



UDC:796.422.12

INDIVIDUAL APPROACH IN THE TRAINING PROCESS OF SPRINTERS AT THE STAGE OF IN-DEPTH SPECIALIZATION

Sherov Zokir To'ylievich
Senior Lecturer,
Department of Sports Activity,
faculty of Physical culture,
Urgench State University,
E-mail.ru: sherov77@list.ru

Аннотация: Ушбу мақолада чуқур ихтисослашув босқичида қисқа масофага югурувчилар машғулот жараёнида табақалаштириш методикасини қўллаш тўғрисида фикр юритилади.

Калит сўзлар: табақалаштириш методи, қисқа масофага югурувчи, чуқур ихтисослашув, машғулот жараёни.

Аннотация: В статье приведены экспериментальные данные, подтверждающие эффективность разработанной дифференцированной методики тренировки спринтеров в зависимости от их индивидуальных особенностей.

Ключевые слова: дифференцированная методика, бег на короткие дистанции, углубленная специализация, тренировочный процесс.

Annotatsion: The article presents experimental data confirming the effectiveness of the developed differentiated method of training sprinters, depending on their individual characteristics.

Key words: differentiated techniques, sprint, in-depth specialization, training process.

Introduction: The continuous growth of sports achievements and the ever-increasing competition in the world arena make it necessary to further improve the system of training athletes.

One of the conditions for effective training of athletics sports reserves is a systematic long-term training, which presupposes a strict sequence of setting in solving problems, choosing means and methods, permissible training loads in accordance with the age characteristics and level of preparedness of the trainees.

Further increase in the effectiveness of the training process and the improvement of the system of sports training in athletics necessitate a systematic analysis of the control of technical and physical readiness and, on this basis, individualize the training process at different stages of the annual training cycle. Therefore, in order to further improve the methodology of training short distance runners, it is necessary to identify the main factors contributing to the growth of sports results at the stage of in-depth specialization.

Materials and methods: The scientific methodological literature most often covers the development of physical qualities and age features involved (A.A.



Belberov, 1974; M.Ya. Nabatnikova, 1982; V.P. Filin 1983, N.A. Knyazeva 1983). Very little attention is paid to the structure of training and competitive loads, the combination of means of versatile and special physical training.

At the same time, it is noted that there is an insufficient amount of research on the substantiation of a differentiated approach in the training of sprinters, taking into account the individual characteristics of athletes. N.A. Sultanov, (1979) differentiated the methodology of training sprinters on the basis of the revealed differences in physical development, physical and technical readiness of athletes 17-19 years old, specializing in running 100 and 200 meters. However, such research has not been done with students specializing in short distances for over 20 years.

The practice of work at the university shows that students with a low level of physical fitness who have not previously been involved in sports often come to the athletics section. At the same time, the absence of scientifically based programs leads to the fact that in the majority of non-specialized universities, already at the first stages of training, the means and methods typical for highly qualified sprinters are used, in rather high volumes. This leads to the fact that when athletes achieve a result at the level of 1 and 2 categories, their indicators do not improve in the future.

In this regard, this problem remains open and does not lose its relevance in many important theoretical, pedagogical and health-improving areas.

The aim of the work is to improve the differentiated methodology of the training process on the basis of the revealed differences in physical development, physical and technical readiness of short distance runners at the stage of in-depth specialization.

Research results and their discussion. The purpose of the pedagogical experiment organized and carried out by us was to improve the differentiated methodology of training sprinter students at the stage of advanced specialization on the basis of objective scientific information about the individual characteristics of athletes and thereby contribute to the optimization of the training process in general and, consequently, the growth of sports achievements. The choice of the goal also predetermined the organizational side of the pedagogical experiment, in which the students of the short distance runners 18-22 years old from Urgench State University took part.

When compiling individual training programs, we proceeded from the available recommendations of the authors (Yu.V. Verkhoshansky, V.V.Kuznetsov, V.V. Petrovsky, S.Kh. Manzhuev 1983).

Considering the factor that the age range of 17-18 years is associated with the stage of preparation aimed at in-depth training in the chosen form, we chose the content and direction of our experiment. It is at this age, after several years of specialized training, that it is possible to judge with a high degree of certainty the ability to sprint in general and, on the basis of individual characteristics, predict the success of specialization at one or both distances of sprint running.

All students' sprinters were divided into 2 groups, control and experimental. The groups were leveled according to their athletic performance in running 60, 100, 200 and 400 meters. Before the pedagogical experiment, all athletes by the method

of versatile testing revealed the peculiarities of physical development, physical fitness, psycho-physiological characteristics.

On the basis of comprehensive versatile testing, the levels of physical and technical readiness, physical development features and psycho-physiological characteristics of sprinter students were revealed, which made it possible to make a preliminary forecast of the success of their narrow specialization (Table 2).

Thus, the obtained results of the conducted experimental studies allowed us to conclude that:

In principle, it is possible to predict the predominant narrow running specialization of sprinters on the basis of their individual characteristics of physical development of physical and technical readiness, psycho physiological indicators.

The predominant predisposition to running specialization is realized in sprinters only in the case of a differentiated approach to the choice of the main training means and methods, an approach based on the identified individual characteristics of athletes in connection with the supposed narrow specialization. It is interesting to note that even selective testing of sprinters in an additional control group showed that a predisposition to running specialization is realized only in the case of using training means and methods, corresponding to the identified individual characteristics of athletes.

The data of our pedagogical research allowed us to experimentally, that is, to substantiate some of the provisions previously hypothesized.

In particular, we experimentally confirmed the statements of V.V. Petrovsky (1973) D.P. Ionov and G.I. Chernyaev (1974), V.P. Filin and B.I. Tabachnik (1975), R.D. Lyulko (1976), N.A. Sultanova (1979) that there is an urgent need for a differentiated approach in the selection process and training methods for runners at 100, 200 and 400 meters.

To determine the effectiveness of running short and long stretches, as well as running at variable speed for the special endurance of 200-meter runners. The training load in the three groups was the same and aimed at the complex training of runners, differing only in the exercises for the development of special endurance. The nature and volume of exercises for the development of special endurance in group "A" in training sessions were used to run on segments of 20-100 m with an intensity of 90-100% of the maximum; athletes of group "B" - repeated running at intervals of 100-300 m with an intensity of 75-85% of the maximum, athletes of group "C" - running at variable speed at intervals from 100 to 300 m.

The determining criterion for assessing the level of special endurance was the result in running at the main competitive distance - 200 m. In addition, the dynamics of sports results at a distance of 30-300 m, as well as the level of development of basic physical qualities, were analyzed. See table 1

Table 1
Dynamics of Physical Fitness of Runners During the Pedagogical Experiment

Control exercises	Groups	The original Data	End Data
-------------------	--------	-------------------	----------

30 m on the move (sec)	A	3,15	2,85
	B	3,10	3,00
	C	3,18	2,90
30 m from a low start	A	4,15	3,90
	B	4,05	4,00
	C	4,20	3,95
100 m	A	11,35	10,80
	B	11,20	11,10
	C	11,40	10,85
150 m	A	17,30	16,60
	B	17,20	16,60
	C	17,40	16,10
200 m	A	23,20	22,40
	B	23,10	22,50
	C	23,30	21,90
300 m	A	38,50	37,00
	B	38,30	36,50
	C	38,40	35,50
Triple jump from the spot	A	8,20	8,90
	B	8,35	8,80
	C	8,00	8,90
Fivefold jump	A	12,50	14,60
	B	12,65	14,40
	C	12,30	14,70
Tenfold jump	A	26,40	29,00
	B	26,50	29,20
	C	26,60	29,50

Of particular interest is the dynamics of the development of physical qualities of a runner trained in different modes. So in group A, athletes who used running at near-limit speed on short intervals, as a result of a two-year experiment, were observed, as a result of a two-year experiment, significant improvements in the results in running at 30 m s / h, 30 m s / s, by 150 m. speed-power qualities.

Thus, it can be stated that the specified training regime in group A has a favorable effect on the development of speed qualities, somewhat increasing the maximum running speed and significantly stabilizing it over a longer segment of distances. The use of training modes, in which running at near-limit speed on short intervals is widely used, contributes to the development of speed capabilities. The increase in speed over the entire distance by using the maximum intensity of running on short intervals in training sessions was noted earlier by many authors.

It was found that the use of running with near-limit intensity on short intervals contributes to a significant increase in sports results in running at 100 m, but does not significantly affect the development of special endurance in running at 150, 200 and 300 m.

In group B, at the end of the experiment, the athletes who used long-distance running in the classroom revealed significant differences in the results in running by 100, 150, 200, and 300, as well as a significant increase in the results in the five-



jump. Changed speeds in running at 30 m from the run and 20 m from a low start was not observed. In all likelihood, the shifts in the 100m run are due to improvements in neuromuscular coordination or some components of the sprint technique. The improvement in performance in the 200m sprint occurred, apparently due to the increased endurance of the runners.

Thus, we can assume that the use of running on long sections at a speed of 75-85% of the maximum increases the general fitness of the sprinter, develops special endurance well, but insignificantly affects the development of speed qualities.

Sportsmen of group C, who used variable speed running in training sessions, statistically significantly improved the results in all indicators of the pedagogical testing program. It can be assumed that the use of running with a variable speed in the process of overcoming the training segment allows one to raise the level of both absolute speed and special endurance.



Table 2

Change in Indicators of Special Running Readiness and Competitive Activity among Sprinters of the Experimental and Control Groups

Parameters	Groups	Experimental group			Control group			Growth difference 1-2	P
		Initial data $\bar{x} \pm \sigma$	Final data $\bar{x} \pm \sigma$	Increment 1 $\bar{x} \pm \sigma$	Initial data $\bar{x} \pm \sigma$	Final data $\bar{x} \pm \sigma$	Increment 2 $\bar{x} \pm \sigma$		
Maxim. m / s	Man	9,84±0,19	10,74±0,16	0,90±0,18	9,89±0,18	10,39±0,12	0,50±0,10	0,40	<0,01
	Woman	9,02±0,27	9,65±0,23	0,63±0,14	9,07±0,25	9,46±0,17	0,39±0,11	0,24	<0,01
60 m s / h(sec)	Man	6,34±0,10	5,68±0,09	0,66±0,12	6,34±0,11	5,94±0,09	0,40±0,11	0,26	<0,05
	Woman	7,40±0,23	6,53±0,16	0,87±0,13	7,42±0,19	6,83±0,15	0,59±0,12	0,28	<0,05
150 m (sec)	Man	17,72±0,47	15,66±0,44	2,06±0,42	17,60±0,37	16,17±0,36	1,43±0,30	0,63	<0,05
	Woman	19,15±0,43	16,92±0,47	2,23±0,48	19,25±0,42	17,82±0,44	1,43±0,31	0,80	<0,01
Step length (m)	Man	2,27±0,03	2,31±0,03	0,04±0,02	2,28±0,02	2,30±0,03	0,02±0,02	0,02	>0,05
	Woman	2,06±0,03	2,09±0,03	0,03±0,02	2,03±0,03	2,06±0,04	0,03±0,02	-	<0,05
Cadence (w / s)	Man	4,33±0,17	4,64±0,16	0,31±0,11	4,34±0,15	4,52±0,16	0,18±0,08	0,13	<0,05
	Woman	4,38±0,14	4,62±0,12	0,24±0,10	4,4±0,15	4,59±0,14	0,12±0,08	0,13	<0,05
Running for 100 m (s)	Man	10,84±0,11	10,59±0,09	0,28±0,12	10,88±0,09	10,78±0,09	0,10±0,09	0,18	<0,05
	Woman	11,72±0,19	11,40±0,14	0,32±0,17	11,75±0,18	11,63±0,16	0,12±0,16	0,20	<0,05
Running 200 m (s)	Man	22,08±0,21	21,60±0,19	0,48±0,20	22,14±0,19	21,92±0,20	0,22±0,19	0,25	<0,05
	Woman	24,18±0,39	23,54±0,28	0,64±0,34	24,47±0,35	24,13±0,33	0,34±0,33	0,30	<0,05

Improvement of the sports result by 150, 200 and 300 m in group B indicates the greatest increase in the level of special endurance and the effectiveness of running with variable speed for its growth.

Special endurance training should be given special attention in the training of highly qualified sprinters. Moreover, the greatest effect for 200 m runners will bring the rational use of running with variable speed on elongated sections.

The most informative test for determining the level of special endurance development for a 200 m runner is the time shown by him on the 150 and 300 m segments.

Repeated running of 200 to 300 m lengths with an intensity of 75-85% of the athlete's planned result in the competitive season has a significant impact on the level of special endurance development.

The study of the means of running training, carried out on the basis of the study of individual entries in the diaries of athletes running 400 meters with different qualifications, showed that the increase in sportsmanship is provided primarily by an increase in the partial contribution of running in the zone of maximum and sub maximal power (Table 3).

Table 3

Distribution of Running Training Means among Athletes in 400 m Running of Different Qualifications

Exercise aids	Running volume Nov-May (28 weeks)					
	Master of Sports		CMS-1 category		2 category	
	km	% of the total	km	% of the total	km	% of the total
Running on segments up to 100 m with an intensity of 90-100%	22,2	4,5	14,7	2,9	12,5	2,5
Running over 100 meters with 90-100% intensity	22,8	4,6	12,4	2,4	16,1	3,2
Intensity 80-90%	73,5	14,8	33,6	6,6	36,6	7,4
Intensity 70-80%	56,4	11,4	141,8	27,7	168,3	33,9
Recovery run	321,1	64,7	308,5	60,4	263,0	53,0
Total running sum	495,6	100,0	511,1	100,0	496,1	100,0
Running in hard and light conditions	10,7	2,2	8,0	1,6	3,8	0,8
Number of training sessions	177		159		154	

So, the volume of running with an intensity of 80-90% of the maximum speed for a group of sportsmen of candidates for master of sports - 1 category is 6.6% of the total volume, and for masters of sports - 14.8%. The volume of running with an intensity of 90-100% in these groups, respectively, is 5.3 and 9.1%.



The share of training work performed in difficult and light conditions of training qualified and highly qualified athletes takes a very small share in the total volume of training means, which is 0.8-2.2% of the means of running training.

Thus, the reserves of improving sports skills on the basis of methodological approaches to the use of variable impact are practically not used.

Conclusion. The analysis of the performances of the leading athletes of sprinters participating in athletics competitions according to programs of various sizes, indicates a tendency towards a narrow competitive specialization of athletes at one of three sprint distances (100, 200 and 400 meters). The data of the pedagogical experiment allow us to speak about the fundamental possibility of predicting the predominant running specialization of sprinters on the basis of their individual characteristics of physical development, physical and technical readiness, psycho-physiological indicators.

The predominant predisposition to running specialization is realized in sprinters only in the case of a differentiated approach to the choice of basic means and training methods, chosen taking into account the identified individual characteristics of athletes in connection with the intended specialization.

References:

- [1]. Anpilogov I.E Individualizatsiya trenirovochnogo protsessa v bege na korotkie distantsii Sb. nauch. st. i tez. 58-oy nauch.-prakt. konf. prof.-prepod. sostava SGAFKST po itogam NIR za 2007 god; pod obo'. red. A.I. Pavlova. – Smolensk: SGAFKST, 2008.
- [2]. Vrublevskiy Ye.P Individualizatsiya podgotovki jenshen v skorostno-silovix vidax legkoy atletiki. Avtoreferat... doktor. ped. nauk. – Volgograd., 2008.
- [3]. Kvashuk P.V. Differentsirovanniy podxod k postroeniyu trenirovochnogo protsessa yunior sportsmenov na etapax mnogoletney podgotovki : Dis. ... d-ra ped. nauk : 13.00.04: – Moskva, 2003
- [4]. Sbitniy S.N. Individualno-differentsirovannaya metodika vospitaniya spetsialnoy vinoslivosti u sprinterov 17-19 let. Avtoreferat... kand. ped. nauk. – Tula., 2009.
- [5]. Sultanov.N.A Obosnovaniya differentsirovannoy metodiki trenirovki begunov na 100 i 200 metrov v svyazi s ix individualnimi osobennostyami. Avtoreferat... kand. ped. nauk. – M., 1979.
- [6]. Unt I. E. Individualizatsiya i differentsiatsiya obucheniya. M., 1990.