WAYS TO ENHANCE THE SPEED IN TABLE TENNIS SPORT TRAINING AT THE LEVEL OF THE SECOND FORMATIVE PHASE

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Abstract: Introduction. The process of preparing performance in table tennis requires the training of table tennis players and keeping the performance to a level as high as possible. Training begins with the selection of players and continues with an educational process of formation of sportsmen personality consistent with the requirements of specific sports performance in modern table tennis. Methods. Thus, this paper aims to identify the best strategies that lead to optimizing speed training in junior tennis players. For 5 months, 12 subjects (male, aged 8-11) had in their workouts means directed mostly to speed development. Results. At the end of training significant progress was identified in all tests, thus speed emerged as significantly enhanced.

Key words: tennis table, speed training, junior.

Introduction

Table tennis competition has become very fierce, competitors trying to surprise and overcome their opponents, always looking to find new ways and solutions that contribute to improving the game and training process. The modern table tennis requires very good motor abilities like speed, agility, strength, endurance, balance and good reflexes and sense of touch [1]. Speed of movement is along with the coordination and movement touch, the important feature of many tennis specific movements [2].

Acceleration speed is the individual's ability to cover a given space in a short time [3] V. Tudor, 2005, p. 108) and is regarded as a complex form of manifestation of speed (A. Demeter 1981, p. 38) [4] expressed by the relation between space and time [1] (V. Tudor, 2005, p. 108). Acceleration speed is thus a complex form of manifestation of speed with maximum quickness, rapidly completing a distance, which is in a relative interdependence with other manifestations of speed and influenced by other motor quantities - power, agility, endurance.

The aim of our work was to identify experimentally the most effective teaching strategies to improve speed in table tennis sport training at the level of the second formative phase.

Method

For 5 months, work programs which had musical media in its structure intended to interfere with the development of speed , among which: Running with active knees lifting; speed Running on 20 m in groups of 4-8 students on auditory stimuli in competition; Running with different tasks to auditory signals (shouts a name, answer a question, etc) were applied 2 times per week to a total of 12 athletes (aged between 8-11), working at CSS Craiova, Dynamic games; defense of the entire table with frontal light, an opponent which will direct the balls mainly to the sides of the table; counter forehand on 3 quarters of table, forehand directed only towards the opponent; combined counter alternatively forehand and backhand directed from the backhand corner, on the left half of the table, directed at the opponent's backhand; counter from all mass freely routed with permanent change of distance from the table, combining counters next to the table with the remote ones, were implemented.

The subjects were tested before and after implementing the work programs, the tests were:

speed Running - 50m. Technical specifications. Horizontal running color ground. standing Start, timing the motion without shoes with nails. Results are recorded in seconds, tenths and hundredths. We give two attempts with a 15 minute- break. We record the best.

10 x 4m lateral displacement. Description: we mark a 4 m wide lane; we place a pole that can be hit without falling 30cm outside the lines elastic aisle. Execution: lateral movement with footsteps add up until the sole of the foot on the direction of displacement touches the aisle, followed by the line change in the opposite direction. When the direction of the game changes, the game hand touches the pole through a similar movement of the ball hitting racket, either backhand shot or forehand or, if

applicable. We are timing the required interval for 10 lateral displacements, displacement being a 4m displacement.

10 x 4m forward-backward displacement. Description: we mark a 4m aisle with two lines; 50cm outside the front line, outside the aisle we place an elastic pole. Execution: forward and backward *displacement* with added steps. Every *forward displacement* they have to touch the pole with the game hand. The sole of the foot on the direction of displacement must touch the marking line.

In this research, we used a 4 motor control tests. For each of the proofing tools we have done the following determinations for each of the two tests, initial and final.

1. arithmetic mean of data string;
2. the deviations from the arithmetic mean of each value and their sum;
3. variance or dispersion of data string;
4. standard deviation;
5. coefficient of variation;
6. ,, t "- value student test;

In this way, through specific methods and techniques of scientific research we can support assertions concerning the homogeneity of the group and veracity of data and information.

Table 1. The value of determined parameters - 50 m sample

Nr. crt.	determined parameter	Initial test	Final test
1	arithmetic mean	8,51”	8,35”
2	The Sum of deviations from the arithmetic mean	6,7”	6,0”
3	Variance	0,61	0,55
4	standard deviation	0,78	0,74
5	Coeficient of variation	9,16	8,86
6	Student test	2,60	2,47

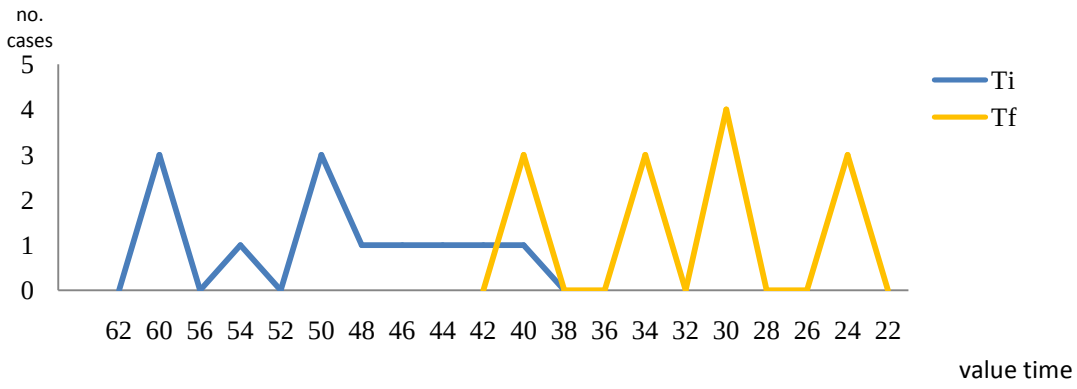

Figure 1. Representation of the distribution of the results according to the values from initial testing to final testing

In the speed running test - 50 m with standing start, the arithmetic mean between two test results achieved by the experimental group shows an increase of 1.6 tenths of a second, in six cases the progress being 2 tenths. The coefficient of variation / variability has values of 9.16 and 8.86 is below 10, suggesting a lower dispersion and a high homogeneity of the group. ,, T test "has a calculated value of 2.60, 2.47 respectively. At a significance level of 0.05 and a confidence level of 95%, the value of,, t "critical, according to student test while the group of 12 people is 2.20. ,, T test calculated values "means that there are more than 95% chance that the effect is the consequence of the underlying causes and not accidental. In this case the null hypothesis is rejected and the working hypothesis admitted.

Table 2. Value of parameters determined in the test of 10 x 4 m lateral displacement

Nr. crt.	determined parameter	Initial Test	Final Test
1	arithmetic mean	15,9”	15,6”
2	The Sum of deviations from the arithmetic mean	12	12
3	Variance	1,09	1,09
4	standard deviation	1,04	1,04
5	Coeficient of variation	6,54	6,67
6	student test	3,48	3,48

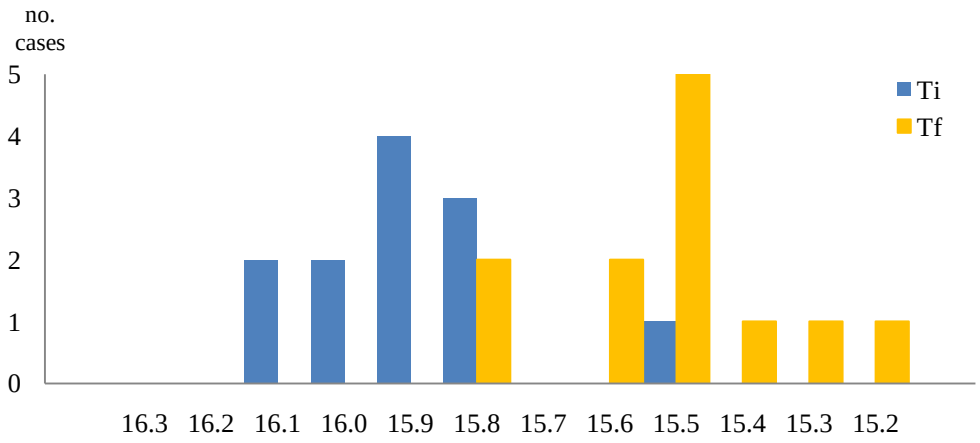

Figure 2. Representation of the distribution of the results from the experimental group initial testing and final test 10 x 4 m lateral shift

In the test of 10 x 4 m lateral displacement, of specific speed, the average of the results of the experimental group increased between the two tests with three-tenths, respectively 1.92% (Table 10.2). There is an increase in the block data seen in the results as the sum of the difference of the arithmetic mean is maintained the same through the two tests. Variation of the experimental group is 1.09 in the initial testing, being maintained in the final one. As a result the standard deviation is equal in the two tests of 1.04 and the coefficient of variation is 6.54% and respectively 6.67%. Both values being below 10% indicates a small dispersion of homogeneity of the large group. ,, T "calculated has a value of 3.48 and is larger than ,, t" critical for a group of 12 subjects, while the materiality / trust threshold of 0.01% is 3.11. In these circumstances, t "calculated is higher than,, t" critical for a significance threshold of 0.01% , the probability that the test results be the consequence of other variables, unchecked, is less than 1%. Therefore, the null hypothesis, considering that the results are the effect of experimental interventions as in the alleged assumptions. The curve distribution of values in the two tests is relatively normal for each test, with the mention that in the final testing it is shifted to the right, as a consequence of the results changes.

Table 3. Value of determined parameters in the test 10 x 4 m displacement Forward - backward

Nr. crt.	Parameter	Initial Test	Final Test
1	arithmetic mean	16,4”	16,1”
2	The Sum of deviations from the arithmetic mean	12”	12”
3	Variance	1,09	1,09
4	standard deviation	1,04	1,04
5	Coeficient of variation	6,09	6,45
6	student test	3,52	3,52

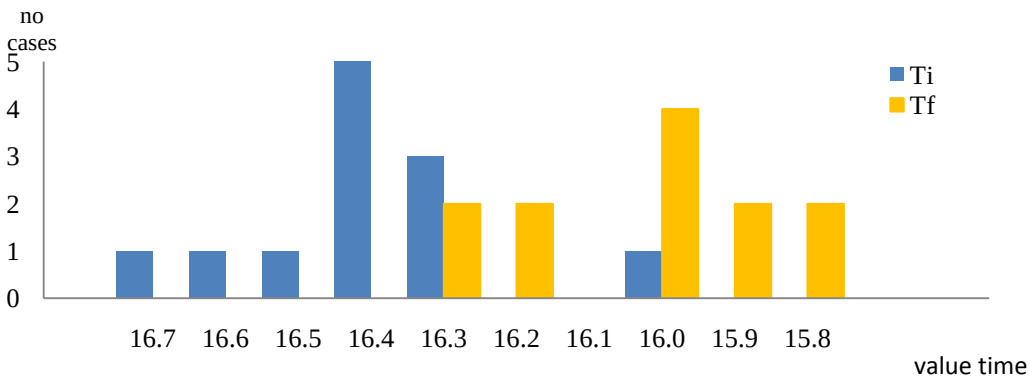

Figure 3. Representation of the results distribution from the experimental group initial and final test 10 x 4 m Forward - backward

Table 10.3 and 10.10 chart are given parameter values statistics in the test of 10 x 4 m Forward - backward and the distribution of results obtained by each member of the experimental group is plotted. We found the same trends as in the test described above: the arithmetic mean is growing from a test to another - 16.4 / 16.1 – the difference of individual values from the average is constant from a test to another - 1.2 / 1.2 sec., an aspect that makes a variation of 1.09 and standard deviation equal to a 1.04.

The coefficient of variation of 6.09 and 6.45 in the two trials indicate a low dispersion of values and a high homogeneity of the experimental group. Test,, t "calculated is 3.52, higher than,, t" critical for a significance threshold of 0.01%, which is 3.11. This means that the probability that the effect is due to other causes is less than 0.01%, which results in statistical confidence. This provides the basis for rejection of the null hypothesis and the admission of the assumptions as valid. The distribution of the values is normal for a selected group of athletes and shows at the same a trend shift to the right of the curve values as a result of growth in performance.

Conclusion

The developments in modern society in general and especially in sports performance lead to a general conclusion that continuous improvement is a requirement, a social and performance one. This involves development, upgrades and adaptations in multiple ways, including the promotion of scientific research in support of performance. The role of physical training was considered significant in recent years in many sports, especially team sports in the area, including the table tennis. This guidance was generated by changes in regulations and training of systemic vision on the training factors according to which, the expression of superior technical and tactical indices was not possible without motor qualities to sustain technical expression at the targeted performance levels.

Acknowledgement

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