



Pedagogical Conditions for Increasing Running Speed on Sprint Distances

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Abstract: The article discusses the pedagogical conditions used to increase the speed of sprinting, which require an integrated approach to the development of a methodology for sports training of sprinters, based on identifying and taking into account the mechanism of formation of the speed of running steps, as well as pedagogical conditions that contribute to the growth of sportsmanship of athletes.

Keywords: short distances, sprinting, individual technique, pedagogical conditions, methodology.

Introduction. In sprint, the actions of an athlete are considered as a system of rationally organized movements aimed at increasing the effectiveness of competitive activity [1, 2, 3]. The complexity of running 100 and 200 meters is due to the need to perform a large number of various movements arising from one another and creating optimal conditions for subsequent ones, which contributes to the development of maximum speed [4, 5]. The technique of sprinting has a clearly oriented individual character, due to a complex of various factors [6, 7, 8].

According to the researchers, the increase in running speed at sprint distances ends at the sixth second, the maximum speed of running steps for outstanding athletes is approximately 12 m / s and remains on the segment from 20 to 35 meters, after which deceleration begins until the final throw. In this regard, it is of great importance to identify the mechanism for ensuring maximum speed in a given section of the competitive distance and the possibility of increasing it [9, 10, 11]. The combination of the length and frequency of the sprinter's running steps is only an external expression of the speed of overcoming a given distance, since the speed of movements is determined by a complex cyclone of neurophysiological and biological processes [12, 13].

According to scientists, when developing and improving speed and speed-strength qualities that determine the speed of running, it is necessary to take into account the mechanism of interaction between external and internal forces [14, 15]. External forces are understood as: gravity, support reaction force, friction force, resistance force of the external environment. Internal forces are represented by muscle tension, distribution and redistribution of muscle efforts.

The speed of an athlete is determined by the activity of not only the peripheral motor apparatus, but also the central mechanisms of movement control, which, along with motor centers, include vegetative and sensory centers [16, 17, 18]. Therefore, outstanding results are achieved by sprinters with a high level of coordination in the work of complex mechanisms for controlling motor acts located at different levels of the central nervous system, provided that optimal indicators of the development of speed-strength qualities, body stability, and coordination of movements of the upper and lower extremities are achieved.

In the process of formation and improvement of individual running technique, it is necessary to create conditions for the athlete to realize the semantic essence of movements in their integrity, which ensures an effective solution of the task [19, 20]. As the level of development of motor-coordination

qualities increases, the parameters of running steps improve, the individual running technique of a sprinter undergoes significant changes by:

- ✓ optimization of the length and frequency of running steps;
- ✓ rationalization of placing the foot on the support;
- ✓ increasing the force and speed of repulsion from the treadmill;
- ✓ Improved running straightness.

An analysis of the specialized literature has shown that so far there is no unity in understanding the ideal technique of running steps over short distances; in addition, used as the main exercises aimed at increasing the strength and speed of repulsion from the support, they do not always correspond to the structural content of the sprinter's running steps [21, 22, 23]. This requires the search for new approaches to improving the individual technique of sprinting, taking into account the athlete's predisposition to this type of sports activity. Thus, one of the signs of an athlete's psychological readiness for self-realization and self-improvement through the systematic performance of running exercises similar in structural content is the ability to objectively assess the prospects for their own growth in sportsmanship in terms of details that characterize the improvement in the parameters of the running steps technique, which ensures an increase in competition results and forms satisfaction with the training and competitive activity [24].

In the course of the research, the method developed by the author for improving the individual technique of running steps of qualified 16-20 year old sprinters was tested. The essence of this technique is to show the runner the available reserves for improving sportsmanship by improving individual parameters of the technique of running steps.

With the help of filming, individual features of the sprinting technique were revealed, starting with a low start. Shooting from the side gave the runner the opportunity to match the position of the body when executing the "start" commands; "Attention" both at the moment of the starting shot, as well as during the starting acceleration. A joint analysis of the received frames made it possible to identify errors and ways to correct them. Filming from behind (from the back of the runner) made it possible to:

- identify the features of placing the foot on the support;
- set the degree of straightness of running steps; - to determine the amplitude of oscillatory movements of the body in the lateral direction;
- determine the direction of hand swings;
- the magnitude of the amplitude of the head oscillations in the lateral direction. Film shots taken from the side made it possible to establish:
- amplitudes of oscillatory movements of the body in the anterior-posterior direction;
- the nature of the vibrations of the head;
- the degree of coordination of movements of the upper and lower extremities.

Based on the results of the analysis of the identified deviations from the rational technique of running steps, an individual program of sports training for the upcoming main competitions of the year was developed for each sprinter. When running from a low start, an exceptional role belongs to the time parameters that ensure the coordination of the sprinter's actions with the commands of the judge at the start.

To identify the degree of formation of the individual technique of the leading parameters of sprinting: the coordination of the actions of the runner at the start with the teams of the judge; optimal arrangement of parts and links of the body in space during the starting acceleration; straightness of running, special evaluation criteria have been developed.

Criteria for evaluation:

5 points - the ideal arrangement of parts and links of the body on the starting blocks in accordance with the height and weight indicators of the athlete. Full consistency of the exit from the start with the shot of the starting pistol;

4 points - rational arrangement of parts and links of the body on the starting blocks with minor correction before the starting shot. Timely start of running steps;

3 points - measuring the starting blocks from several attempts, a slight delay in the reaction to the shot of the starting pistol;

2 points - adjustment of the location of parts and links of the body to the command "attention". A significant delay in the reaction to the shot of the starting pistol;

1 point - errors in the location of parts and links of the body on the starting blocks; inconsistency of the first steps with the sound of the starting pistol.

Conclusions. Thus, the results of the pedagogical experiment showed that the problem of increasing the speed of running over short distances should be solved in a complex way, taking into account the fact that the speed of running steps is a function of the whole organism. When looking for additional reserves to improve speed when overcoming a competitive distance, it is important to identify the mechanism for increasing the speed of movements; take into account the predisposition of the athlete to this sport; identify the pedagogical conditions for increasing the speed of running steps; build the training process in accordance with the individual characteristics of the runners.

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