

Research on Teaching Application and Training Method of Double Reverse Technique in Tennis

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Abstract: Along with the rapid economic development and the national attention to sports, tennis has turned into a very popular ball sport among college students. In recent years, due to the rapid development of campus tennis, tennis has been widely promoted in various universities. In order to make more students aware of tennis culture, and gradually fall in love with this sport, tennis lessons are actively conducted in universities. The article describes the characteristics of using double reverse technique in tennis from both theoretical and practical aspects, and proposes a corresponding training program.

Keywords: Tennis; Double reverse technique; Teaching; Training

1. Introduction

In college tennis classes, it is much more difficult to learn two-handed stroke technique compared to forehand hitting technique. Most students are not very good at mastering the two-handed backhand technique. They are often forced to hit with the forehand when they can return with the backhand, which increases the load on the forehand stroke, resulting in a poor quality of the return. In the current college tennis education, how to use the double backhand technique well and make it more stable, active and aggressive is a difficult problem to solve. Therefore, on the basis of exploring the teaching methods of double backhand stroke technique in college tennis, we find a practical solution and apply it to the whole teaching process, so that college tennis teachers with teaching experience can pay enough attention to double backhand stroke technique in teaching, thus providing some theoretical basis for students to learn tennis technique actively [1].

2. Technical Analysis of Tennis Double Backhand

The double reverse stroke is a technique that was first used in the 1970s and 1980s, and it is one of the more commonly used techniques. The following is an explanation of the basic movement of this stroke. To achieve this movement, it is necessary to determine where the ball will land based on the direction of motion of the ball. Therefore, we need to move our body quickly to that position, while placing our left leg in front of us, and slightly tilting the right hand side in the direction of the incoming ball. Maintain your lower body position, rotate your shoulders, bend your knees, with the head of the bat slightly up and your eyes focused on the incoming ball. After the stroke, the player may take the opportunity to lean the net racket forward to the right, placing the weight of the body on the right leg, and returning the limbs to their initial ready position. In general, the double reverse stroke is stable, powerful and physically demanding for the player. However, in actual use, it is extremely easy to fall into disadvantage because of some factors of the players themselves, such as their own conditions. All of the above puts a severe test to the physical education work in universities.

3. The Essentials of the Double Reverse Stroke

In tennis, the emphasis is on power and accuracy. It is a proven playing style for players to press their opponent by hitting a deep ball from the baseline, making them run fast and forcing them to the edge of the court. At the same time, a fast and powerful deep and high pass in close range often makes the opponent powerless to counterattack, thus creating a scoring opportunity for himself or even a direct goal. Because both hands hold the racket with concentrated force, you can counterattack by shaking your wrist, which then makes up for the shortcomings of the short back swing and the lack of

powerful power on the high ball.

3.1. Grip Method

The so-called "double backhand" is actually the left hand hitting the forehand and the right hand hitting the backhand. When the player holds the ball, the left hand is in front and the right hand is behind, and the left hand is next to the right hand. You can play well with both hands on the racket, but this also affects the flexibility of your arms. Double reverse grip hand type is roughly divided into two types: Eastern-style double reverse; Eastern and Continental-style double reverse. The eastern way double back is the left hand eastern way and the right hand eastern way, this holding method is mostly based on flat strikes, fast and powerful, which can form a straight path in the backhand, with a strong killing power, but requires strong physical ability, so it is the best choice for male athletes, Agassi is a typical example of this holding method. Eastern and continental double backhand is left handed eastern style right handed continental style, these two grips are suitable for both men and women, because they can be used in different ways to counterattack, it is the one with the most variations among the three grips, Roddick is the best of this holding method [2].

3.2. Action Structure

3.2.1. Preparation Position

Face the net, spread your feet naturally forward the same width as your shoulders, bend your knees slightly, lightly support the neck of the racket with your non-grip hand, so that the head of the racket is parallel to your chin, bend your elbows, and stretch the racket comfortably in front of you while leaning forward with your weight on your feet. When deciding that your opponent's incoming ball is coming towards your back racket, the left hand with a light grip on the neck should quickly assist the right hand in switching to a back racket grip. If the forehand uses an Eastern-style forehand grip or a Western grip, then when playing, we should change to a counter grip that corresponds to it, otherwise the counter racket will shoot badly. For a double back racket, the best way is to use a right side back racket and a left side fore racket.

3.2.2. Back Swing Lead

When the double reverse back swing leads, because the left hand hold will pull the racket back a bit. Since pulling the racket for too short a time often results in weakness of the strike, drag the net racket back as far as possible. By turning your hips to your left shoulder, swing your right hand back to the left and turn your left foot 90° to the left, perpendicular to the red line. At the same time, step up with your right foot to the left front, wrists taut and back, shoulders tense, and right thumb near the top of your left leg. The elbow will naturally bend down as you swing back, and the body weight will be transferred to the foot behind. The swing under the opposite direction should be done well before the swing under the forward direction. When the back swing of the double back stroke is leading, it is back to the net, so it is very difficult for the enemy to make an accurate judgment of his swing and the angle of the stroke, which makes it impossible for the enemy to make an early and accurate prediction of the direction, rotation and speed of the incoming ball, thus increasing the stealthiness of the stroke even more [3].

3.2.3. Forward Swinging the Ball

When cutting from the back swing to the front swing, hold the net racket firmly, keep your wrist still, your right foot is 45° from the net, rotate your shoulders, torso and hips, swing the racket in the direction of the ball, the strike point of the backhand should be on the left front side of the body, and the net racket should be aligned with your right foot when hitting the ball, which can play a role in stabilizing the racket surface with two handheld racket and increasing the wrist force, so as to solve the single handheld racket in the problem of not being easily stabilized in play, thus greatly improving the accuracy and attacking power of the stroke. When hitting the ball, the head swing is the fastest, aim at the incoming ball and then hit the ball straight, the elbow should be straight, the net racket and the palm at the same height, and the eyes on the ball. The hitting point should be at waist level, near the knees or slightly forward, and the head of the racket must follow the direction of the ball's flight, as a way to increase the time the ball is in contact with the racket. The left hand does not need much, just let the net racket bounce out. When the body weight moves from the back foot to the front foot, the top spin of the racket is from the top down in the playing style. Double reverse from the introduction of the racket should be carried out by both hands at the same time, and when swinging forward to hit the ball, it is

also in the same direction as the movement of the body's center of gravity, so that the force of the stomp, turn and forward swing can be combined to produce a combined force, which then affects the ball through the racket, thus improving the hitting force. Moreover, it can also overcome the forehand defects of the elbow and wrist, increasing the accuracy of hitting and the efficiency of attacking the ball [4].

3.3. Technical Points

3.3.1. Move the Serve Slightly Forward

Due to the anatomy of the body, the backhand hitting point is more forward than the forehand hitting point. Because the shoulders move from the original rear to the front when it comes to backhand strokes, college athletes often experience a delay in backhand strokes, which requires some advance lead time when completing a double backhand.

3.3.2. Shift the Body's Weight from Back to Front

You put your weight on your back foot when you lead the racket, and when you swing the racket, you put your back foot on the ground and shift your weight to your front foot, so that you can hit the ball through the movement of your weight. In this way, the ball can be struck from the bottom upwards, preventing the "backwards hitting habit" caused by the weight not being shifted sufficiently.

3.3.3. Feel Free to Swing Enough

When you first start training for double reverse stroke, you are not familiar with the technique, which leads to hitting the ball simply by touching it forward, and then controlling it according to your power level. Over time, you will form a habit of contacting the ball, and if you have too much power, your hit will be easily out of bounds. Swing with enough to give the ball enough spin, thus improving the safety of the stroke.

4. Analysis of the Technical Movements of Tennis Double Backhand Stroke

4.1. Characteristics of Tennis Double Reverse Stroke Technique

In the tennis double backhand technique, when there is a close hit, the player's back swing must have a back to the net, and this action has a good concealment, which leads to the opponent's inability to make an accurate judgment, and then affects the speed of the incoming ball rotation and the judgment of the incoming ball's orientation, which then causes the opponent's nervousness, and finally leads to the opponent's hasty return. Because a two-handed grip is a basic requirement for double backhand shots, it must greatly increase the need for wrist strength, which will solve the problem that the player's wrist will shake when hitting the ball, so that he can easily deal with his opponent's aggressive deep balls and speed balls and counterattack effectively, further ensuring that he has enough confidence to deal with his opponent, thus creating a good initiative. When performing a tennis double reverse stroke with a two-handed grip, most tennis players have a back swing that makes it easier to fix the shape of the racket, thus increasing wrist strength and improving the aggressiveness and accuracy of the stroke, thus gaining the initiative and advantage of the stroke attack [5].

4.2. Difficulties in the Technical Movements of Tennis Double Backhand

Because in tennis double backstroke, the hitting points are mostly close together, this inevitably leads to control of their range, which creates a relatively large distance to move. However, because there is so much running, which can result in excessive physical exertion in the double reverse technique. In the double reverse stroke, most of the hitting points are closer to the body than in the forehand stroke, which increases the demands on the tennis player's pace speed, agility and resilience. Due to the lack of experience in the left side of the body, when hitting with a two-handed grip, the body will have certain restrictions on the left arm, which in turn affects the full extension of the right arm forward, causing control inconsistencies in the hitting action, resulting in too short a forward swing distance, narrowing the hitting control surface and relatively expanding the opponent's attack range.

4.3. Technical Advantages of Double Backstroke

Because of using a two-handed grip, the double backhand greatly enhances wrist strength,

overcomes the disadvantages of wrist shaking and improves the accuracy of hitting the ball. Since the striking point of the two backhands is closer to your own body, it is back to the net when you hit the back swing, so it has a stronger hiding ability, so it is difficult for your opponent to see you from the angle of your swing and hitting, so he cannot predict and judge the position, rotation speed and speed of the ball in advance, which will give his opponent a feeling of panic and thus lead to making wrong counterattacks. In addition, the double back can change direction a split second before the shot, making the shot stealthier. From the introduction of the racket, the double reverse is performed by both hands at the same time, and the forward swing of the stroke is also in the same direction as the movement of the body's center of gravity, so that the force of the turn can be maximized, combining the force of the stirrup, the turn and the forward swing into a combined force, which then affects the ball through the racket, thus enhancing the strength of the stroke. Because of the concentrated power of the two-handed grip and the fixed wrists, the double backstroke can be countered by shaking the wrist, thus making up for the shortcomings of the short back swing and the lack of power when hitting high balls. This is incomparable to the one-handed racket, especially when facing the very threatening baseline high and low balls, the two-handed racket can play a greater role [6].

5. The Current Status of the Application of Double Reverse in Universities

The training of tennis is a systematic practical activity, which provides scientific and systematic training for its technical and tactical aspects. In the table of technical improvement pathways (Table 1), it can be seen that tennis players' improvement of tennis technique mainly relies on mutual guidance among club members, but the level of guidance of club members varies, so it is difficult to ensure the quality of training. After investigating the practice of double reverse practice, the results showed that the prevalence of both using double reverse practice and using tennis wall practice was relatively low. Double reverse practice and practice using tennis wall, which is one of the main practice methods that can improve the stability and precision of tennis technique, but its prevalence is low, which also leads to the failure to develop and consolidate the level of tennis technique well in colleges and universities.

Table 1: High school tennis players' double reverse technique skill improvement pathways.

Improvement path	Number of people	Proportion
Basic special training by coaches	35	31.8%
Coaching among members	56	50.9%
Self-discipline training	19	17.3%

6. The Application of Double Backhand Technique in Teaching Tennis in Higher Education

6.1. Teaching Objectives

Applying the double backhand technique to tennis lessons, its aim is to raise students' awareness of the game, and to increase their motivation to play tennis. Students were divided into introductory, intermediate and advanced groups according to their tennis level and physical fitness, and specific teaching contents were developed accordingly for each group. The basic tennis skills of beginners are not solid, their physical quality is not high, and there is a big gap with the requirements of the course syllabus. Therefore, for beginners, the main objective in tennis is to promote the physical and sporting ability of students, so that they can better perform at the basic level specified in the Tennis Syllabus. At the same time, in this stage of tennis teaching, teachers are not necessarily in a hurry to teach tennis skills to students, but rather to take into account the students' learning and assimilation abilities, so that they can experience the fun and enjoyable sports experience of tennis, and to bring their enthusiasm for learning to its fullest. In teaching tennis to the intermediate group, emphasis should be placed on the teaching of tennis playing skills. Teachers should strictly base on students' physical qualities, and then develop a teaching program suitable for their development, so that they can achieve greater improvement in tennis serve technique and basic theoretical knowledge, thus promoting rapid improvement of tennis skills. Students in the advanced group have a higher level of tennis theory and technique, therefore, in the teaching of tennis lessons, attention should be paid to catching the technical characteristics of students, and to strengthening their serve and receiving skills [7].

6.2. Method of Instruction

The double backstroke technique is very different compared to the conventional teaching methods.

The teacher no longer just instructs the students as a whole, but organically combines overall and individual instruction, thus improving the relevance and specificity of teaching instruction, which can help students a lot in terms of skills and knowledge in a limited learning time. At the same time, the training of students' autonomy is no longer limited to group-based exercises. By combining group and independent practice, it helps students to identify their problems and correct them with the help of teachers and peers. In the tennis class, five steps are used for the use of double backstroke technique, such as asking questions, pointing out the method, mastering the learning situation, discussing and learning, and reinforcing the summary. During the instruction process, the teacher organically combines overall instruction, group instruction and individual instruction, and puts the principle of differentiated instruction into practice, thus improving the scientific and precise nature of instruction and adopting a systematic and scientific curriculum system, which effectively solves the problem of a single curriculum system and a single form.

6.3. Teaching Process

The teaching method of using the double backhand technique, which increases the teaching difficulty compared to the conventional teaching method. The teacher should have an accurate grasp of the students' learning situation, based on their learning ability and skill base, and then develop a targeted teaching program, and set different teaching objectives and learning requirements. Assist students in solving the problems and issues they encounter in learning, and develop their independent thinking skills in learning. Divide students' learning into stages such as imitation, inspiration, learning and summarizing. In the process of learning, practice with questions, find answers to questions in practice, deepen their understanding and mastery of the learning content, it also have their own learning understanding of the technical theory of tennis. Based on students' practice and ability development, they are evaluated and summarized, and for students in the process of learning, the knowledge points that they are prone to make mistakes are corrected, helping students to make effective adjustments to their learning methods and practice content, so that tennis lessons can achieve steady results.

7. Training Method of Double Reverse Technique in Tennis

7.1. Cooperative Group Learning

Group cooperative learning is also known as group teaching method, the specific implementation steps of this teaching method are: before formal teaching, students' physical fitness and athletic ability are tested, and students are grouped according to this criterion, or they can be encouraged to group freely, as long as they can maintain good classroom order. During the teaching, the teacher can explain the techniques to the students and encourage them to communicate and discuss in teams, or they can have group competitions. In the process of tennis education, the cooperative learning method can be used in the classroom to obtain good results, which can achieve the effect of one helping one, stimulate the students' interest in learning, ignite their desire to participate, and finally achieve proficiency in the technical movements of tennis double backhand. In addition, when using cooperative group learning, teachers can also use it to develop students' independent learning ability and sense of cooperation, so as to create a good tennis learning atmosphere, so that students can better improve their tennis skills.

7.2. Multimedia Teaching Method

The multimedia teaching method refers to the use of information technology and multimedia equipment, and then present the basic principles and technical knowledge of tennis to students in the form of text, images and audio. In today's information technology, the use of multimedia technology in classroom teaching has become a norm. In the teaching of tennis double backhand technique, the action is very complicated, and if the teacher only relies on verbal explanation and demonstration of the ball movement, it is impossible for the students to have a clear impression of the technical action concerned, let alone practice and master the tennis technical action. Teachers should adhere to the principle of combining lecture and practice, first let students watch the video carefully, and then organize them to practice, so as to achieve the purpose of improving the effect of tennis teaching [8].

7.3. Reverse Method

Reverse teaching, also known as "reverse thinking", which is a breakthrough from the traditional,

conventional thinking, reversing the conventional order of teaching the tennis double backhand technique. In the past, the teaching of the double backhand technique started with the forehand and backhand grips, and then proceeded to the double backhand after the students were familiar with the technique. The reverse teaching method advocates that students be exposed to the double backhand technique directly, and then learn the forehand pumping technique based on the double backhand technique. Using this teaching method, students can master the tennis double backhand technique quickly and in a balanced way, thus it can get better teaching effect.

8. Conclusion

In conclusion, the double backhand stroke is both a fundamental tennis technique and it is a key focus and difficulty in higher education. Compared to one-handed backhand stroke technique, double backhand stroke technique is more suitable for learning and improving in college tennis players. However, there is a general lack of a scientific and proven training method among college tennis players. Therefore, in the process of improving the tactical tennis ability, we need to have an accurate double reverse technical action. In addition, in order to improve the technical and tactical skills of college tennis players, teachers must also have a proven training method, as a way to ensure a scientific and systematic approach to the techniques, so that students can continue to improve in their technical skills.

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