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4th International Scientific Conference SEC-IASR 2019,  
Galati, Romania, 7th – 8th June, 2019

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<https://doi.org/10.18662/lumproc/sec-iasr2019/27>

**How to cite:** Moiescu, P.-C., & Bucătaru, R.-M. (2020). Comparative Study on Effectiveness of Different Methodologies to Improve the Forehand and the Backhand to Tennis Players at the Age of 7-9 Years. In S. Marin & P. Moiescu (vol. eds.), *Lumen Proceedings: Vol. 12. 4th International Scientific Conference SEC-IASR 2019* (pp. 252-263). Iasi, Romania: LUMEN Publishing House. <https://doi.org/10.18662/lumproc/sec-iasr2019/27>



# Comparative Study on Effectiveness of Different Methodologies to Improve the Forehand and the Backhand to Tennis Players at the Age of 7-9 Years

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## *Abstract*

*In classic tennis, learning process has been running for several years, being a long activity, the volume of skills and knowledge acquisition running for a longer period (6-8 years). Then, depending on the progress and differences between the children, their preparation will be individualized. Tennis 10s is a program that was created and implemented by the international tennis federation (ITF) in the early 2000s, as an integrated part of a campaign named „Tennis Play and Stay”, officially launched in February 2007, aiming to increase the practice of tennis all over the world. In the last period tennis has become more popular in Romania due to the exceptional international result of the athletes representing this sport. An important role is played by the integration of modern training methods, borrowed from abroad, in Romanian tennis clubs. Practically, coaches from Romania adopt the classical training methodology, the training methodology from “tennis 10s” or a mixture between them. Through this work I want to see by what method of training tactics are develop more pronounced, at 7-9 years-old tennis players, from the point of view of direction and amplitude in forehand and backhand. At the same time, through applied tests I will also discover if there are any substantial differences in the motion technique caused by balls having a different inner pressure.*

**Keywords:** tennis 10s; tactical training; training methods.

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## 1. Introduction

Tennis in Romania is currently learning through several methods. For this reason, I want to learn the tactical efficiency of the two main learning methods: „classical method” and „tennis 10s”.

Over time, the experience gained through numerous studies concluded that playing tennis requires a specific set of qualities and skills pegged well factors sports training and methodology training should be based on the extremely deep general issues of the sport on, especially between ages before 10 years.

The early preparation of children in sports is a problem that began to be discussed many years ago. According to Alexe N. [1] "the particularities of the motor selection are determined by the age at which the selection is made", in some branches of sport, there are still conflicting points of view, but this is generally determined by the following factors: age, psychomotor characteristics, possibility of predicting somatic development, manifestation of motor qualities, etc.

But, often, children's sports training programs imitate those of elite athletes who, through their results at national and international levels, have captured the imagination of young athletes and their coaches, especially since "they are often copied. , to the smallest details, without weighing the degree to which they serve the interests of young sportsmen "[5], [9].

This issue was also addressed in the tennis game, especially since the subject had not been discussed previously. Cristea E. [2], [3] stated that there are pros and cons for the early training of children in tennis, a preparation that was based almost exclusively on the technical side. The author is of the opinion that "until the age of 12 could not speak of the opportunity of an early specialization".

For many tennis coaches, the main method by which the subjects learn what they are taught is the practice, "this exercise being done, either isolated on a technical process or in combinations, by linking several technical procedures in the form of actions of game". To this method is added the questioning, which "develops creative thinking, imagination, the ability to generalize in the activity of subjects" [8].

Another point of view of the methodology of learning the technique of tennis game, assumed by a series of coaches, brings to the fore the use of explanation and demonstration, methods that have a main role in creating a correct, accurate representation of the movement but, in their opinion, "In practice using all the methods, knowing that one complements the other" [6].

With regard to the main methodological requirements of the preparation for the age of 7-10 years, they need to consider the primary selection and the selection for the formation of value groups, the positive influence of the processes of growth and harmonious physical development, the performance of a general physical training, with emphasis on priority development of speed and skill, enrichment of motor luggage, by using dynamic games, initiation in the acquisition of the main technical procedures and some notions of tactics, the gradual preparation of the children for participating in competitions, the acquisition of specific theoretical notions (the game regulation, technical, tactical, personal hygiene, etc.) [4].

In the last years, the idea of Tennis 10 appeared, which is a program created and implemented by the International Tennis Federation (ITF) in the early 2000s, as an integral part of a campaign entitled "Tennis Play and Stay", and Tennis 10 FRT is a project of the Romanian Tennis Federation, which wanted, from 2014 to implement, in an adapted form, the concept of Play and Stay Tennis 10.

FR Tennis [9] states that the program "Tennis 10 FRT" is a method of teaching, training and competition that adapts to all ages between 4 and 10 years. The principles on which it is based refer to the creation of good training and competition conditions using light balls according to age, rockets of different sizes and weights depending on age and individual somatic aspects, as well as fields with progressive dimensions; organizing competitions specific to the age level: short matches, more to have different opponents, organization of several events during a month, or calendar year; team or individual matches; simple scoring system.

"Tennis 10 FRT" is designed from 3 progressive levels, starting with red (level 3) then orange (level 2) and finally green (level 1).

Starting the program "Tennis 10 FRT" required the organization of a special structure for players up to 10 years, through three stages / levels, in colors: red, orange and green, through these stages being created a series of steps that allow the players to progress through a methodology adapted to their age, abilities and bio-psycho-motor potential.

In this process the size of the field, the length of the missile, the speed of the ball and the duration of the game increase until the player is ready to move to the big field and use the yellow ball (normal).

Stănescu R. [7] states that, in order to enter this competition, players must reach a certain level demonstrated by promoting the "White Test", which is a stage, prior to participating in the "Tennis10" competitions. The "White Test" appeared from the desire to find out if each child, in part, has reached a certain technical-tactical stage necessary to enter the "Tennis 10" tournaments and is considered a mini-exam for children who think they can

enter the track. This concept and consists of evidence for assessing the skills and theoretical knowledge accumulated, necessary for children to face the competition. The tests for the "White Test" are the technical test and the skill test.

## **2. Problem Statement**

The tennis 10 concept is quite abstinent among coaches in Romania. This concept has many advantages but because it is not very easy to apply is not used by many or if it is not fully integrated. In turn, the classic tennis learning methodology also has its advantages.

This article aims to evaluate the two methods by comparing the level of technical and tactical training of athletes from different learning environments (classic tennis and tennis 10s).

## **3. Research Questions/Aims of the research**

As the main hypothesis I will go from the question: which of the two methodologies is more successful among 7-9 year olds.

The second hypothesis is that tennis 10 with age-appropriate equipment is one of the most effective. Of course I will focus only on the tactical side making it impossible for me to do a complete research, only in this article, from all aspects of the training.

Objectives include the discovery of groups of athletes in the age group of 7-9 years who are trained by the two representative methods; performing a test package to assess the initial and final performance of the groups and their comparison in terms of technical-tactical orientation.

## **4. Research Methods**

In this research we used the following methods: the theoretical analysis of the specialized literature; pedagogical observation; test method; graphic and spreadsheet method, method of pedagogical experiment; statistical and mathematical methods for processing and interpreting data.

The experiment was conducted in Braila at the "Omega" tennis club where the witness group are trained and the tennis club "NFS Braila" where the experiment group was formed.

The initial tests were carried out between 02.02.2019 and the final ones on 02.05.2019. During these 3 months of training, the groups came three times a week and trained for 90 minutes. I mention that the athletes in

the control group were trained by the classical method and those in the group experiment by means of tennis 10.

In order to be able to assess the performance before and after the training, we made two tests that highlight the tactical aspect of the groundstrokes and especially the direction and length of the ball.

In the first test, 10 forehands and 10 backhands will be executed with a maximum of 60 points. The player will be placed on the bottom line and the one who launches the balls will be located around the net, on the other side it. The target area will be divided into 5 zones as follows: by marking 2 lines parallel to the side lines, 3 equal zones. We will use the service line to delimit the service area and the forbidden area. Thus, the central area will be 1 point and the side 2 and 3 depending on the length of the ball. The wrong ball does not score. I specify that before each test will be given 5 minutes of specific warm up for each individual sport.

In second test, 10 forehands and 10 backhands will be executed with a maximum of 60 points. The player will be placed on the bottom line and the one who launches the balls will be located around the net, on the other half court. The court is divided into 2 large areas using the service line (forbidden area and service area) and in 2 areas for observing the length of the balls by drawing a line parallel to the net on the median of the forbidden area. Any ball sent to the service area is worth 1 point and in the forbidden zone 2, respectively 3 depending on the approach to the bottom line from the opponent court.

The control group consisted of 6 athletes aged 7 to 9, 3 girls and 3 boys. This group was prepared after the initial testing by classic tennis learning methods using full size rockets and yellow balls. As we observe in the initial tests, both in Test 1 and Test 2 results are relatively close.

In final testing there is an improvement in the results, which demonstrates that the classic tennis teaching methodology has a positive effect. The cumulative score of all the athletes in the control group was +46 points. This score is the result of adding extra points to the final tests.

The experiment group consisted of 6 athletes, 3 girls and 3 boys aged between 7 and 9 years. This group was prepared after initial testing by tennis 10, using rackets of a size correlated to the height of each (23inch, 25inch or 27 inches) and used the green ball (75% pressurised). As we can see in the initial tests, the results are roughly similar, but the final test shows substantial growth. This aspect demonstrates that tennis 10 is one that gives positive results.

The total cumulative score was in the experiment group of +104 points. This score is the sum of the points obtained in addition to the final tests.

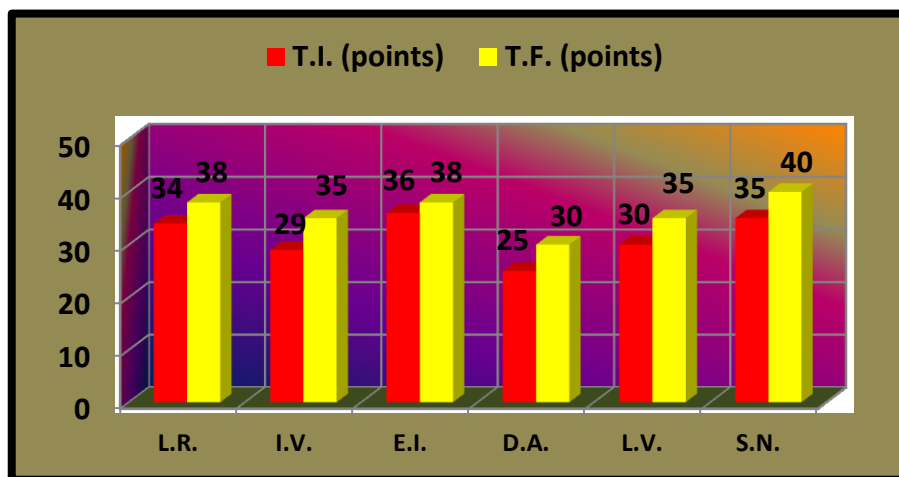
## 5. Results and discussions

The validation of these data and their credibility can be questioned due to the short training time at which the athletes were subjected. However, the results are extremely visible among both groups given that the age at which the subjects are located is an intermediate with a major increase in tactical effectiveness.

**Table 1.** Initial and final test 1 - control group

	Initial	Final
L.R.	34	38
I.V.	29	35
E.I.	36	38
D.A.	25	30
L.V.	30	35
S.N.	35	40

From table 1 it is noted that the largest amplitude(W) was found at I.V. =6 points(a progress off 17.15%), and the smallest was found at E.I.=2 points (5.27%).

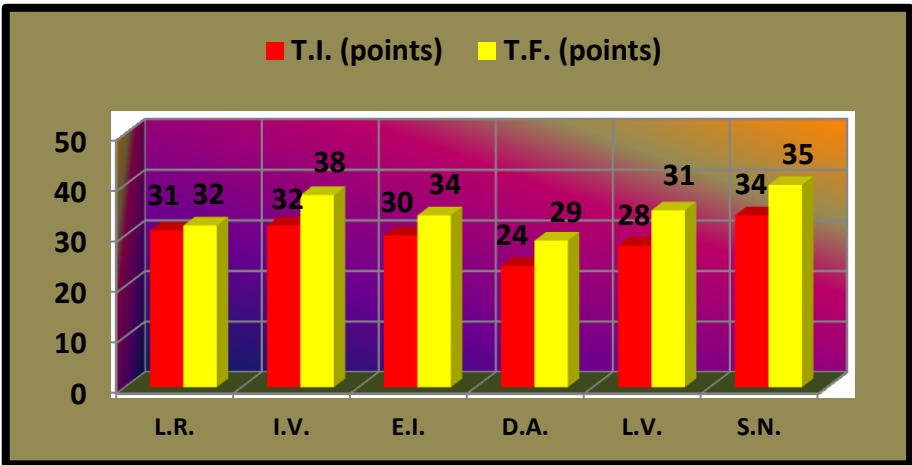


**Fig. 1.** The graphical representation of the initial and final values of the individual test 1 - Control group

**Table 2.** Initial and final test 2 - control group

Name	Initial	Final
L.R.	31	32
I.V.	32	38
E.I.	30	34
D.A.	24	29
L.V.	28	31
S.N.	34	35

From table 2 it is noted that the largest amplitude (W) was found at I.V. =6 points (a progress off 15.79%), and the smallest was found at L.R and S.N=1 point (3.12%);(2.86%).



**Fig. 2.** The graphical representation of the initial and final values of the individual test 2 - control group

**Table 3.** Initial and final test 1 - experimental group

Name	Initial	Final
D.B.	31	40
M.R.	36	43
B.D.	32	42
M.V.	37	48
D.M.	35	40
R.T.	32	39



From table 3 it is noted that the largest amplitude(W) was found at M.V. =11 points (a progress off 22.92%), and the smallest was found at D.M. =5 points (12.5%).

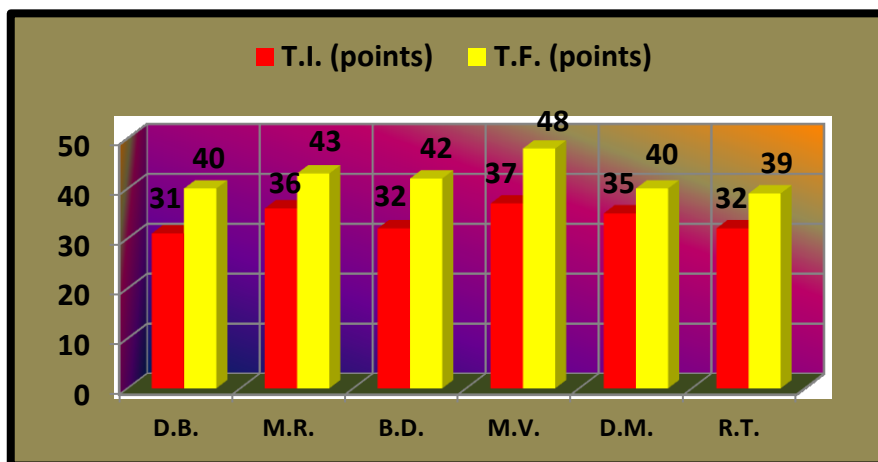
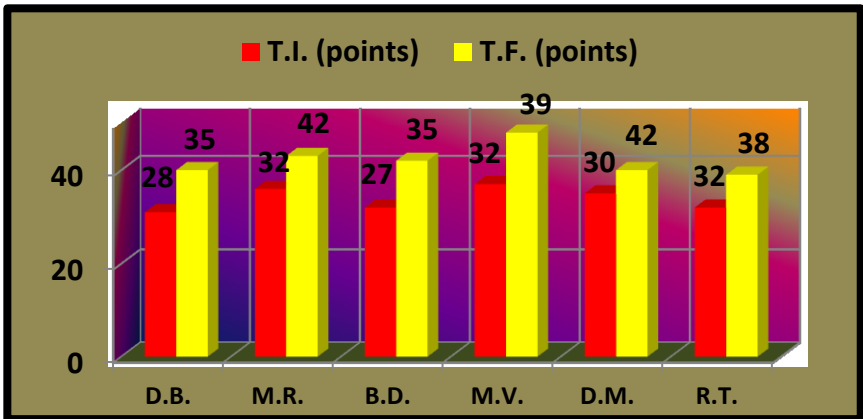


Fig. 3. The graphical representation of the initial and final values of the individual test 1 - experimental group

**Table 4.** Initial and final test 2 - experimental group

Name	Initial	Final
D.B.	28	35
M.R.	32	42
B.D.	27	35
M.V.	32	39
D.M.	30	42
R.T.	32	38

From table 4 it is noted that the largest amplitude (W) was found at D.M.=12 points (a progress off 28.58%), and the smallest was found at R.T=6 points (15.79%).



**Fig. 4.** The graphical representation of the initial and final values of the individual test 2 - experimental group

In test 1 it is found that the values of the arithmetic means of the results obtained by the experimental group (8.17 points) are higher than those obtained by control group subjects (4.50 points). Also, the rate of progress is more relevant at the experimental group (19.46%), compared to that calculated in the control group (12.50%). The standard deviation had an evolution with better values in the experiment group which means that the individual results deviate from the central values of their rows, with smaller values and, in this case, their dispersions are smaller, the homogeneity of the rows being better.

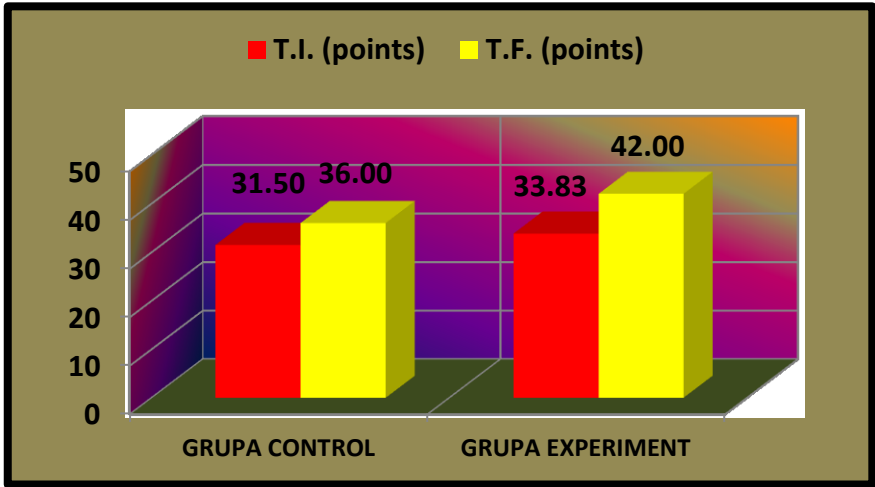
The coefficient of variability has values that show high homogeneity of results (between 0-10%) in both tests and in both groups,

The values of "t", calculated for the initial and final results of both groups, are higher than the 0.01 threshold in Fisher's Table, so that the differences are significant with a 99.00% certainty and the risk of being wrong in preparation or the exercises were not good, it is only 1.00%.

**Table 5.** The results of the statistical calculation in test 1

	Control Group		Experimental Group	
	T.I	T.F	T.I	T.F
$\Sigma$	189	216	203	252
$\bar{x}$	31.50	36.00	33.83	42.00
$\pm S$	4.23	3.52	2.48	3.28
C.v	13.41	9.78	7.33	7.82
t	7.99		8.97	
p	>0.01		>0.01	

**Fig. 5.** Evolution of the mean values obtained in test 1



In test 1 it is found that the values of the arithmetic means of the results obtained by the experimental group (8.34 points) are higher than those obtained by control group subjects (3.33 points). Also, the rate of progress is more relevant at the experimental group (21.66%), compared to that calculated in the control group (10.05%). The standard deviation had an evolution with better values in the experiment group, the individual results deviating from the central values of their rows, with lower values, the dispersions being small.

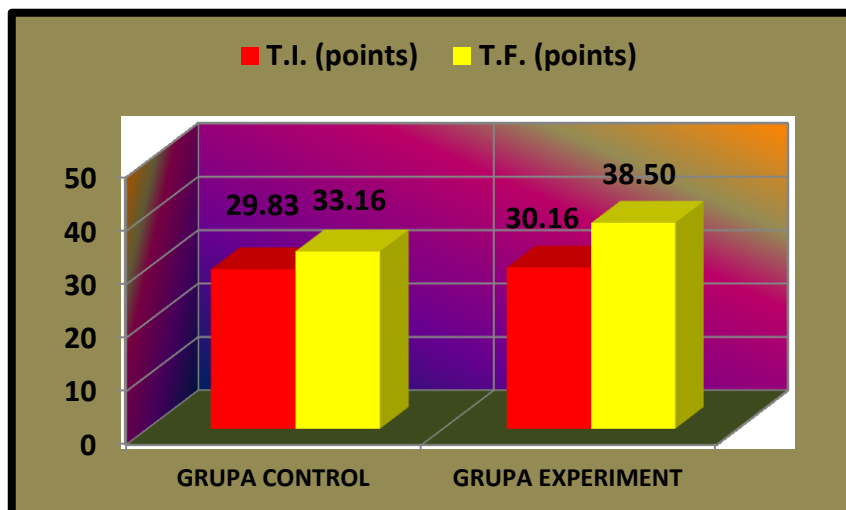
The coefficient of variability has values that demonstrate high homogeneity of results (between 0-10%) in both tests and in both groups, except for the initial testing in the control group where homogeneity is average (between 10-20%).

The value of "t", calculated for the initial and final results in the control group is higher than the threshold of 0.05, so the differences are significant with a 95.00% certainty, and in the experimental group the value of t is greater than the threshold of 0.01, in this situation the differences being significant with a safety of 99.00%, and the risk of being wrong in preparation or that the exercises were not good, is only 1.00%.

**Table 6.** The results of the statistical calculation in test 2

	Control Group		Experimental Group	
	T.I	T.F	T.I	T.F
$\sum$	179	199	181	231
x	29.83	33.16	30.16	38.50

$\pm S$	3.48	3.18	2.22	3.14
C.v	11.69	9.61	7.38	8.17
t	3.95		9.06	
p	>0.05		>0.01	



**Fig. 6.** Evolution of the mean values obtained in test 2

## 6. Conclusions

After analyzing the data from the performed tables, we notice an improvement of the results both in the control group and in the experiment. The tests were designed to highlight the tactical aspect of the game in the age range of 7-9 years, and more precisely to target left and right strokes in terms of both length and laterality. However, after a comparison of the score obtained in the final tests of both groups, we can say with certainty that the experiment group, thanks to the applied method, obtained far better results than the control group.

This is confirmed by one of the assumptions that tennis 10 is more efficient than the classic method because it uses lighter balls, rockets suitable for the height of each athlete and means of training specific to age. Also, the classical method that can have a high efficiency but at the age of 10 years should also be omitted.

## References

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- [1] Alexe N. Antrenamentul sportiv modern. București: Editis; 1993. 78 p.
- [2] Cristea E. Tenis. Aspecte ale pregătirii copiilor și juniorilor. București: Stadion; 1972. 93 p.
- [3] Cristea E., Năstase I. Tenis. Bucharest: Sport –Turism; 1975, pp. 222-241.
- [4] Moise DG. Teoria tenisului modern.Vol. II. București: PRIN'Tnet; 2002. pp. 119-120.
- [5] Muraru A. Caietul antrenorului. I & II. București: C.N.F.P.A, Școala Națională de antrenori; 2004. 9 p.
- [6] Segărceanu A. Tenis pentru copii. București: Sport-Turism; 1989. 14 p.
- [7] Stănescu R. Tenis. Fundamente teoretico-metodice. București: Editura Bren; 2014. pp. 71-76
- [8] Teușdea C. Tenis. Specializare. București: Editura Fundației „România de Măine”; 2002. pp. 144-145.
- [9] Federația română de tenis. Available from: <http://www.frt.ro/ro/statice/tenis-10-frt>.