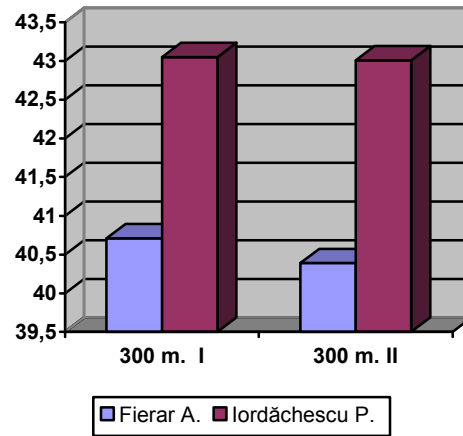


Figure 5. Total score obtained at the Children's National Championship - polyathlon (boys).

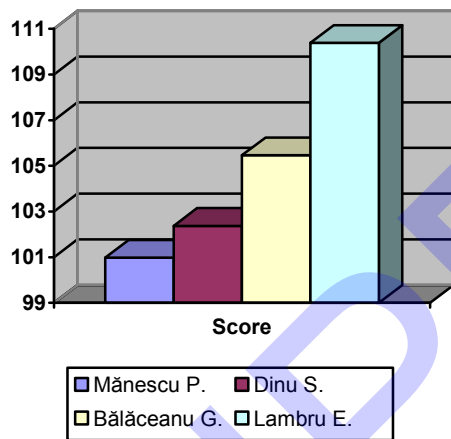
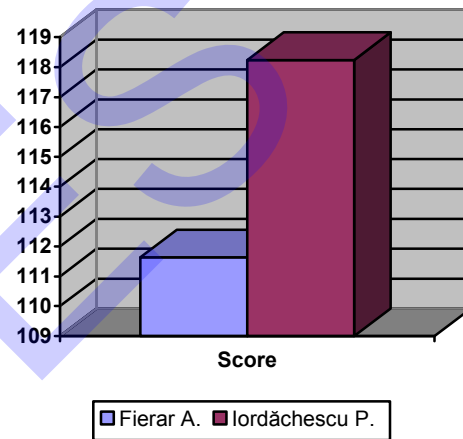


Figure 6. Total score obtained at the Children's National Championship - polyathlon (girls).



Relating to figures 5 and 6 we must make the explanation that the lower the obtained score (that is realized summing the seconds of all the made tasks by the researched subjects), the better the realized times by the researched results.

Figure 7. Compares the contribution of each value for the total across the categories - boys

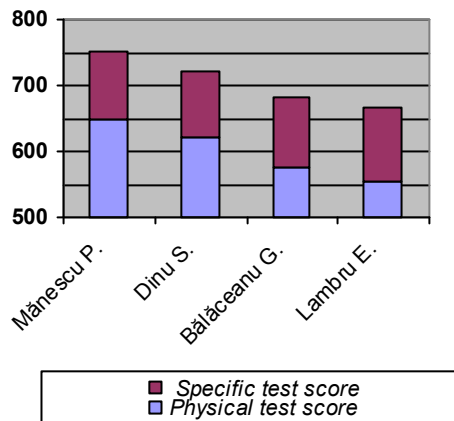
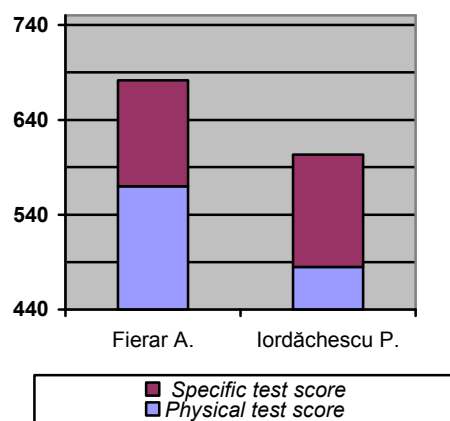


Figure 8. Compares the contribution of each value for the total across the categories - girls



In figures 7 and 8 we can see clearly the difference between the 6 athletes – four boys and two girls – by comparing the contribution of the obtained values of the researched subjects, on the basis of the two types of scores – physical and specific, at a total score, making the mention that the higher the score of the physical results (so better), the lower (better times) the score of the specific tests (sport tasks).

From the obtained and interpreted data we can notice the superiority of the results from the experimental group towards the ones obtained by the control group, this thing being due especially to the physical training.

Conclusions

1. As we notice from the obtained data and previously presented athletes from the experimental group, that had a higher percentage of the physical training, 55% in comparison with 45% from the control group, had a superior score at the physical tests in comparison with those from the second group, the same tendency being noticed also at the sport tasks at which they participated, the technical practice percentage being identical at both groups.

2. We can say that there is a direct connection between the physical training and the sport performances at children, this connection being of a positive nature as long as there is kept between certain clearly delimited limits, scientific ones, the use of methods, of the specific elements, also the quality and quantity of the practice tasks should be realized in concordance with the development level of the children, so, taking into account their particularities.

3. The appearance of superior results in speed skating, on a long period of time, depends also on the quality of the training at an early age, ignoring this conception meaning putting in danger the practice level from later.

4. General and specific physical training has clear implications in accomplishing the objectives of the modern sport practice.

5. At this level we can say that the higher the score of the physical tests (so better), the lower the score of the specific tests (sport tasks), and so better times had been realized.

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