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## Improvement of the technique of technical and tactical training of taekwondists-juniors

**Abstract. Purpose:** to improve a technique of technical and tactical training of taekwondists-juniors. **Material and Methods:** theoretical analysis and generalization of scientific and methodical literature, pedagogical supervision of educational and training classes and competitions, pedagogical testing, pedagogical experiment, methods of mathematical statistics. **Results:** a complex of special exercises is developed for the increase of the level of technical and tactical preparedness of taekwondists-juniors, practical recommendations are prepared. **Conclusions:** features of the performance of the most demanded technical and tactical connections in a fight of taekwondists-juniors are defined, significant correlation interrelations between the levels of technical and tactical and special physical fitness are revealed, results of the mathematical analysis testifies that the offered innovations authentically ( $p < 0,05$ ) promote the improvement of the level of technical and tactical preparedness of taekwondists-juniors.

**Keywords:** technical and tactical training, technical and tactical connection, a complex of exercises, improvement, taekwondo.

**Introduction.** Obtaining the urgent information on parameters of the executed technique or action represents a great interest both for a coach, and for a sportsman [1; 4; 6]. A video fixing of a performance of a technique as in vitro, and in the conditions of the competitive activity, a use of various devices allowing to record time intervals, accuracy, speed of separate technical elements in a combination etc. [3; 5; 8].

Values of the parameters received during measurements are important both at an assessment of level of readiness of the athlete, and by search of the components increasing efficiency of a technique of preparation can serve as means of collecting such type of information [2; 7].

**Communication of the research with scientific programs, plans, subjects.** The work is performed according to the plan of RW of Kharkov state academy of physical culture.

**The objective of the research:** to improve a technique of technical and tactical training of taekwondists-juniors.

**The tasks of the research:**

1. To carry out the analysis of references which are devoted to a problem of technical and tactical preparation in single combats.
2. To carry out the analysis of parameters of technique and to define interrelations with the level of special physical fitness.
3. To develop a complex of special exercises for the increase of the level of technical and tactical preparedness of taekwondists-juniors.
4. To prove experimentally the efficiency of a complex of special exercises and to provide practical recommendations about its use.

**Material and methods of the research.** There were used following methods for the solution of objectives: theoretical analysis and generalization of scientific and methodical literature, pedagogical supervision of educational and training classes and competitions, pedagogical testing, pedagogical experiment, methods of mathematical statistics.

**Results of the research and their discussion.** The research devoted to a problem of the increase of the level of technical and tactical preparedness took place in some stages. Studying of features of technical and tactical training of taekwondists-juniors is carried out at the first investigation phase. About 40 competitive fights of sportsmen of high qualification are analyzed, technical and tactical connections are revealed which are used in competitive fights for the purpose of a victory.

The determination of the level of technical and tactical preparedness of taekwondists-juniors ( $n=22$ ) and the level of technical and tactical preparedness of taekwondists of high qualification ( $n=3$ ) (MS of Ukraine, winners of republican and international competitions) was the following stage of our research.

The research of a tactical component of preparedness was limited to the definition of separate competitive situations and the selection of the most adequate technical actions.

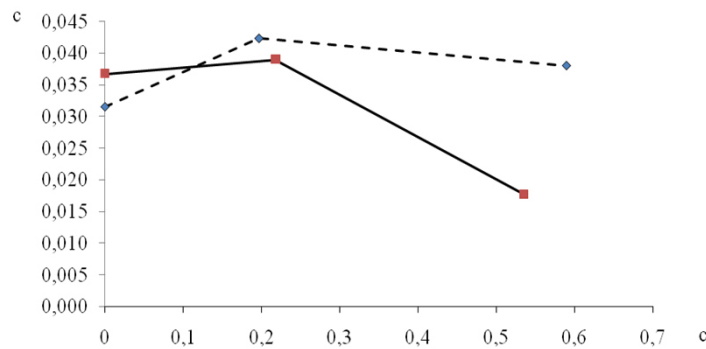
The research of a technical component was directed on the determination of such important parameters, as time of the performance of technical and tactical connection, time intervals between kicks, times of finding of an impact segment at a contact with a purpose, accuracy of a kick.

For carrying out these measurements sportsmen were offered to execute one of the most demanded technical and tactical combinations: two kicks ap joomuk chirugi to the top level – dollyo chagi in the average level.

The definition of time intervals was carried out with the use of the special device consisting of the sensors installed on a boxing bag, a controller of signals and a personal computer with the special software. Accuracy of measurements made 1/1000 s.

The results which were received during this research testified about some features of a performance of the offered technical-tactical connection (pic. 1).

So, the relative big duration of the 2nd kick by a hand is 14,9% more, than the duration of the 1st kick by a hand, it can be explained with the inclusion in the impact movement of bigger number of muscles, a consequence of that is also bigger value of time of contact with the purpose. The duration of a kick by a foot is on 55,3% less than the duration of the 2nd kick by a hand, it characterizes the final movement in a series which has to solve, in our opinion, two main objectives: to provide the protection after a performance of a final kick and a condition, favorable for continuation of the attacking actions that



**Pic. 1. Time intervals of the technical and tactical connection of ap joomuk chirugi to the top level – dollyo chagi in the average level:**  
 – model values; ---values of taekwondists-juniors

leads, eventually, to rather smaller time of a contact with the purpose.

This regularity (the duration of the 2nd kick by a hand is the greatest, the kick duration by a foot is the smallest) is observed at all qualified sportsmen who passed the test with a difference only in time spent for a performance of all combination, and time of a contact with the purpose of the 2nd kick by a hand that it is possible to explain them with individual distinctions.

Also in the course research the assessment of the level of high-speed and power abilities, explosive force is executed at examinees.

The pedagogical testing (13 tests) was held and the correlation analysis was made for the definition of interrelations between components of technical and special physical fitness.

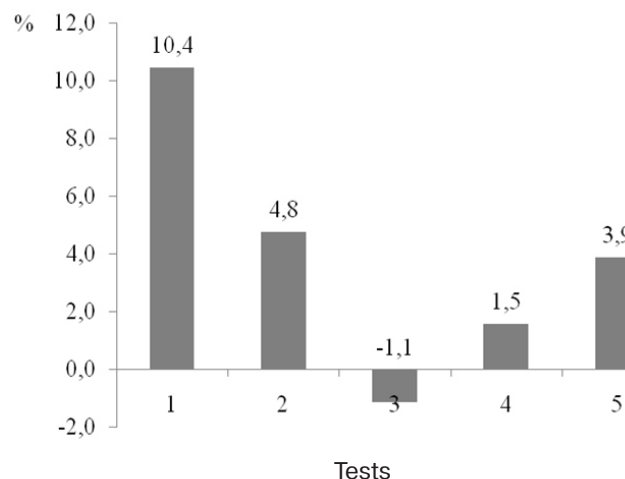
Following the results of the correlation analysis it is possible to emphasize the following provisions: a level of intermuscular coordination, a level of development of explosive force and a level of development of high-speed and power abilities (when performing the exercises of the general and special) influence for the period of the performance of technical and tactical connection.

Following the results of the conducted research the complex of special exercises is created and divided into three groups: exercises for the improvement of technique, exercise for the development of special physical abilities and exercise for the improvement of technical and tactical actions.

The pedagogical experiment was organized for a check of innovations in which taekwondists-juniors in number of 22 people took part.

Sportsmen were offered to execute five tests for a control of the level of technical and tactical and special physical fitness (T1 – a jump on a support, T2 – Dollyo chagi for 15 s, T3 – a performance of the technical and tactical connection (TTC) for 20 s, T4 – lifting of feet from the provision of a vis for 20 s, T5 – bending extension of hands in an emphasis lying).

The mathematical analysis of the received results testifies that the control and the experimental groups have no statistically reliable differences on the preparedness level at the beginning of experiment.



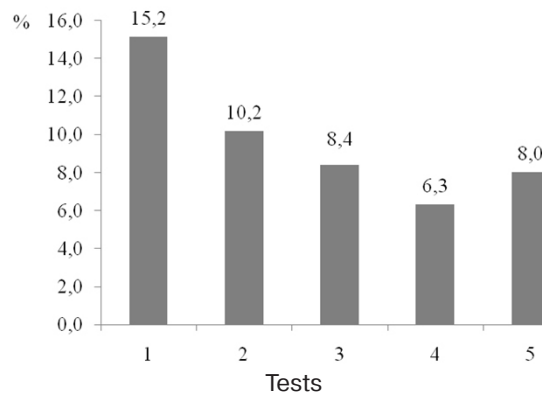
**Pic. 2. Distinctions in results of implementation of tests by sportsmen of the studied groups at the beginning of the experiment:** 1 – a jump on a support, 2 – Dollyo chagi for 15 s, 3 – a performance of the technical and tactical connection (TTC) for 20 s, 4 – lifting of feet from the provision of a vis for 20 s, 5 – bending extension of hands in an emphasis lying

Though differences are doubtful, but nevertheless the greatest distinctions are recorded at the implementation of the T1 test (A jump on a support) – 10,4% that testifies to a bigger level of the development of explosive force at sportsmen of the control group.

The set of exercises was created for the increase of the level of technical and tactical preparedness of juniors taking into

account provisions which were noted at the first investigation phase. The offered exercises were carried out throughout the whole pedagogical experiment, according to the following scheme: the first training of a week microcycle was devoted to the improvement of technique, the second – to the development of special physical qualities, on the third classes technical and tactical actions in couples and a work on shells were carried out, the fourth classes was devoted to a fighting practice which main objective is integrated preparation, and in particular, to the increase of the level of technical and tactical skill.

Total testing is held at the end of the pedagogical experiment. The mathematical analysis of the received results testifies that statistically reliable distinctions are observed between the studied groups (pic. 3).



**Pic. 3. Distinctions in results of implementation of tests by sportsmen of the studied groups at the end of the experiment:**

1 – a jump on a support, 2 – Dollyo chagi for 15 s, 3 – a performance of the technical and tactical connection (TTC) for 20 s, 4 – lifting of feet from the provision of a vis for 20 s, 5 – bending extension of hands in an emphasis lying

So, the greatest statistically reliable distinctions (pic. 3) of results of sportsmen of the experimental group from results of sportsmen of the control group are recorded when performing T1 (A jump on a support) – 15,2%, T2 (Dollyo chagi for 15 s) – 10, 2%, T3 (A performance of TTC for 20 s) – 8,4%.

#### Conclusions:

1. Following the results of the correlation analysis it is defined that the level of the intermuscular coordination, the level of the development of explosive force and the level of the development of high-speed and power abilities influence for the period of a performance of the technical and tactical connection.

2. The mathematical analysis of the received results at the end of the research testifies that the offered innovations authentically ( $p < 0,05$ ) promote the increase of the level of technical and tactical preparedness of taekwondists-juniors.

**Prospects of further researches.** It is planned to study interrelations of a level of the development of specific perceptions, such as feeling of a distance, time sense, feeling of a kick, feeling of speed with the level of technical and tactical skill of taekwondists-juniors for the purpose of the improvement of quality of an execution of technical and tactical connections in a sports fight.

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