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PRELIMINARY NOTES ON THE MODELING OF PHYSICAL CONDITION THROUGH DYNAMIC GAMES AT THE LEVEL OF PRIMARY CYCLE STUDENTS

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Abstract

Aim. Tennis is a dynamic, elegant, spectacular sport, that requires not only exceptional physical training, but also extraordinary intelligence and decision-making speed, courage, inventiveness, spontaneity, anticipation, and the ability to react quickly to everything that happens on the court.

Methods. The research aims to find and improve the means of learning and mastering the strokes in the game of tennis, to plant a stable root in the children of today, the future champions of tomorrow. The purpose of this paper is to identify new scientific research approaches that refer to the methodology of learning the technique of hitting the ball for basic shots in the game of tennis, as well as finding new means and methods to help children acquire and consolidate these shots.

Conclusions. In the game of tennis, the duration of the formation of specific skills depends on the motor experience of the individual, the level of morpho-functional indices, the complexity of the action and last but not least, the level of motivation of each individual child.

Keywords: morpho-functional indices, dynamics of movements, basic shots.

Introduction

According to the author of "Behind the Scenes of Tennis", Heil Harman, the game of tennis is perhaps the most brutal of all sports, as two athletes on opposite sides of the net, very dedicated and eager to win, hit the ball relentlessly, passionately, sending it in all directions of play, and the crowd lives and suffers with them with every shot sent over the net, just watching with emotion as they battle within the confines of a rectangular court for hours and hours until exhaustion. This game is distinguished from other sports firstly by the dynamics of movements and the timing of actions, all executed precisely during maximum effort, and secondly by the behavior of the spectators, which is as elegant as that of the players.

Methods

The choice of this topic is primarily due to my professional concerns, of understanding and effectively solving the problems encountered in field tennis observed throughout my career as a performance athlete and teacher. Second, it is due to the interest that I developed during my university training in educating, training and learning the basic strokes of the game of tennis for beginner children. Through the present work we aim to make a useful contribution and relevant to existing practice regarding the benefits of learning the correct ball striking technique for the forehand, forehand and service stroke.

In the modern game of tennis, basic shots, forehand, backhand and serve play a crucial role, therefore they are the technical procedures with which most coaches begin the training process of future tennis players. Over the past 30 years, the biggest changes in the game of tennis have probably come about because of the changes and improvements made to tennis rackets. Racquets are made of much better performing materials such as graphite which remains the most common choice for rigid racquets today, being larger and offering a much wider surface to hit the ball. This has had a significant impact on the game of tennis and especially on the strokes from the bottom line of the court.

To find and improve the means of learning and mastering the strokes in the game of tennis, to plant a stable root in the children of today, the future champions of tomorrow. The purpose of this paper is to identify new scientific research approaches that refer to the methodology of learning the technique of hitting the ball for basic shots in the game of tennis, as well as finding new means and methods to help children acquire and consolidate these shots.

The teaching process is conducted at all ages for learning, forming human behavior and perfecting the personality. In sports training, where the aim is to achieve the maximum possible performance for an athlete, depending on his particularities and evolution, teaching takes on special characteristics determined by the character of performance sports.

Starting from the idea that sports performance is not only yesterday's work, today's result, and tomorrow's sacrifice but also the joy of being better at a certain moment in life, we must not forget that training is an instructive-educational process subordinate to obtaining the results for which the athlete trains and is subjected to physical and mental violence,

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which often occurs both in the performance development process (preparation) and in the competitive one.

Forehand- This technical procedure is considered the easiest to execute due to its naturalness, and that is why it is among the most common and often used shots during a tennis match. (Bompa T.O., Performanța în jocurile sportive, București, 2003.) The forehand stroke is divided into several categories because of the effect that the ball receives at the moment of impact with the racket. (flat stroke, lift stroke and cut stroke).

Backhand -The backhand is the basic technical technique widely used in the game of tennis, which can be executed by the player, with one or two hands. (Bompa T.O., Performanța în jocurile sportive, București, 2003.)

Serve: The service shot is the basic technique of sending the ball into the opponent's service box and is executed by throwing the ball overhead and hitting it before it hits the ground. (Elliot B.C., Reid M., Crespo M., Biomechanics of advanced tennis. (Ed). Internațional Tennis Federation, 2003)

In this age category, it is essential to consider the pace at which each child develops and grows. In this age group, work is done on medium groups of players (maximum 6), in isolated game conditions, 30% of the time is allocated to physical training and running school 30% is allocated to technical skills 40% is allocated to theoretical skills. The duration of a training session will be approx. 90 minutes where emphasis is placed on the correctness of the executions, thus developing themed games.

In addition at this age, emphasis will be placed on improving reaction speed, repetition speed, decision speed, movement speed and ball sense. (Epuran M., Metodologia cercetării activităților corporale- Exerciții fizice, sport, fitness. București. FEST, 2005)

The learning of different technical procedures corresponds to the learning of technique in tennis, and corresponds to and is conducted according to the laws of biomechanical execution, the stages of formation and the learning of motor actions, determined by the particularities of the sports branches.

Sports skills are formed through long repetition, influenced by the state of fatigue, controlled or uncontrolled, mental activity or the changing conditions in which they practice.

The technical procedures in the tennis game that will be mastered will have to have fluency, accuracy, strength and long-term efficiency, speed, precision, suppleness, expressiveness, amplitude, etc.

All these qualities are acquired through a long process of training, as well as according to the physical development of the player, the development of the body's effort capacity or the development of the mental capacity, all of which are taken to the extreme limit of the human body's endurance (Moisescu P., Impactul capacităților coordinative asupra performanței motrice la copii de 7-10 ani., București, 2012).

The stage of informing and forming the movement representation. It is the stage in which the future tennis player forms an idea based on explanations and intuitive means, the concept and basic notions of the process to be learned. This stage is called Technical Learning Stage - Initial Learning Stage.

Stage of useless movements. It is characteristic of the first executions of the technical procedures in which the main information of the tennis player is continued from the verbal instructions of the coach or viewing with the help of modern equipment the image of the movement.

In this stage of learning the procedures, some discomforts appear during the execution, such as: excessive effort, non-selective participation of muscle groups, improper work rhythm, low amplitude, imprecise execution in performing the procedure, etc. This stage is very important for tennis players because it is decisive in learning the correct technical procedures.

Misappropriation in the process of acquiring the technique at this stage is one of the important limiting factors in learning, because once the technique has been wrongly acquired it can be difficult to correct.

Stage of fine coordination and consolidation of technical procedures. It is characterized by the correct performance of the movements, and execution with increased indices of strength, speed, and flexibility, all of which are carried out under conditions of increased resistance, with cursive, precise, safe execution and with the correct amplitude. In this stage, the information coming from the coach to the athlete refers to the observation of details related to the fineness of the executions, the phases of the movement, and things that cannot determine a fine and coordinated execution.

The stage of perfecting and automating technical procedures in the game of tennis, ensures the performance of various technical procedures in diversified, varied, changing conditions, with higher efficiency indices (precision, safety, rhythm, control, amplitude, etc.). The tennis player can adapt his execution to the most diverse external conditions, created either by the opponent or by the environment of the competition. Automation is an effect and a condition, driven by the need for more repetitions.

Studying the technique and developing the rules of execution results in increasing the speed of execution, coordination and orientation in space, correct deciphering of mistakes, their correction and efficiency of execution.

The current game of tennis is characterized by great dynamism, with the player being put in the position to think and act quickly for the effective application of the technical-tactical arsenal, in the diversity of adversity situations. Thus, beginner players at the age of 8-10 need to learn the most correct technique to be able to carry out any tactical plan to win matches in competitions. (Ene-Voiculescu Carmen, Tenis - îndrumar metodologic, Constanța, 2006)

The preparation for hitting the ball is simple (specified grip, position of body segments, such as and the appreciation of the relationship between the path of the ball, the bounce from the ground and the moment of impact); (4) Another defining element for this stage is the spatial-temporal assessment of the moment of racket-ball impact; A last critical aspect that refers to the technical-tactical nature of the actions undertaken by the player, consists of the sequence of the

body segments (rhythm) for hitting the ball.

The development of the technique in the game of tennis must take place in separate stages, each of which pursues different basic objectives, a fact that requires the differentiation of each development objective and implicitly the development content. The entire process of technique development is based on the body's continuous adaptation transformation. These adaptation processes have their own rules and cannot be avoided or omitted. Thus, for a correct development, it is useful and necessary to establish exact objectives for each individual stage of development.

Using a long-term procedure, according to a well-established plan systematically in the development of technique, can reach one's own potential performance limit, if the player pursues and does not deviate from achieving these goals.

The fundamental principle of the technique of the tennis game (current and prospective) consists of the ability of the player to constantly hit the ball on the upward trajectory and in front of the body, by correctly assessing the distance to the ball and the optimal moment of hitting, by transferring the general center of body weight toward impact, as well as by acceleration and spatial control of the tip of the racket along the entire path of the movements of hitting the ball. This principle is synonymous with the notion of efficiency. Because of its vast complexity, it incorporates several other principles of the technique. Through its content, this principle defines in a positive sense the offensive and modern character of the tennis technique, offering coaches the opportunity to update and improve the technique of hitting the ball from the beginner level.

The principle of effective execution of the actions of preparation for the shot (racket grip, player's position, movement on the field, placement on the ball and replacement in strategic areas 1 and 2 of the field), by anticipation and reaction, by orienting the line of the shoulders perpendicular to the direction of hitting balls and correct arm action with the racket. Preparing the player to hit the ball coming from the opposing court is an extremely complex action, given the very short time frame in which the player has to process several data, choose the optimal response and act accordingly. The longer the game experience, the more prompt the player's reaction and the better the ability to anticipate.

The orientation of the shoulder line perpendicular to the direction of the net is a basic rule and requirement in modern tennis, a technique that the player must adopt at the end of the preparation for hitting the ball, thus ensuring technical efficiency and the corresponding tactical content. The racket withdrawal movement with the help of the trunk and arms may have a greater or lesser amplitude, depending on the distance of the player from the net and the tactical intention of the moment of play. (Pașcu N., Educarea coordonarii micilor tenismeni. Argeș 2015).

These preparatory actions for hitting the ball are the subject of the game without the ball, and are of decisive importance for the technicality of the playing actions as well as the specific tactical aspect.

The principle of the correct use and combination of forms of movement in the field, by dynamiting the placement on the ball, repositioning in strategic areas of the field, and quickly adopting the specific position before, during, and after each action on the ball.

Adopting an active and balanced fundamental position on the ball will allow the player to quickly overcome static inertia, and move easily in any concrete game situation. Depending on the characteristics of the ball coming from the opponent's field, the player's movement on the field must be permanently adapted in time and space, an aspect that will allow the player to make an active placement on the ball and to develop the body's forces easily to perform the technical act of the game. (Simion, G., Stanculescu, G., Mihăilă, I., Antrenament Sportiv-Concept Sistemic, 2011)

The principle of composition and use in the correct sequence of the body's forces when hitting the ball, by realizing the translation of the body's rotation and impulse toward hitting the ball through the correct action of the arm with the racket and the effective engagement of the body segments that do not directly take part in handling the racket.

The efficiency of any action when hitting the ball largely depends on the sequence of the action of the body segments according to a certain order, given by the specificity of the game technique. According to the laws of biomechanics, the player initiates the movement of striking the ball through a translation at the level of the general center of gravity of the body, which is then transmitted to the level of the trunk, materializing through its rotation, completed with the strong impulse at the level of the lower train (both sidekicks and top kicks).

At the same time, the action of the arm occurs with the racket, which, in turn, is subject to a sequence and specific technical rules (the arm ensures the amplitude and force of hitting the ball, the forearm ensures the optimal angle of approach and whipping the ball, and the fistpoint ensures the impact and finesse of the stroke. Body segments that do not directly participate in racket handling (opposite arm, head) play a role in balancing the body at the end of the stroke.

The principle of using and combining in different proportions the 5 efficiency factors, indispensable when hitting the ball (direction, length, speed, effect and trajectory), by alternating the rhythm and cursiveness of the actions undertaken, a fact that ensures technicality, tactical content and complexity of the tennis game.

By using, maintaining, changing or combining the efficiency factors mentioned above, the player's actions become efficient and the game content is amplified and diversified, ensuring the modern game content. The player must first acquire information on each of these efficiency factors to anticipate the play and response conditions and to amplify them, which will surprise the opponent's intentions and create conditions conducive to the counter-offensive.

According to Richard Schonborn, the development of technique in the game of tennis must take place in separate stages, each of which pursues different basic objectives, a fact that requires the differentiation of each development objective and implicitly the development content. The entire process of technique development is based on the body's continuous adaptation transformation. These adaptation processes have their own rules and cannot be avoided or omitted.



Thus, for a correct development, it is useful and necessary to establish exact objectives for each individual stage of development (Schonborn R. *Tenisul, metodologia instruirii*. Editura Casa-Oradea, 2011).

Conclusions

The long-term development of an athlete and the optimization of the methods of learning basic shots, have become the central idea of an athlete's training. Biological age or maturity levels are used to plan ball striking techniques. The need to identify and use the critical periods of rapid training adaptation during childhood is increasingly recognized as essential in tennis circuits.

Developing basic strokes at an early training age is essential for future performance athletes.

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