

STUDY OF DYNAMICS OF CERTAIN MOTRICAL CAPACITY INDICATORS IN 12-14 YEAR OLD CHILDREN OVER ONE ATHLETICS COMPETITION YEAR

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Abstract: *Sports training is a dynamic and flexible process. Since it requires the participation of both trainer and athlete it calls for an integrative approach of the training process by correlating age characteristics with training methodology requirements.*

The validity of developing psycho-motrical qualities in 10-14 year old children is the rationale for the analysis of certain aspects that the specific to this age. We propose to assess the effectiveness of our training methods in terms of a providing strong basis for ensuring the young athlete a specialized training, along with the means used for a good basic physical training.

Key words: *indicators, dynamics, motrical capacities, competition year, children.*

1. Present Situation

The lack of basic physical training by using adequate action means, as well as of data on maximum stress level indicators, generate early abandon of performance athletics and in some cases are limiting the access to performance sports due to inappropriate basic physical training.

2. Paper Hypothesis

We assumed that an adequate rationalization (selection, dosing, sequencing) of the main means of action which have a major influence on the level of polyvalent and poly-athletic training can ensure the basis of future performances while systematic and methodical actions during the competition year can modify the structural and functional parameters of the

children's organism and improve their motrical behavior.

3. The Objectives

- Determining the influence of the action systems, considering the variability in the athlete's development in terms of psycho-motrical aptitudes.
- The extent to which the level of the physical training could be a criterion for selecting the envisaged discipline in the athletics discipline system.
- Assessing the effectiveness of working with models and the training programme algorithms in the present case.
- Recording the dynamics of some specific parameters of physical and technical athletic training progress rate interpretation.

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Table 2

	TRAINING DAYS, TOTAL	281 days
	TRAINING HOURS, TOTAL	453 hours (2½ hours/days)
	BREAK DAYS	18
	TOTAL KM/9 months	1.000 km
	MAIN MEANS	
RUNNING	Light running	20%
	Recovery running	5%
	Flat ground accelerated running	25%
	Constant speed running	10%
	Variable speed running	10%
	Cross country running	10%
	Accelerated uphill running	5%
	Running technique exercises	15%
JUMPS	Standing long jump	960 rep
	Jump step running	1.440 rep
	Hop step running	1.440 rep
	Various jumps	3.000/TOTAL
TOSS	Medicine ball toss	3.840
	Oina ball toss	1.220
POWER	Abdominal exercises	21.600
	Back exercises	21.600
	Pull-up exercises	5.400
	ARTICULAR MOBILITY	35 HOURS, 7% of the total of
	MUSCULAR FLEXIBILITY	training hours

We provided initial and final tests and the progress obtained was recorded.

At the end of the initiation and promotion period, a number of 6 subjects showed real aptitudes for prospective performance.

One of them clearly distinguished himself, as he was a national level performer. The physical stress level (with little exceptions) was almost the same during each training session.

The effect of adaptation to physical stress materialized in the children's health condition and performance. The multilateral and poly-athletic training were priorities over the entire year.

We found out that work with children at this level enables interesting studies with

surprising results. We selected a numbers of 4 representative test events for a study period extending over one competition year in order to monitor the children's evolution in time and obtain a practical confirmation of the theory in this field.

The evolution of metrical skills was monitored over a period of 9 months without programming any break. Five training sessions per week of 1,5-2 hours each were carried out. Although not all volume and especially intensity parameters could be observed, the obtained stress level was 75-80 % of its maximum.

The first test included the four events during the first week of October. The final test was accomplished in the last week of June, study year 2007-2008.

The test included following events:

- Speed running 50 m flat, standing start;
- 2 trials (traveling velocity);
- Standing long jump: 2 trials (legs explosive strength);

Oina ball toss with 3-5 take-off steps:

- 2 trials (explosive arms strength);
- 600 m running (endurance);
- Anthropometric data:
 - Height (cm)
 - Body weight (kg)

The statistical data interpretation is presented in the following table:

Table 3

Event	Test	Average (sec;m)	±S	C.V. %	Extreme Performance		W	%>M	%<M	R.p. %
					L(s)	L(i)				
50 m	T.I.	8,7	0,3	3,9	8,0	9,2	1,2	50	50	
	T.F.	8,0	0,3	3,4	7,6	8,5	0,9	56,3	43,7	8,04
600 m	T.I.	153	24	16,6	129	216	87	62,5	37,5	
	T.F.	132	10,2	7,7	118	158	41	68,7	31,3	13,7
St.long. jump	T.I.	158	12,6	8,2	185	145	40	31,2	68,8	
	T.F.	174	11,3	6,5	200	160	40	50	50	8,3
Oina ball toss	T.I.	16	3	18,7	25	12	13	43,7	56,3	
	T.F.	20	6,2	31	30	13	17	50	50	20
Height	T.I.	142,3	-	-	-	-	-	-	-	
	T.F.	144,7	-	-	-	-	-	-	-	1,7
Weight	T.I.	32,3	-	-	-	-	-	-	-	
	T.F.	33	-	-	-	-	-	-	-	3

Speed Running

- For speed running, initial testing has shown an average deviation of 0.3%. 11 of the 16 cases evolved with normal distribution, only 5 cases were exceptions.
- After final testing, the average deviation is equally 0.3% but only 12 cases lay within the admissible limits. Homogeneity is good. The progress rate is 8.04%. The number of results better than or equal with average increase by 6.3%.

Endurance Running

Initial testing has shown that individual values deviate from the central value by 24 seconds, only 2 cases are exceptions. Homogeneity is average. Final testing yielded a deviation of 10.2 seconds from the central value. 13 cases have normal distribution, 3 cases are exceptions. The progress rate is 13.7%. The percentage of subjects above average has increased by 6.2%.

Standing Long Jump

- After initial testing the 13 cases are within normal limits, 3 are exceptions. Homogeneity is good.
- After final testing, 12 cases have normal distribution, 4 cases are exceptions. Homogeneity is good. The progress rate is 8.3%.

Oina Ball Toss

- After initial testing, 13 cases have normal distribution, 3 cases are exceptions. Homogeneity is average.
- After final testing, the dispersion degree has increased, $cv = 31\%$, Homogeneity is absent and result increase is non-uniform. The progress rate is 20%. The significant increase is due to the acquired technical elements.

There is a positive correlation although negligible, between endurance and speed ($r=0.15$), the affirmation accuracy of the affirmation is 30%, low, random correlation.

There is a positive correlation between endurance and strength ($r=0.52$), accuracy of affirmation is 95%, good correlation.

Somatic indicators improved by 2% for waist and 3% for weight.

The muscle mass has grown a little compared with skeleton length. The working programme had no negative effects on the age's specific nutrition indicators.

The comparison was made using the indicators provided by the Institute for School Hygiene in 1992.

Conclusions

The study has ascertained that not all psycho-motrical qualities have the same

level of development, at this age speed precedes strength and endurance.

There is a significant correlation between strength and endurance development levels, at this age.

After studying motrical capacity indicator dynamics in child athletes, it resulted that the employed means, methods and methodical orientation were adequate resulting in motrical and physical development improvement.

Systematic work and adequate methodology over the entire competition year are the warranty of significant improvements in all structural and functional parameters of the child's organism, with positive effects on general motricity.

Recommendations

The annual training cycle extending over 11 months, around 280 days will become a constant in our training plans already providing motivation by enabling 13-14 year old children to participate in junior N.C. finals according to FRA standards.

During the winter training period, the application courses should be included in the trainer's planning's as their dynamicity and attractiveness compensate for the low level of effort characteristic to indoor activity period.

The action means should be properly tried and dosed in order to ensure polyvalent training levels capable to simplify orientation to an envisaged event.

Working with patterns must be adapted to the level of each training group (initiation, beginners, advanced) since it is helpful in systematic monitoring of the training level and the way it is tolerated by child athletes.

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