

Track And Field Speed Abilities Development Within 10-12-Year-Old Athletes

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Abstract: The paper presents a study of 10-12-year-old track and field athletes' educational and training process. The goal of the work was to improve the methodology for track and field speed abilities development.

During working on the problem of improving the methodology for 10-12-year-old athletes speed abilities developing, we used the following research methods: analysis of scientific and methodological literature, control tests, pedagogical experiment, mathematical and statistical methods.

The study was conducted at the Specialized Children and Youth Sports School of the Olympic Reserve. The study involved 20 students aged 10-12 years.

During the experiment, effectiveness of the proposed methodology for track and field speed abilities development for 10-12-year-old athletes was proved.

Keywords: training, track and field, speed capabilities, outdoor games, athletes.

Introduction

In the overwhelming majority of track and field types, a high level of speed abilities development is of decisive importance for achieving high sports results, for which primary school age (9–12 years) is considered a sensitive period of development [3].

However, the problem of young athletes sports training for many years causes controversy and disagreement among practicing coaches, as well as researchers in this field [1,2,4, etc.]

The main contradictions relate to the initial, basic stages of sports training, covering children and youth, and these stages are of paramount importance for achieving high sports results.

Based on the foregoing, the goal, objectives, object and subject of the study were determined.

The object of the study is educational and training process.

The subject of the research is the method of track and field speed abilities development.

The purpose of the study is to improve the methodology for 10-12-year-old athletes' track and field speed abilities developing.

Research objectives:

1. To review speed abilities general characteristics.
2. To review a methodology for track and field speed abilities developing.
3. To develop a methodology for 10-12-year-old athletes' track and field speed abilities developing.
4. To check effectiveness of the proposed methodology.

The study was conducted in three stages.

At the first stage, the scientific and methodological literature was analyzed to study the problem of 10-12-year-old athletes' speed qualities development, selection of work direction taking into account age characteristics, definition of a hypothesis, goal, clarification of objectives of the work, specification of research methods, study of practical experience.

At this stage, we also carried out a preliminary pedagogical experiment.

At the second stage, the main data of pedagogical research were collected, which was carried out in two stages:

Stage of preliminary experiment.

It was held at the Specialized Children and Youth Sports School of the Olympic Reserve and was aimed to solve the following tasks: adjusting and clarifying the methodology for conducting training sessions aimed at educating speed qualities; systematization of the program material of the developed methodology.

Stage of the main pedagogical experiment.

It was held at the Specialized Children and Youth Track and Field Sports School of the Olympic Reserve. 20 young men participated in the pedagogical experiment. Experimental and control groups were formed. The control group included 10 athletes. The experimental group also consisted of 10 athletes. At the end of the experiment, the composition of these groups did not change.

Trainings in each group were held four times a week for 1.5 hours. The experimental group was training using our developed method. The control group followed the standard program. At this stage, experimental data on effectiveness of the study were collected.

The experimental methodology was as follows: in the experimental group, one day of training was completely devoted to speed training, at the end of each practice outdoor games aimed at developing speed abilities were included.

At the third stage, analysis of the obtained experimental data, compilation of methodological recommendations for practicing teachers and trainers of Children's and Youth Sports School, implementation in practice of the results were carried out.

After six months, retesting was carried out.

We used the following research methods: analysis of scientific and methodological literature, control tests, pedagogical experiment, mathematical and statistical methods.

An analysis of obtained during the experiment data allows to state the following: before start of the experiment control and experimental groups were approximately at the same level of training, at the end of the experiment we observe an increase in the results in both groups, but index of the experimental group has more significant increase. The experiment results are presented in tables 1 and 2.

Table 1 Preliminary testing results

Control tests	Control group	Experimental group	Reliability		
	X ± m	X ± m	t	t- tab	p
30 m run	5.8 ± 0.1	5.9 ± 0.1	0.36	2.10	>0.05
60 m run	9.9 ± 0.12	9.8 ± 0.13	0.17	2.10	>0.05

After the experiment, differences between arithmetic means of some indicators of the two groups were significant.

Table 2 Final testing results

Control tests	Control group	Experimental group	Reliability		
	X ± m	X ± m	t	t- tab	p
30 m run	5.1 ± 0.1	4.8 ± 0.1	0.36	2.10	>0.05
60 m run	9.0 ± 0.12	8.8 ± 0.13	0.17	2.10	>0.05

Comparative analysis showed that the results improved in both groups, but the increase was different.

The value of game as a method is that goal achievement associated with the physical and mental efforts demonstration gives athletes a feeling of joy, satisfaction, creates desire to maximize their abilities. Emotional factor affects motor actions quality, rapid thinking, which is associated with physical and mental development.

The reason for the results growth in the experimental group, in our opinion, is difference in the conditions for performing exercises. When using traditional methods of developing physical qualities, athletes are forced to repeatedly perform the same exercises, while working capacity decreases, fatigue sets in, which leads to a refusal to perform exercises.

Thus, the research results allow to state that the increase in physical fitness level in all formed groups is of a progressive nature. The trends established in the experimental group show that use of the proposed program allows to more effectively influence physical fitness level, especially for speed-strength qualities development.

Bibliographic list:

1. Valik, B.V. To coaches of young athletes / Moskva: FiS, 1974. – 244 p.
2. Athletics: textbook for institutes of physical culture / N. G. Ozolin, Yu. G. Travin, V. P. Filin i dr. ; pod obshch. red. N. G. Ozolina i dr.. - 4-e izd., dop., pererab. - 4-e izd., dop., pererab.- Moscow: Physical culture and sports, 1989. – 670 p.
3. Popandopulo I.R. Athletes aged 10-12: development of speed abilities using the game method / I.R. Papandopulo, K.G. Tomilin // Improving the system of physical education, sports training, tourism, psychological support and rehabilitation of various population categories: materials of the XIX All-Russian scientific and practical conference with international participants – Surgut, 2020 – p. 640 - 649
4. Kholodov, Zh. K. Theory and methodology of physical education and sports / Zh. K. Kholodov, V. S. Kuznetsov – Moscow: Publishing Center "Academy", 2000. – 400 p.