STUDY ON THE PERCEPTION OF TENNIS COACHES IN THE NORTHEASTERN REGION OF ROMANIA REGARDING SERVE LEARNING IN CHILDREN

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Abstract: On a national level, the methods of teaching tennis represent a subject that is not sufficiently addressed, compared to the size of Romanian tennis in financial, material and, last but not least, performance terms. At present, we can say that there are still too few scientific papers dealing with tennis teaching, especially at the children's level. This fact is not beneficial for the practical activity, considering the importance of the methodology of learning technical-tactical actions, from the beginning of the training. In our opinion, addressing this subject, so important but at the same time so little discussed in the national literature, can lead to results that can be used later on the court, in children's training. The objective of the research is to highlight the perception of tennis coaches on the main technical-tactical aspects of the methodology of teaching the serve in tennis singles at the children's level. At the moment there is a relatively scarce literature in Romania addressing the issue of service learning in children. A poor technique cannot give great results in the long run. We hope that through this paper we will be able to arouse the interest of Romanian tennis coaches in the elaboration of papers and books on the methodology of serve teaching at children's level.
Keywords: *tennis, serve, learning.*

Introduction

Since the 1950s (at least), tennis serve was investigated in order to find differences in the serving movements (measured in terms of accuracy and speed) which could be related to athletes' success (see Johnson, 2013). In the present, the use of technology helps tennis coaches to investigate the kinematics and kinetics of the tennis players, the ball trajectory and speed, these aspects making possible a quantitative evaluation of the tennis serve (Tubez et al., 2017). Therefore, the coach's vision must be complemented by technology in order to observe (with great precision) high-speed motion and gesture. Many tools exist to analyse the tennis serve, the aim being to improve the biomechanics of the stroke.

Considering the tennis serve, it seems that the trophy position is very important. „This position usually corresponds to the racquet high point (RHP) during the preparatory action for the stroke" (Whiteside et al. 2013). This position appears different on adolescents, children and adults, is an essential indicator in the tennis serve performance, but is difficult to control among children/ people who are in the learning process (Tubez et al., 2019). As authors argue (see Tubez et al., 2021) „RHP appears earlier relative to impact for children (−0.54 ± 0.10 s) than for adults (−0.36 ± 0.11 s) and teenagers (−0.33 ± 0.05 s)".

Investigating elite female tennis serve, Whiteside et al. (2015) emphasize elements such as: variability at the elbow (degrees of freedom), rotations in the trunk and lower limbs, location of the ball, as very important to regulate the movement and improve performance. In 2018, Prodan et al. discuss about the correlation between the serve speed (adolescent amateur young players were investigated) and one arm ball throws, one-leg jumps and the hip external rotation angle of the non-dominant arm.

In order to improve mechanical efficiency of the serve, researchers investigated also different types of tennis serve: foot-back (feet remain at the same relative level) and foot-up (back foot is moved forward next to front foot for push-off), concluding that „the type of serve and the stance style adopted have a significant effect on foot loading" (see Girard et al., 2010 for implications of the study). It is known that the serve has the potential for musculoskeletal injury, research on this matter primarily focusing on the flat and kick serve and less on the slice serve. In their review, Abrams et al. (2011) discuss about the three types of serves mentioned and their injury potential.

At present, in the Romanian specialized literature, there are few books dealing with the game of

tennis (see, for example, Stănescu, 2010; Moise, 2002), and also, few international articles, written by Romanian authors which investigate, especially, intellectual abilities and various psychomotor skills of junior tennis players (see, for example, Grigoroiu et al., 2021; Predoiu et al., 2020; Prodan et al., 2018; Predoiu et al., 2016; Grigore et al., 2016; Tüdös et al., 2015; Grigore et al., 2015; Predoiu, 2015a; Predoiu, 2015b; Radu et al., 2012), in relation to the scale of this sport in Romania, both in terms of the number of players, but also in terms of performance. If we want to look for information on the methods of teaching this game, we must be patient and carefully research the few bibliographical sources that deal with this subject. If we are specifically interested in the methodology of teaching tennis to children, the chances of success are even lower.

For this reason, we decided to develop a study investigating experienced tennis coaches to gain valuable information about teaching the serve, in the case of children. Our main motivation is the passion for tennis, this noble sport that is loved and played today in all the corners of the world. According to Teușdea (2002, p. 29) "tennis is accessible to all ages, it can be practiced from the age of 5 to 70 and even beyond, it contributes both to the strengthening and preservation of health and to the harmonious development of the body". The same author published an interesting paper in 2017, about the single game in tennis, providing a brief description of specific elements of tennis technique and tactics, including the serve (Teușdea, 2017).

The serve is the technical element that starts the game and it is often the one that scores points. For children and beginners it is necessary to learn the correct execution technique. As Moise states (2002, p. 38), depending on the effect given to the ball, the serve can be: with slice effect; with kick effect; with lifting effect (top spin effect).

Kick serve, the most commonly used in the instructional process in young children, involves five distinct moments, namely: the initial position; the grip of the racket; the preparation of the kick; the kick itself; the end of the kick.

Crespo and Miley (1998, p. 14) present some useful ideas regarding the tennis serve in singles play:

1. Generally - use the serve to dominate the point from the start, vary the serve position and target to create uncertainty. Have confidence in your own serve. In the case of the first serve aim on the weaker side of the opponent, but remember that you can also serve into the opponent's body. Be consistent: try to get a 70% first serve percentage. There is no need to hit the ball too hard, 70-80% power is usually enough. In case of a good serve, you can move to the net in order to execute a volley. If your first serve does not have significant speed (it is a defensive serve), stay in the back of the court and expect a good return from your opponent (on your weaker side).
2. Direction, rotation - vary the serve not allowing the opponent to anticipate. Serve in the body when it is an important point. "Send the serve at an angle on important points if you have an opponent who uses two hands on both sides. Use rotation according to the playing surface. Serve cut sideways to the left side of the court and to the center of the court in the right side. Serve flat in the middle of both sides. Serve topspin to the centre (in the left side of the court) and sideways out in the right side. Take into consideration whether the opponent is left-handed or executes two-handed shots".
3. Second serve - be aggressive with the second serve, but at the same time try to be consistent (100% on the second serve). Don't drop the serve too short, you should rather do a double fault with a serve too long than into the net. Also, don't forget to use the serve in your opponent's body. If your second serve is too weak (slow speed), stay behind the court and wait for a return from your opponent who will, probably, be on your weaker side.
4. Serve and volley - "on clay: as a variation or to surprise the opponent; on fast courts - on most first serve points to attack the opponent - start fast for the volley while the opponent returns [...]. Vary your serve placement. When it's an important point and you hit the second serve, the serve and volley can be a good tactical surprise."

The research objective is to highlight the perception of tennis coaches on the main technical-tactical aspects of the methodology of teaching the serve in singles game at the children's level. Achieving this objective involved the following research tasks: scientific documentation of the research topic, establishment of the research sample, elaboration and application of the opinion questionnaire, collection, processing, analysis and interpretation of the results obtained from its application, formulation of the conclusions drawn from the research.

Research question - What is the perception of tennis coaches on the main technical-tactical aspects related to the methodology of serve learning in children's singles?

Materials and method

Participants

The research sample was represented by 10 Romanian coaches (male), from the Northeastern region of Romania, aged between 30 and 64 years (M = 47), each with at least 8 years of experience in teaching tennis.

Instruments

Next we will present the opinion questionnaire entitled „Opinion survey on serve learning methodology in singles at children's level". It contained nine questions with the following response options:

1. In your opinion, are there currently enough papers in the national literature dealing with the methodology of teaching tennis?
- Yes
- No

2. At what age you usually make the initial selection of children?
- 5 years or less
- 6-7 years
- 7-8 years
- 8-9 years
- 10 years or later

3. What kind of rackets do you typically use in children training?
- standard rackets
- age-appropriate rackets

4. In which of the following periods do you (most often) start serve learning?
- first year of training
- second year of training
- third year of training and later

5. In your opinion, which of the following is more effective in serve learning?
- global teaching
- analytical teaching

6. Which of the following do you think is the most important in the first phase of serve learning?
- the grip on the racket
- preparation for execution or initial position/ stance
- arms movement
- segmental coordination
- other aspect (please explain - short answer)

7. With which of the following grips do you prefer to start your serve learning?
- continental grip
- Eastern grip
- Western grip
- Semi-Western grip

8. What position/ stance do you use to prepare for serve execution in the first phase of learning?
- the position with the shoulders' line perpendicular to the net (the shoulder opposite the hitting arm facing the net)
- the position with the shoulders' line parallel to the net (the chest facing the net)
- other position (please explain - short answer)

9. Do you usually pay a special attention to tactical aspects in serve learning?
- Yes (please specify which aspects you pay attention to)
- No
- It depends (according to the specific situation)

Procedure

Our scientific survey took place in June 2021. The opinion questionnaire elaborated by us was applied in the training bases of the following tennis clubs from the Northeastern region of Romania: Sports Club "Municipal Bacău", „A.C.S. Tennis Challenge Bacău", „A.C.S. Moldosport Bacău", A.S.T.C. Bistrița Bacău.

Results

In Figure 1, we can see that there is not enough specialized literature dealing with the methodology of learning the game of tennis at children's level, in Romania.

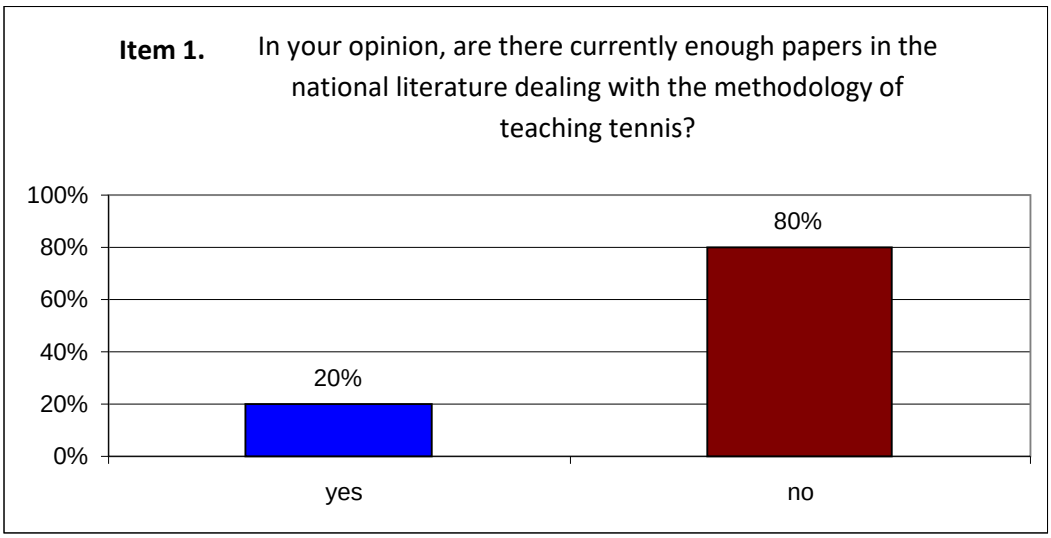

Figure 1. Graphical representation of the results recorded for item 1

In Figure 2, we can see that most coaches seem to prefer to make the initial selection at the age of 6-7 years old.

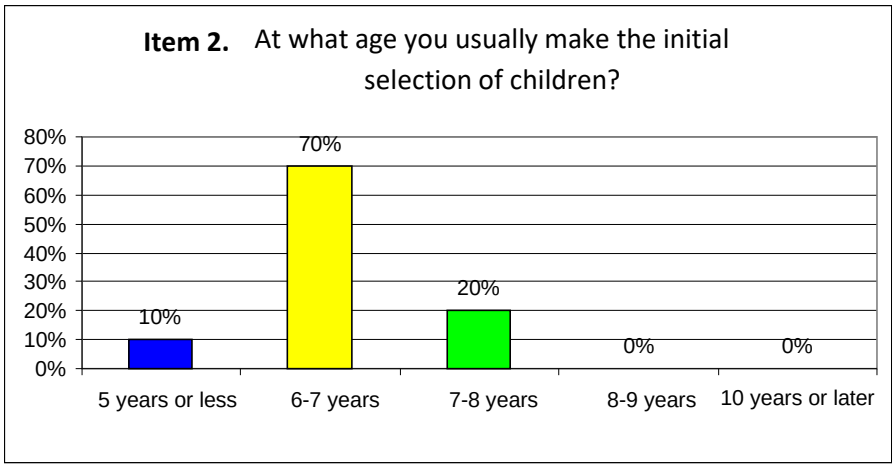

Figure 2. Graphical representation of the results registered for item 2

According to the research results, most coaches use age-appropriate rackets. In our opinion, age-appropriate rackets are absolutely mandatory, considering that the player at initiation level can be 5-6 years old.

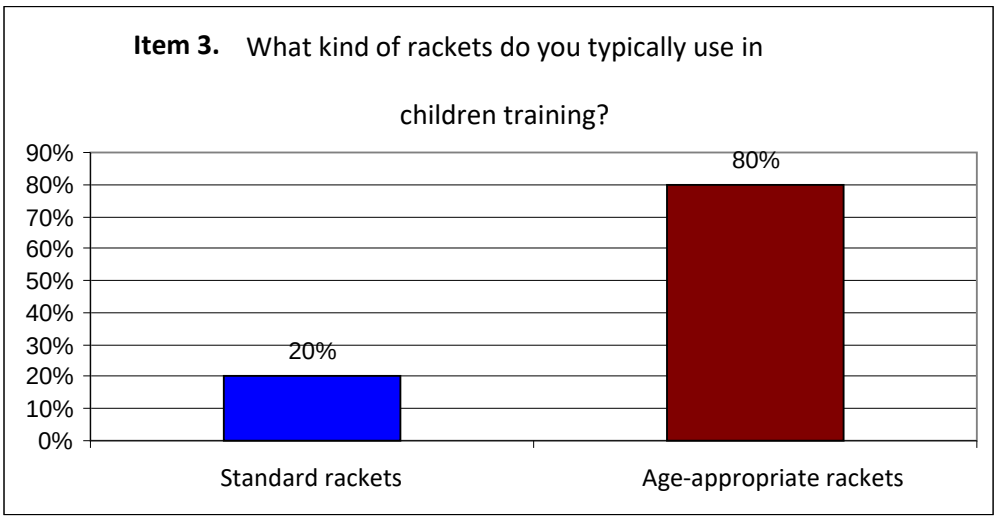

Figure 3. Graphical representation of the results obtained for item 3

Being a difficult technical element, most of the coaches which participated in the survey said they approach serve learning in the second year of training. In order to enjoy the game without knowing the serve, young athletes can perform the "serve" from below.

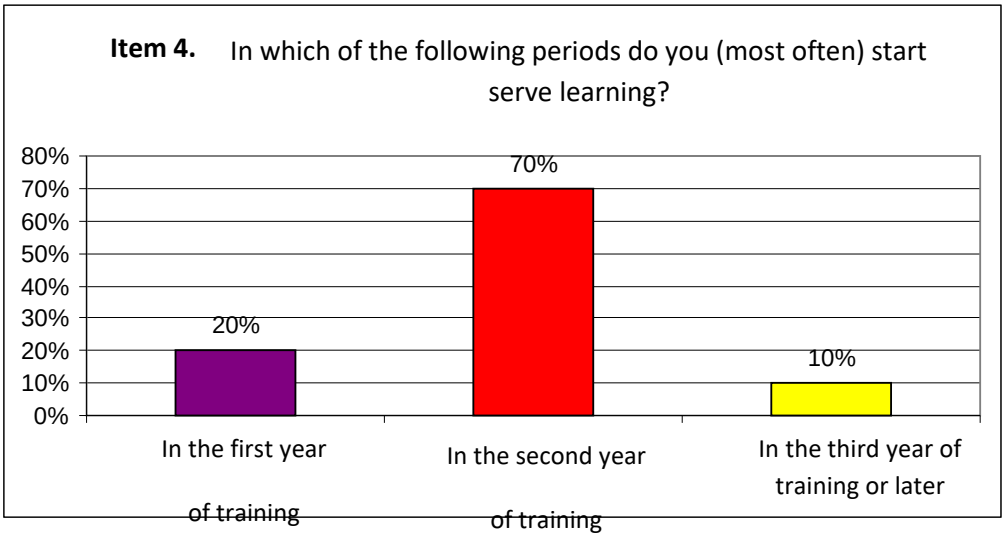

Figure 4. Graphical representation of the results recorded for item 4

Most of the coaches participating in the study said they use analytical teaching when approaching serve at the children's level. The main reason is the technical difficulty, which requires a very high degree of coordination. Therefore, it is best to start with arm movement from a simplified position and then introduce leg action and torso twisting.

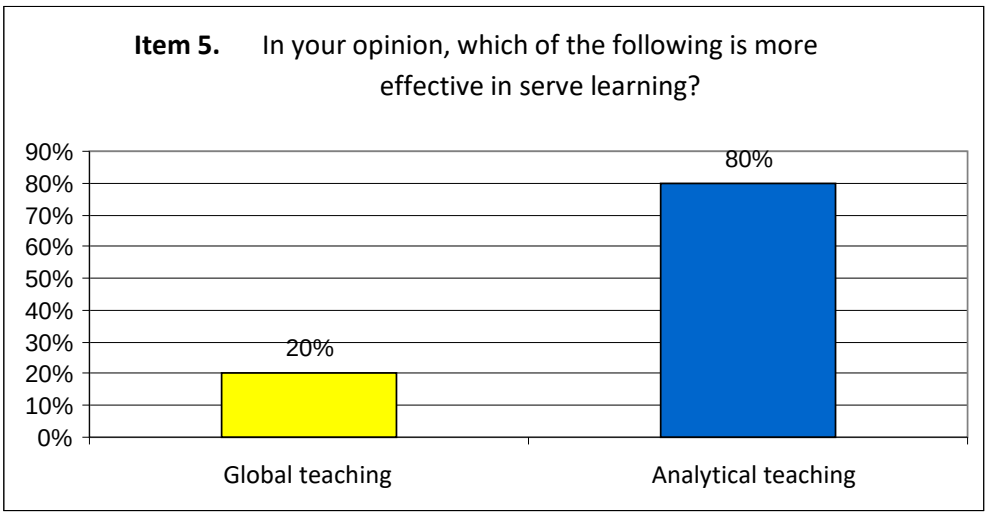

Figure 5. Graphical illustration of the results registered for item 5

Based on the results, in the first phase of serve learning, the most important aspect is the preparation for execution or initial position/ stance. The reason is simple: if this is done wrong, the athlete will have great problems in terms of coordination in order to perform a correct and efficient serve.

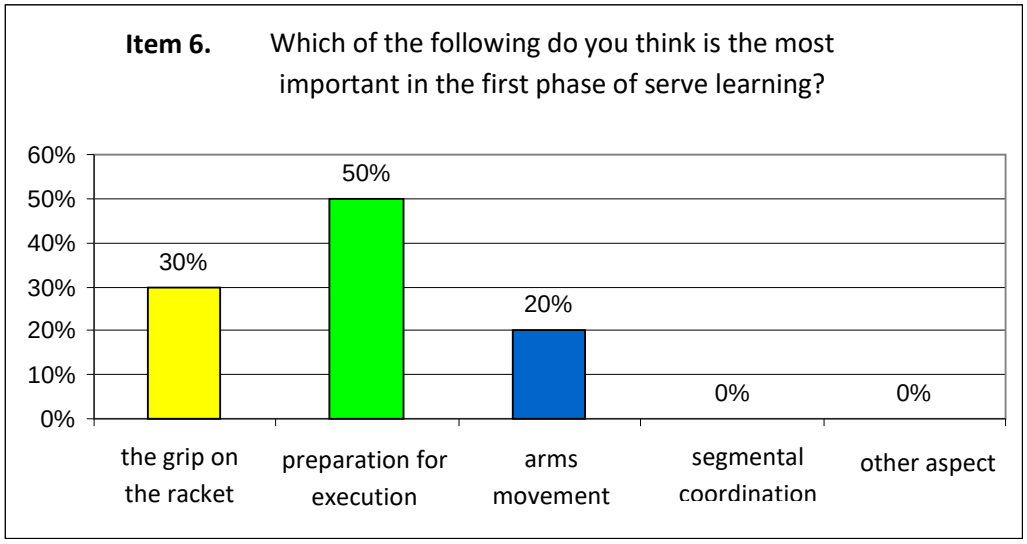

Figure 6. Graphical illustration of the results recorded for item 6

The grip of the racket, or the position of the racket in the hand, is extremely important in order to perform a correct and efficient serve. The index finger should be placed along the length of the racket handle, slightly bent away from the other fingers to ensure balance. In teaching the serve, most coaches use the semi-western grip, as this grip creates a natural motion that young players feel comfortable with.

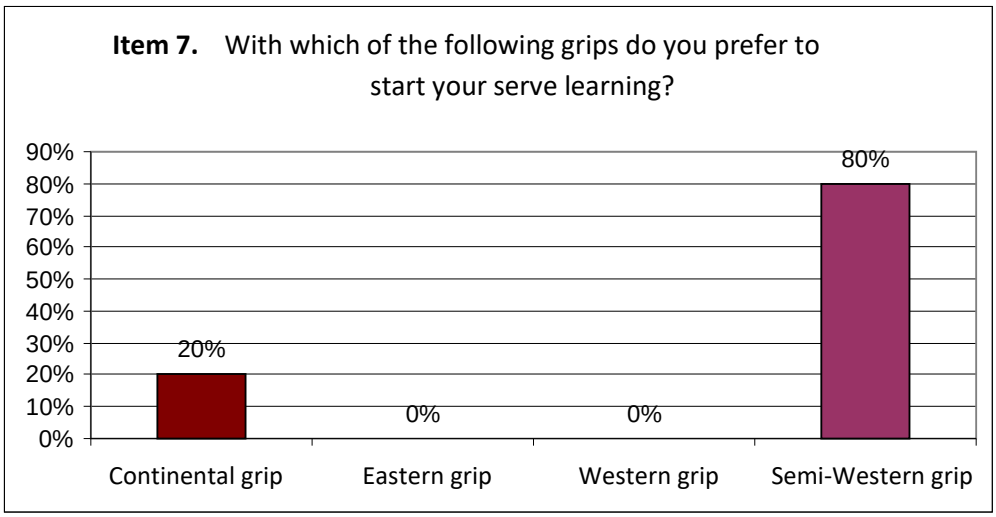

Figure 7. Graphical representation of the results registered for item 7

In the first phase of learning the serve, it is usually used the position with the shoulders' line perpendicular to the net, which forces the player to twist the torso during the execution, or it is used the position with the shoulders' line parallel to the net, which implies a simplified execution with emphasis on the movement of the arms. According to the results, most coaches prefer the first position.

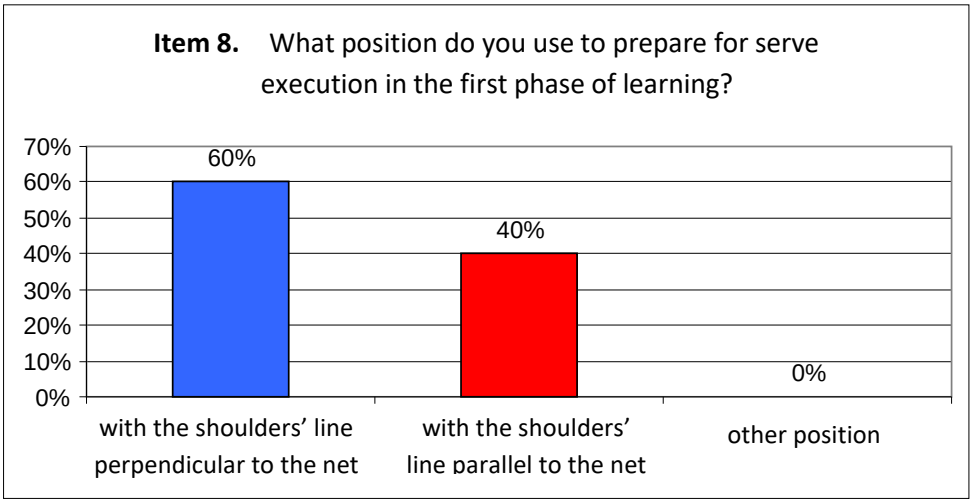

Figure 8. Graphical illustration of the results recorded for item 8

At the children's level, serve is a difficult technical element that needs to be approached analytically, without putting pressure on the players. The technique of execution is complex and requires a high degree of coordination, which is why the tactics of the serve execution often becomes too abstract data for this stage of tennis learning. This is also highlighted in the figure below (Figure 9), as most coaches stated that they do not pay much attention to the tactical aspects of the serve.

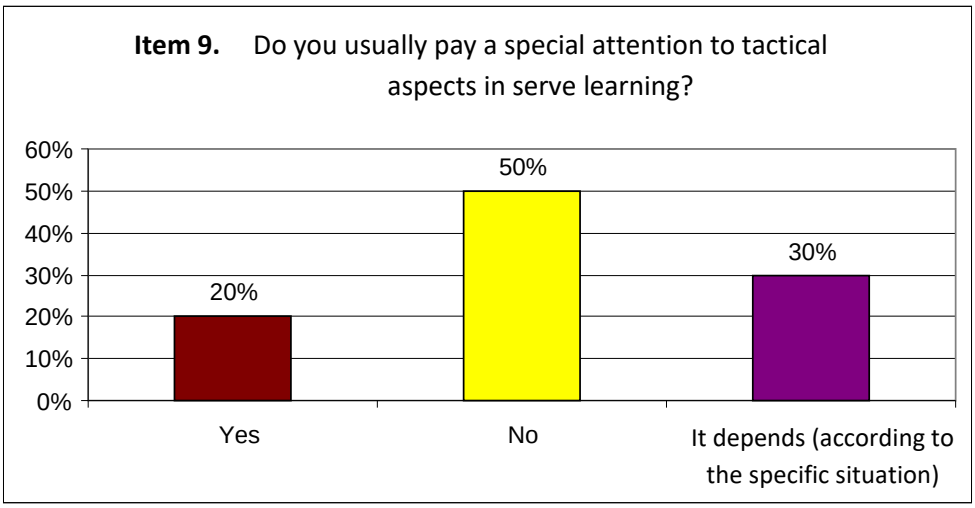

Figure 9. Graphical representation of the results registered for item

Conclusion

In Romania, the methods of teaching tennis represent a subject that is not sufficiently addressed, compared to the size of Romanian tennis in financial, material and, last but not least, performance terms. In the year 2022, we can say that there are still few scientific papers dealing with tennis teaching, especially at the children's level. This fact is not beneficial, considering the importance of the methodology of learning technical-tactical actions, from the beginning of the training. In our opinion, addressing this subject, so important but at the same time so little discussed in the national specialized literature, can lead to results that can later be used on the court in children's training.

The majority of the coaches (70%) choose to make the initial selection at the age of 6-7 years old. At children's level, most coaches prefer to use age-appropriate rackets. 70% of the coaches surveyed tackle serve learning in the second year of training, and 20% of them do so in the first year. At the children's level, 80% of the coaches surveyed prefer to approach the serve using the analytical method - decomposing the motor skill/ process into several movements.

For serve learning, most coaches (80%) use the semi-western grip and 20% use the continental grip. Half of the coaches do not pay much attention to the tactical aspects of teaching children to serve, and those who do address the tactics prefer to teach children to serve on the backhand or to the opponent's body. 20% of the coaches choose to teach children to give the ball some spin in order to increase the difficulty of the return.

A limit of the research is represented by the small sample of tennis coaches investigated. Future studies are needed in order to capture more accurately the preferences of tennis coaches regarding the method of teaching the serve to children, both in other regions of Romania and in other countries.

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Authors' Contribution

All authors have equally contributed to this research.

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