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Methods of Improving the Start Reaction of Short Distance Runners

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ABSTRACT: In the article, a set of exercises was developed to improve the starting technique and develop the starting reaction of athletes in short-distance running. Also, the start reactions of athletes during training, control competitions and competitions were studied, and the effectiveness of the start reaction on sports results in 100 m distance running was widely explained.

KEYWORD: running, short distance, start, exit from the start, start reaction, improvement, competition, training, control competitions.

The level of health and physical activity of the population is increasing in our country in recent years due to the attention paid to physical education and sports. Mass running competitions are being organized, especially in athletics. In particular, ensuring the implementation of the decision of the President of the Republic of Uzbekistan "On measures for the further development of walking, running, mini-football, badminton, streetball and workout sports" dated November 5, 2021 No. 5282 is one of the age-old tasks of specialists and coaches. Also in the decision "On walking and running - "Tashkent Marathon", "Samarkand Marathon" and "Zaamin Ultra" international marathons, "Sky Camp Bostanliq" triathlon and yoga marathons, "All records are ours!" (for 5 and 10 thousand steps), running at different distances "Toward new records!" attention should be paid to gradually preparing athletes for the Olympic Games through competitions.

We can see that the above-mentioned decisions are of great importance in the training system of athletes in running athletics. In fact, the more a person increases his physical activity, the more he regularly engages in physical education and sports, the higher his work efficiency will be. That's why we need to focus on preparing athletes for competitions through constant training. A lot of scientific research work is being carried out on the preparation of athletics athletes for competitions and the formation of the reserve team for the national team. As a result of this ongoing scientific research, the necessary recommendations and instructions are given for coaches in the organization and management of sportsmen's training.

Training of athletes who show high sports results in international and local competitions by improving the level of physical fitness of athletes in short-distance running of athletics and improving their running technique remains one of the urgent issues today.

The purpose of the work is the method of improving the start reaction to improve the results of the competition of short-distance runners.

The following methods were used to solve the tasks: analysis of scientific and methodical literature on the subject, mathematical statistical methods, repeated and repeated methods.

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Research results and its discussion. According to more than 120 years of research by psychologists, based on the results of scientific research conducted by scientists to determine the start reactions of short-distance runners and use them in training, the reaction to sound is on average up to 0.16 seconds in normal people, and slightly lower in women - up to 0.18-0.19 seconds. . In athletes with certain physical and technical training, this indicator is 0.12-0.15 s. (men's short-distance running reaction time was shown in the final stages of the 1997-2003 world championships) Short-distance runners suddenly have a slightly lower reaction to sound and movement to it. That is, it will be equal to 0.340-0.410 seconds. In this case, it should be noted that short-distance runners are required to have psycho-physiological training, at the same time, to react to the sound, not to leave the competition, to perform the rhythm of breathing correctly, and not to commit a false start.

Coaches and referees have faced some difficulties to quickly determine and process sports results during short-distance running training and various prestigious competitions. Taking into account these shortcomings, the implementation of optimal options by improving technical preparation in training and competition activities will somewhat ease the activities of coaches and athletes, as well as teaching the athlete to use efficient running techniques, using the training time as effectively as possible can also have a positive effect on the athlete's further activities. It is possible to conclude from pedagogical observations and activity competitions that it is necessary to quickly determine sports results based on the implementation of new technologies in athletics competitions held on the scale of Uzbekistan and the use of new technologies, and the need to form the skills of athletes to the start reaction by using them in training processes. Today, in athletics, it is necessary to accurately measure sports results with the help of modern technologies. Because careful preparation for upcoming starts will lead to positive sports results in the athlete. Currently, in many scientific methodical literature, the results of athletes are considered to be related only to the tools and methods used in training processes. True, but the results they show are always 0.001 s by the coaches, as in the competition. does not analyze accurately. Because the result shown by the athlete is determined using hand stopwatches during training, it is determined using information technologies (Fully Automatic Timing and Photo Finish System) during the competition. As a result, the coach's plans may not be realized as expected. If the information received during the competition is determined and processed immediately using new technologies, the coach will have the opportunity to analyze it immediately. But it is natural that the question arises that this may not be the case in short-distance running. Because, taking into account that short-distance runners participate in at least two preliminaries and finals, there will be a break of at least 1.5-2 hours between preliminaries and finals. During this period, the coach will determine the results of his students, the reaction to the start, the time to cover the distance and the degree of possibility of crossing the finish line, allowing to develop a plan for the next start and a tactical plan that will be applied to the opponents. This allows the athlete to get off the start more efficiently, reach the starting speed and achieve a better result in distance running. All races are now determined by photofinishing. In sports competitions, the photo finish is an integrated system that records and operates in sync with the starting poles and starting signal system. It is a system that not only determines the order of the athletes entering the finish line, but also regulates their total time from the start reaction to run the distance and the time to run the distance sections, and the results when they cross the finish line.

During the study of the experiences of effective training of short-distance running student-athletes for competitions in the annual training cycle, we paid attention to the fact that the volume of loads of various content used by trainers in the annual training cycle is more than necessary or the intensity of performance is increased to a higher level than the norm, which directly affects the sports results of athletes. As a result, their sports results may decrease or develop unevenly. In order to improve their running technique and starting reaction, which is directly related to their sports results, we have developed and put into practice the following methods.

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In training, we gave the following training tools and methods to improve the technique of starting and running from the start.

Running with small quail steps. When performing the exercise, the feet often hit the ground. The exercise is performed with free movements while the body is free. Running with knees high. When performing this exercise, the body is bent forward at an angle of 5-8o and the knees are alternately extended forward at an angle of 85-90o. The arms move proportionally to the legs in this process. The exercise is performed freely and unhurriedly.

Jumping from foot to foot. This exercise is performed by running through multiple jumps with each leg up in a free position. In this case, the hands move in a large amplitude. The swing leg is in a free position.

Toe-to-toe hopping: In this running exercise, athletes run with their right and left feet forward with each step. In this case, the hands move freely in proportion to the movement of the legs.

Walking with quail steps 3-4 times, alternately raising the knee high and running. This exercise is performed freely after every 3-4 steps. It is performed by continuing to run with quail steps and alternating legs. During the exercise, returns should be 5-6 times in 60 m.

2 times on each leg, running with the knee forward. The exercise is performed by running freely with the knee forward 2 times on each leg. It is done with the paws while changing the legs while keeping the body straight. The heel should not touch the ground as much as possible.

Jumping sideways. When running sideways, the movement is performed by jumping to the side. Hands move in a large amplitude. 2-4 times squatting on one leg and running with knees up.

The exercise is performed on a flat treadmill, jumping on one leg 4 times in a row, then quickly switching to the other leg. During the exchange, the movement of the hands is also accelerated. Running should be done with the sole of the foot as flat as possible.

Running backwards on tiptoes. This exercise is done freely. This is an exercise that is necessary for athletes to perform the running technique correctly. Because the athlete who performs it learns the technique of putting the foot on the ground correctly while running.

Running back and forth with crossed legs. Running backwards is done by jumping to both sides and taking a step. Jumping across the line if possible, throwing the left foot to the right side of the line and the right foot to the left side of the line.

We have developed the following set of exercises for the purpose of developing offensive reaction and movement speed:

1. In front of the starting line, 6-8 athletes are placed at different intervals. By counting 1, 2 according to the starter's count, it is necessary to look forward and immediately change all the places, in the next count, move to the right, then move to the left and change the place. Counting is done after 7-8 seconds after changing places, after all athletes come to a calm state. During this exercise, the coach should be carefully monitored. After each exercise, the coach mentions the 2 athletes with the slowest movements and gives appropriate advice and explains their mistakes.

2. Athletes stand side by side in pairs. It is necessary to try to pick up items that are 2-3 meters away. After the "Attention" command, the starter tells the color of the item placed in front of him, "White", "Red", etc. Whichever of the pair's athletes has the fastest start reaction and thinking will focus on getting the piece first. This exercise can last 2-3 minutes.

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3. Athletes are placed on the corridors, taking a high start. 6-8 participants are divided into odd or even numbers, depending on their standing lanes. The starter gives the commands as follows. Commands "Evens" or "Odds". It is recommended that all athletes listen carefully to the command while performing these exercises. Because after saying "Evens" or "Odds" you need to run quickly from the start. Athletes cannot be mistaken in this. The reason is that the athlete understands who will be given the start when they say "evens" or "odds". The exercise is performed in 2-3 steps. The interval of exercises can be continued for 7-8 seconds or after the appropriate advice of the trainer. Perform this exercise 5-6 times for 3-4 series with 2-3 minutes of rest between each series.

4. Athletes can stand in different positions lying, sitting, lying on their back or lying on their stomach. The starter immediately gives the command to march, and everyone should run 10-15 steps quickly. The focus of the exercise is on personal speed, not on others. Because athletes are in different situations, we don't pay attention to it. The main thing is their self-start reaction.

5. Athletes stand up and perform frequency exercises with their knees raised, and after the starter gives the command "March", everyone moves forward. 15-20 steps should run at maximum speed. The exercise should be performed 5-6 times as a team. The rest interval is 2-3 minutes.

6. Athletes standing in a row, the first athlete holds the baton with his right hand in an upright position and releases it at the start. The next athlete must catch him. In this way, the athlete keeps track of the starting position of the athlete before him.

7. 6 different colored pieces of equipment are placed side by side with an interval of 20 cm 5 meters in front of the athlete and he says the color of one of the pieces of equipment. The athlete must quickly leave the start and pick up the equipment of the color indicated in the command. It helps to increase not only the starting reaction, but also the speed of thinking of athletes.

8. When leaving the starting posts, the athlete should jump forward on the 2x2 mat at a distance of 1 meter from the starting line and touch the objects placed on the mat 20 cm apart. In this exercise, the athlete's explosive power improves the starting distance.

9. Departure from the starting poles in the maximum position with different time intervals without commands. It is recommended that the athlete perform this exercise at will. The reason for this is that the orders of the starters depend mainly on the actions of the 8 athletes.

10. It is recommended to take off from the start and run 20-30 meters at maximum speed as a team, adjusting the starting poles to the athlete himself. In this case, the athletes are monitored by the coach for false start and other situations, and after appropriate recommendations, the training can be continued. An athlete who makes a false start while performing this exercise can continue running. Because the goal is to use the starting blocks correctly and listen carefully to the commands.

The start reactions of the athletes who participated in the research through the developed set of exercises aimed at increasing the start and exit reaction were as follows.

During the research, the effect of the given methodology on the start reaction of athletes in competitions and trainings was studied. Based on the results of the analysis, we monitored the starting reaction and sports results shown by our athletes in competitions.

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Table 1. Indicators of starting reaction of Uzbek athletes in training and competitions n=16

Competition	Periods	Reaction time			Result
		average	high	Low	Average
In training	TO	0,361±0,093	0,245	0,406	11,72±0,85
	TK	0,208±0,054	0,132	0,257	11,27±0,69
In the control competition	TO	0,296±0,092	0,207	0,371	11,76±0,86
	TK	0,197±0,067	0,141	0,328	11,12±0,77
In the competition	TO	0,282±0,073	0,196	0,264	11,59±0,87
	TK	0,190±0,054	0,124	0,186	11,03±0,81
	t=6,24; p<0,001			t=2,27; p<0,005	

In the research, we studied the starting reactions and sports results of the selected athletes during the main competitions held throughout the year and during training and control. According to him, in the study, the results obtained in the starting conditions of training, in control competitions and during the competition were studied in detail.

In the pedagogical control test to determine the start reaction during training, the average time of 16 selected athletes before the study was 0.361±0.093 seconds, and the result in 100 m distance was 11.72±0.85 seconds. At the end of the study, these indicators were equal to 0.208±0.054 seconds and 11.27±0.69 seconds, respectively. The highest starting reaction was demonstrated by 1 athlete of 0.132 seconds.

During the control competitions, the start reaction of our 16 selected athletes before the study was on average 0.296±0.092 seconds, and the result at a distance of 100 m was 11.76±0.86 seconds. At the end of the study, these indicators were equal to 0.197±0.067 seconds and 11.12±0.77 seconds, respectively. The highest starting reaction was shown by 1 of our athletes with a result of 0.141 seconds.

In order to achieve our main goal, i.e., during the competition, the results of our athletes, i.e. 16 athletes, at the beginning of the study were equal to 0.282±0.073 seconds, and their average sports results were 11.59±0.87 seconds. At the end of the study, 14 out of 16 athletes participated in the competition (2 of our athletes did not participate in the competition due to various reasons), their start reaction was on average 0.190±0.054 seconds. and in running for 100 m it was 11.03±0.81 seconds. Compared to the beginning of the study, the start reaction time was 0.171 seconds and the time for running 100 m was improved by 0.69 seconds. The reliability of t=2.27 was p<0.005 and it was found to be reliable.

It was confirmed in the research that the methodology developed by us for improving the start reaction is reliable.

Summary. 1. There is a possibility that sports results will freeze in one place if the annual training program or special running exercises performed in training, tools that develop the start reaction are not used correctly. The training methodology developed by us also had an effect on the sports results of short-distance runners. Athletes need to identify the start response and improve the start response in short-distance runners during training. At the same time, short-distance runners need to have emotional control and psycho-physiological training to respond to the sound as well as to perform the rhythm of breathing correctly and not to commit a false start.

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