



Improvement of speed abilities of young tennis players

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Dr. Sc.Phil., Professor **O.S. Mavropulo**¹
PhD, Associate Professor **S.V. Agafonov**¹
PhD, Associate Professor **S.N. Trufanova**¹
Postgraduate student **S.A. Chub**¹
¹Don State Technical University, Rostov-on-Don

Corresponding author: stepan.chud@mail.ru

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Abstract

Objective of the study was to theoretically and practically, we will demonstrate the efficacy of the approach to enhancing the speed capabilities of table tennis players.

Methods and structure of the study. The experiment was conducted using the resources of the Rostov-on-Don municipal budgetary institution of additional education «Sports School № 3». The analysis of literary sources, pedagogical observation, pedagogical testing, pedagogical experiment, methods of mathematical statistics are carried out. The direct participants of the pedagogical experiment were 20 young tennis players aged 9-10 years from the groups of primary training at the sports school (PT 3), 10 of whom were included in the experimental group and 10 players in the control group.

Results and conclusions. The outcomes of the trial demonstrated the efficacy of the devised approach in enhancing speed abilities during the educational and training regimen of the tennis players in the experimental group. It was observed that the implementation of specific sets of exercises and game-based activities had a beneficial impact on the performance of all speed-related abilities of the participants in the experimental group, who demonstrated a significant improvement compared to their peers who followed the conventional training program.

Keywords: *table tennis, speed abilities, physical training.*

Introduction. Changes in competition rules, improvements in sports equipment and facilities in table tennis have resulted in an increase in the dynamism and pace of the game, which requires athletes to have a high level of physical, technical and tactical, and psychological preparedness. However, it should be noted that often in sports schools, already at the early stages of training, coaches focus primarily on the technical and tactical training of athletes and do not fully pay attention to the targeted development of physical qualities, in particular speed, which is of decisive importance in the process of developing sports skills. This circumstance determined the relevance of our study, aimed at finding effective ways to improve the methodology for developing speed abilities in table tennis athletes at the initial stage of training.

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proach to enhancing the speed capabilities of table tennis players.

Methods and structure of the study. An experimental study aimed at improving the speed abilities of table tennis players at the initial stage of training was conducted from September 2023 to April 2024 at the Rostov-on-Don Municipal Budgetary Institution of Additional Education «Sports School No. 3».

During the study, a formative pedagogical experiment was organized and conducted, aimed at testing the developed sets of exercises and game tasks for compliance with the tasks to be solved to improve the speed abilities of young athletes. To test the effectiveness of the tools and methods used, a battery of tests was formed to assess all speed parameters important for the further growth of tennis players' sports skills.

At the end of the study, the data obtained during the pedagogical experiment were analyzed,

theoretical and practical conclusions were formulated.

Results of the study and discussion. Based on the initial data obtained during pedagogical observations of the educational and training process of young athletes in the table tennis department at the initial training stage of the third year of study, it was established that for the development of speed abilities, mainly general preparatory track and field and general developmental gymnastic exercises are used. Analysis of the results of ten training sessions showed that the sports training tools used are mainly aimed at developing the speed of holistic motor actions, and tasks for the speed of a single movement, for a simple and complex motor reaction are practically absent (Figure 1).

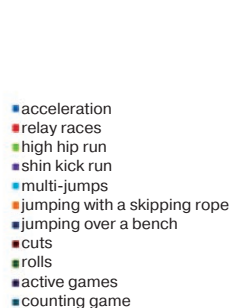


Figure 1. Composition and volume of funds aimed at developing the speed abilities of young tennis players

In order to correct the content of the educational and training process in the experimental group of initial training, sets of exercises and game tasks were compiled aimed at improving all forms of speed abilities necessary in the competitive activity of tennis players.

In particular, to improve the speed of a simple motor reaction, non-specific exercises for reaction speed were used, which were aimed at reducing the latent time between the preliminary and executive commands of the coach. To develop a simple motor reaction at the tennis table, game tasks and selected competitive exercises of a low degree of complexity were used with an installation for a quick response with a certain technical action (push, cut, roll) to a predetermined action of a partner or coach.

As part of the development of the speed of a complex motor reaction in tennis players from the experimental group, special preparatory exercises and game tasks were used with the modeling of holistic

competitive actions aimed at reducing the response time to a moving object. The content of the exercises contributed to the improvement of the reaction of choosing from several actions the most adequate in a given situation. During the experiment, when improving the speed of a single movement, necessary for tennis players both in attacking blows and in fast movements and movements near the table, special preparatory exercises with small weights and game tasks to increase the speed-strength capabilities of athletes were used.

The increase in the tempo of single movements and the speed of movements of young tennis players who trained according to the experimental program was carried out with the installation of performing exercises with maximum frequency, while in each subsequent approach it was necessary to try to exceed the result of the previous attempt.

To improve complex forms of manifestation of speed in young tennis players, both specific and non-specific means of sports training in table tennis were used with the use of repeated, competitive, game and variable exercise performance methods.

To test the effectiveness of the developed sets of exercises, a pedagogical experiment was organized and conducted over a period of six months with the participation of 20 young tennis players from the initial training groups of the third year of study, ten of whom were included in the experimental group, and ten in the control group. It should be noted that the difference in the indicators of the level of development of speed abilities between the participants of the experiment was insignificant.

During the formative pedagogical experiment, the control group studied according to the generally accepted training program approved in the sports school, and the content of the training sessions of the experimental group included specially developed sets of exercises and game tasks aimed at improving the speed abilities of young tennis players.

At the beginning and end of the pedagogical experiment, the athletes were tested for the level of development of speed abilities (see table).

Based on the results of the pedagogical experiment, a comparative analysis of all parameters of the speed abilities of tennis players aged 9-10 years revealed significant dynamics of their growth in the experimental group, which was reflected in the final values of the increase in all speed indicators (Figure 2).



Indicators of the level of development of speed abilities of tennis players aged 9-10 years at the beginning and at the end of the experiment

Test name	KG before the experiment	KG after the experiment	With growth in KG, %	EG before the experiment	EG after the experiment	At growth in KG, %
Single movement speed indicators						
Final strike to the distance of rebound from the table, m	3,1±2,74	3,5±1,16	12,91	3,3±1,25	4,1±2,48	24,24
Throwing a tennis ball for distance, m	4,2±0,64	4,4±1,34	4,76	4,4±0,79	6,5±2,47	47,72
Indicators of maximum frequency of single movements						
Tapping test by hands, number of times	26,4±3,01	27,2±2,12	3,90	26,8±1,33	31,3±1,23	16,75
Tapping test with feet, number of times	23,4±1,17	25,1±2,12	7,26	25,1±1,71	31,4±2,65	25,06
Indicators of simple and complex motor reactions						
Ruler test, cm	6,4±1,19	6,1±2,01	4,97	7,1±1,48	5,8±2,11	22,43
Stability of hitting the table, number of times	9,4±1,27	10,4±2,29	10,63	10,1±2,11	13,4±2,71	32,67
Speed indicators in integral motor actions						
20 m run, s	5,1±1,23	5,0±1,77	2,12	4,9±1,92	4,1±0,25	19,51
Movement in a 3-meter zone, number of times	15,3±1,57	16,7±1,78	9,15	17,1±1,45	20,3±2,02	18,71
Jumping rope, number of times	35,2±4,12	39,2±2,16	11,36	32,8±3,49	41,2±2,18	25,61

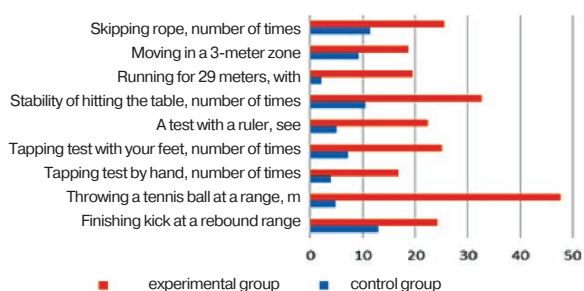


Figure 2. Increase in the level of development of speed abilities of tennis players aged 9-10 years at the end of the experiment

Conclusions. In the presented study, based on the data at the end of the experiment, the effectiveness of the developed method in the process of forming the speed abilities of young table tennis players

was proven. It was found that the use of special sets of exercises and game tasks had a positive effect on the indicators of all speed abilities of the participants in the experimental group, who began to significantly surpass their classmates who trained according to the traditional program.

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