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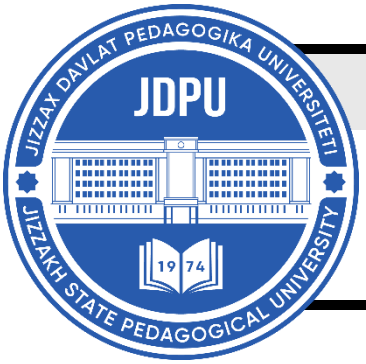

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SUBJECT: PRACTICAL APPLICATION OF METHODOLOGY FOR SHORT-DISTANCE RUNNERS AND INFLUENCE ON SPORTS RESULTS

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ABOUT ARTICLE

Key words: Short-distance running, physical training, special preparation, speed endurance, adolescent athletes, training methodology, pedagogical experiment, running technique, workload distribution, statistical analysis.

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Abstract: This scientific study investigates the impact of a specially developed training methodology on the athletic performance of adolescent sprinters. Within the context of ongoing educational and sports reforms, the study analyzes the potential for achieving high athletic results through the scientific organization of training sessions, optimal workload distribution, and the comprehensive development of athletes' physical qualities. During the research, an experimental training program was implemented in the test group, and its effectiveness was evaluated using statistical analysis. The results demonstrated a significant improvement in the physical fitness indicators of the experimental group athletes, confirming the effectiveness of the developed methodology and its applicability in practice.

Relevance of the research topic: Uzbekistan Republic government purposeful politics in return physical upbringing and sports again - again development is finding Athletes preparation system and structure to improve directed President decrees and Uzbekistan Republic Ministers Court of Justice decisions our opinion is evidence . Today's on the day development from the way quickly steps with ongoing in our country education system fundamentally reform to do and improvement , to him advanced pedagogical and modern information introducing technologies verb , education efficiency the state to increase issues

politics level is also given importance. Grow up upcoming young generation every side by side intellectual , moral and physical in terms of develop them physically upbringing and Sports orientation is important in the field importance profession We will . we know that it is light athletics short to distances running type whole in the world popular sports of the types is considered Today s port results from the day per day growing to go short to distances runner teenagers annual preparation his/her exercises effective organization and distribution of loads methodology improvement demand is doing . Short to the distance runners preparation according to in the world leader scientists with one in line in our country specialists and training for sports competitions methodology improvement scientific research on take are going To training athletes big hobby with to participate and from it satisfaction harvest to do , from the coach big responsibility demand does Coach control under practitioners between social - spiritual environment , in the practitioner was positive changes , their achieved achievements of the coach annual preparation his/her exercises correct the distribution means Current on the day talented and promising athletes preparation especially them annual preparation exercises improvement , sports the results to grow possibility giving methodology looking for finding issues currently important in the field from problems is being counted . Of course , now on the day Uzbek short to the distance runner teenagers sports the result The world's leading teenager is short to the distance the result of running athletes When compared with the previous analysis, significant differences were observed. Athletes' short to the distance running according to in preparation annual of readiness preparation round , competition to pass to during the period of downloads in distribution their physical development , functional physical technical and tactical readiness condition , psychological preparation level considering received Research has been conducted by leading scientists on planning loads in this situation . But a number of scientific of researchers in his work more sports improvement stage pupils exercise to the process attention they looked But big young athletes preparation according to research works take visited although , exactly teenager young athletes annual preparation downloads effective distribution have conducted sufficient scientific research on did not go Sports exercise in the cycle management and improvement sports theory in the methodology many annual and complicated from the processes is considered . Current in time light athletics short to the distance running types of sports of the results fast growth present in the field time to the requirements answer giving talented athletes looking for finding at the same time training exercises to improve the organization of the process on a scientific basis demand In addition , it is considered one of the urgent tasks in the field.

The purpose of the study: to determine the practical application of the methodology developed for short-distance runners and its impact on sports results.

Research objectives: Analysis of training programs for short-distance runners for sports competitions and scientific methodical literature.

- It consists in determining the impact on sports results through the development and practical application of the methodology of preparing short-distance runners for sports competitions.

Methodology and discussion: The 400-meter race is a complex sport that combines sprint and endurance characteristics and requires the highest level of physiological and metabolic load among all types of athletics. It requires the athlete to have maximum aerobic-anaerobic capabilities, the ability to maintain high-speed movements for a long time, a balanced technical approach, and high psychological endurance. 400-meter runners can be divided into two categories: the first is sprinters, and the second is middle-distance runners. Runners of both types have been achieving high results at a distance of 400 meters for many years. However, there are athletes who can run equally successfully both at sprint distances and at distances that require more endurance. Michael Johnson, a former student at Baylor University, is a multiple world champion in the 200 and 400 meters, as well as the current world record holder in the 400 meters. He is a shining example of a sprinter. Through years of training, Michael Johnson has developed a high-speed endurance. This has allowed him to maintain his incredible speed for longer periods of time and, as a result, run faster than his competitors.

To achieve high results in the 400-meter race, you need to distribute your speed and energy in the most efficient way possible. No one can run 400 meters at maximum speed. Therefore, if you have excellent sprinting ability and you do not know how to distribute your run by distance, you will never achieve maximum success. For elite runners, the difference between their best 200-meter time and the first half of the 400-meter race should be within one second, while lower-level runners will start the first 200 meters about two seconds slower than their best 200-meter time. There is a good formula for calculating your potential 400-meter race result. To do this, take your best 200-meter time, multiply it by two, and add 3.5 seconds to the result. However, it should be noted that the training must be structured correctly, if the training is structured incorrectly, the result for covering the second half of the distance will be less than 3.5 seconds. It should also be noted that in the 400-meter run, athletes who can run faster achieve the highest results than athletes who are more inclined to endurance. Because it is more effective to develop speed endurance, not speed. That is why, in

order to achieve maximum results at a distance of 400 m, training should be structured with sprints.

The main feature of the 400-meter race is a significant lack of oxygen. This means that oxygen consumption is lower than the level necessary for the supply of ATP. A unique feature of the 400-meter race is that the body's energy expenditure works in the creatine-phosphate lactate and anaerobic lactate modes. Therefore, it is very important to conduct training in these two modes. This teaches the athlete to cope with stressful situations, and the body gets used to and adapts to such loads. Later, the body gets used to these loads and performs supercompensation to adapt to such a working environment. The field of development and assessment of physical fitness of athletes is one of the important areas of scientific research in world sports today. The level of competition in modern sports is very high, and attention to every small change and detail is crucial for achieving high results. In particular, the development of the level of rapid endurance of sprinters is an important factor in their achievement of high results. Today's requirements require the organization of the process of training athletes in a scientifically based manner, as well as the improvement of training processes based on high technologies and innovative methods. The use of correct methods in assessing the level of fitness of sprinters is important not only for improving their sports results, but also for preventing injuries We have developed the following methodology to improve the speed endurance of sprinters. That is, during each training session, the trainees of the training group are given a barbell weighing 5-10 kg, fixed on both sides to the ground, and a rubber band is inserted through its hole.

The middle of this rubber is passed over both shoulders of the athlete, and the athlete jumps up and alternates legs once in the air. This is done based on the training of the athletes.

This exercise is performed 4-6 times with a rest-repeat method. This exercise helps the athlete to quickly It is an effective tool for developing endurance, not only in terms of speed - endurance, but also as a means of ensuring optimal strength in the start-off phase . In addition to this tool, we also paid attention to the development of special speed endurance by running 2+4+6x200, 2+4+6+10x400 m distances in training using the repeated rest interval method.

These exercises are used in the introductory, volume, intense, and pre-competition microcycles of the I - II basic and main competition preparation period. We have applied this technique to the practical process of special training as follows:

Sample structure of special preparation

Monday:

Light running 1200m

General development exercises - 12-15 min

Method of preparation - 15 min

Running exercises - 6x30 m

Sprinting - 4x60, 2x100m

4x30, 2x50, 2x60 m from the bottom start, maximum acceleration 80-85%

Light running - 4-5 min

Tuesday : Rapid endurance development

Light jogging 8-10 min

General development exercises - 12-15 min

Running exercises 6x50 m

Sprint 4x100 m

The method of preparation is repeated running 2x100, 1x150, 1x200 with maximum acceleration of 80-90%.

Light running - 4-5 min

Method of preparation: repeated running 2x100, 1x200, maximum acceleration 90%

Wednesday : Increase speed-strength and strength training

Light running - 7-8 min

General development exercises - 12-15 min

Sprinting - 3x100m

Long jump 25 min with 7-11 running steps (12 jumps)

Weight training (30-60 kg) - 3 times

Body recovery exercises light jogging 7-8 min

Thursday : Development of general endurance

Light running - 8-10 min

General development exercises - 12-15 min

Basketball - 30 min

Cross-country 5 km (1 km - 5.5 min).

Friday : Improving sprinting technique and developing speed-endurance skills.

Light running - 7-8 min

General development exercises - 12-15 min

Running exercises - 5x60 m

Sprinting - 3x100 m

Running from a low start 3x30, 2x40, 2x50, 1x60 m maximum acceleration 90%

Running from a low start 3x30, 3x40, 1x60 m maximum acceleration 96-100%

Repeat running 2x100, 1x150 m maximum acceleration 90%

Repeat running 2x400, 4x400 m maximum acceleration 90%

Saturday : Development of speed-strength qualities and special endurance

Light running - 7-8 min

General development exercises - 12-15 min

Sprinting - 3x100 m

Light running - 4-5 min

This method of training is used in the voluminous, intense pre-competition microcycles of the preparatory period. In order to determine the effectiveness of this used method, we paid attention to determining their physical fitness based on repeated tests. The obtained results are given in Table 1.

Table 1

Comparison of the dynamics of changes in the main statistical characteristics of physical fitness indicators of subjects belonging to the control (n = 12) and experimental (n = 12) groups during the pedagogical experiment"

		Group	Internship			End of experiment						
	NG		$\overline{X}$	σ	V, %	$\overline{X}$	σ	V, %	AO	NO	t	P
1	30 m running time (s.)	TG	4.72	0.61	12.98	4.03	0.49	12.15	0.68	14.49	3.02	<0.01
		NG	4.80	0.61	12.60	4.40	0.55	12.44	0.40	8.39	1.71	>0.05
2	60 m running time (s.)	TG	8.24	1.15	13.97	7.22	0.95	13.16	1.03	12.44	2.38	<0.05
		NG	8.13	1.11	13.59	7.40	1.00	13.45	0.73	8.98	1.70	>0.05
3	100 m sprint time (s.) s.)	TG	13.50	1.62	11.99	11.79	1.31	11.13	1.71	12.65	2.84	<0.01
		NG	13.15	1.53	11.63	12.13	1.39	11.43	1.03	7.79	1.72	>0.05
4		TG	28.55	3.99	13.98	24.48	3.21	13.12	4.08	14.27	2.76	<0.01

	200 m running time (s.)	NG	28.13	3.83	13.61	25.62	3.43	13.41	2.52	8.95	1.69	>0.05
5	400 m running time (s.)	TG	61.21	7.93	12.96	53.44	6.49	12.14	7.77	12.69	2.63	<0.05
		NG	62.78	7.91	12.60	57.45	7.13	12.41	5.33	8.48	1.73	>0.05
6	800 m running time (s.)	TG	138.89	16.65	11.99	120.71	13.44	11.13	18.18	13.09	2.94	<0.01
		NG	135.34	15.73	11.62	1	14.26	11.42	10.43	7.70	1.70	>0.05
7	Long jump, cm.	TG	205.17	26.64	12.98	236.92	28.71	12.12	31.75	15.48	2.81	<0.01
		NG	207.58	26.17	12.61	230.33	28.59	12.41	22.75	10.96	2.03	<0.05
8	Triple jump, sm	TG	602.17	72.07	11.97	678.83	75.61	11.14	76.67	12.73	2.54	<0.05
		NG	612.67	71.22	11.62	664.83	75.96	11.43	52.17	8.51	1.74	>0.05
9	Jump from place to place, cm.	TG	1698.25	237.44	13.98	1951.75	256.14	13.12	253.50	14.93	2.51	<0.05
		NG	1679.33	228.49	13.61	1845.17	247.53	13.42	165.83	9.87	1.71	>0.05
	Average relative growth, %	TG								13.64		
		NG								8.85		

Note: AO' is absolute growth, NO' is relative growth (in percent).

Comparison of the average arithmetic values of the physical fitness indicators of the subjects belonging to the control and experimental groups and the dynamics of relative growth during the pedagogical experience

At this stage of the research, the indicators of the physical fitness level of the test subjects in the experimental (T G) and control (NG G) groups were compared and statistically evaluated. For this, the results of running (short and medium distances), jumping exercises and the dynamics of their changes were studied as the main criteria of physical fitness.

The results of the pedagogical experiment show that at the beginning of the study, there was no significant difference in the levels of physical fitness between the experimental and control groups. However, as a result of the introduction of a specially developed training methodology to the experimental group, a significant improvement in the indicators was observed in the experimental group.

The increase in the 30-meter run in the experimental group was 0.68 seconds, which was statistically significant at $t = 3.02$, $P < 0.01$. The increase in the control group (0.4 seconds) was insignificant, $P > 0.05$.

In the 60-meter run, an increase of 1.03 seconds was noted in the TG ($P < 0.05$), while in the NG it was only 0.73 seconds ($P > 0.05$).

The increases in TG in the 100, 200, 400, and 800 meter races were also highly significant, reaching $P < 0.01$ or $P < 0.05$ in all cases. This indicates a significant improvement in the overall physical fitness, speed-endurance quality, and running technique of the athletes in the experimental group.

The long jump performance increased by 31.75 cm in the experimental group ($P < 0.01$), while in the control group this figure was 22.75 cm ($P < 0.05$).

The result of the triple jump was a growth of 76.67 cm in the T G ($P < 0.05$), while the growth in the N G was 52.17 cm, which was found to be statistically insignificant ($P > 0.05$). In the single jump, a growth of 253.5 cm ($P < 0.05$) was also observed in the T G, while this indicator was only 165.83 cm in the N G, which was found to be statistically insignificant ($P > 0.05$).

Average relative growth rates

In the general analysis of physical training, the average relative increase in the experimental group was 13.64%, while in the control group it was 8.85%. This confirmed the effectiveness of the specially developed preparation methodology.

The results of the conducted pedagogical experience made it possible to return the following conclusions:

The special training program implemented in the experimental group had a significant effect on improving the level of physical fitness. The absolute and relative growth in each running and jumping indicator was higher in the experimental group than in the control group. The analysis of the t-criterion and P-significance levels confirms the statistical reliability of the changes in the experimental group. The increase in the level of physical fitness has a positive effect not only on sports results, but also on functional training and injury prevention. The implementation of the used methodology in the future in the training of young school-age athletes, including athletes specializing in short-distance running, will allow them to positively change their sports results.

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