

Analysis of Factors Affecting Serving Effectiveness in Volleyball Matches

Zhang Tao, Xiaolong Liang

City College of Dongguan University of Technology, Dongguan, 523419, China

Keywords: Volleyball; Serve; Factor; Physical Fitness

Abstract: Serving is an important means of attack and scoring in volleyball matches. The aggressive serve can destroy the opponent's pass, cause the opponent's tactical mistakes, and make it difficult to organize an effective attack. The revision of the rules of volleyball matches has great impetus to the development of volleyball and enhances the appreciation of the matches. The service quality of volleyball players is affected by many factors. It includes the influence of athletes' physical fitness and technical and tactical level. The development trend of today's world volleyball is offensive serve, breaking the other side's pass, creating conditions for defensive counterattacks or direct scoring. Volleyball players must have a comprehensive physical quality, and the lack of quality on either side will affect the quality of the serve. This paper analyzes the important role of teeing skills in volleyball games and discusses the main factors affecting the serve of volleyball players.

1. Introduction

Serving is the only technique in volleyball that is not subject to the constraints of others. An aggressive attack can destroy the other party's pass, causing the opponent's tactical mistakes, and it is difficult to organize an effective attack [1]. If you can score directly, you can also defeat the opponent's spirit and achieve the preemptive tactical effect. It can be seen that serving plays a very important role in volleyball matches [2]. A team with a strong threat and a high success rate can often win the final victory of the game. The continuous development and innovation of teeing technology is the current trend of volleyball development [3]. The revision of the rules of volleyball matches has great impetus to the development of volleyball and enhances the appreciation of the matches. In order to deliver high-quality balls, athletes should not only have high service skills, tactics and physical fitness, but also avoid the interference of various factors. At the same time, the psychological state of athletes is also very important [4]. In this paper, the importance of volleyball players' service and the factors affecting the quality of service are analyzed and summarized, and the corresponding countermeasures are put forward. The purpose is to provide reference for volleyball players to deliver high quality balls in the competition.

2. Characteristics of Serving in Modern Volleyball

Serving is the only technique in the game that is not interfered by the opponent. The tactical arrangement of the opponent reduces the opponent's offensive ability. In turn, it is a favorable condition for the team to create a defensive counterattack. Serving is a contradiction between two aspects. Both are mutually restrained and mutually reinforcing, and the balance is only relative. The quality of volleyball players' serve is affected by many factors. These include the athlete's physical fitness, the level of skills and tactics. It will also be influenced by the audience and coaches, teammates and referees. Attention should be paid to the special phenomenon that happens by chance. Because things are an inevitable result from an accidental coincidence [5]. In order to effectively restrain opponents, the teeing skills are constantly improving and improving. Mainly combined with the performance of the serve and the change of the landing point, strengthen the threat and attack of the serve. In daily training, in addition to increasing the vigorous kick training, we should further improve the serve quality of the floating ball [6]. And then in the actual game to achieve the combination of vigorous service and drift ball, disrupt the rhythm of the opponent.

When serving, we should have tactical guiding ideology. When the front row is in the strong round, we should serve hard, and when the weak round is in the weak round, we should serve.

Serving is a technique that players self-throw and self-attack independently. All kinds of sports need certain physical fitness as the basis. Volleyball players also need certain physical fitness in the process of serving. No matter how good a player is, he must be prepared psychologically before every round of competition. Athletes are prone to emotional fluctuations before and after menstruation. It causes depression and restlessness, thus affecting the results of the competition. Inappropriate tension can distract attention. Causes the thought to be slow, the movement response slows down. Reduce the efficiency of work and study. Figure 1 shows the relationship between athletes' emotions and competitive behavior.

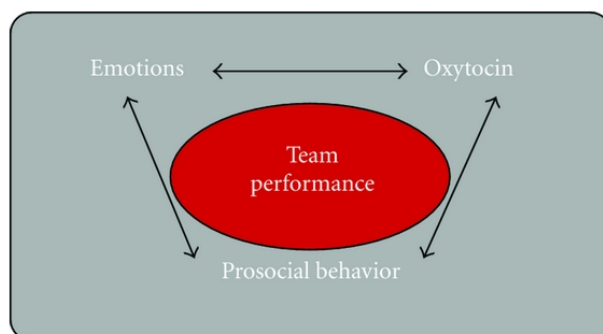


Fig.1. The link between athletes' emotions and competition behavior

Most teams pay only a little attention during training, that is, the emphasis on aggression ignores the error rate, emphasizes the grasp and gives up the non-aggression. Volleyball players must have a comprehensive physical quality, and the lack of quality on either side will affect the quality of the serve [7]. Serve tactics belong to individual tactics, and the use of good or bad depends on the strength of individual tactical awareness. Serve tactics include finding points, finding areas, length and length, emphasizing aggression and stability. The athlete's teeing technique is the primary factor determining the quality of the serve [8]. A high-quality service is closely related to the skill level of serving mastered by the serving players. In the match, if the consciousness of serving is better and the skill is better, then the serving technique can be used flexibly. It produces a direct score or takes the initiative in the attack.

3. The Application of Spoiling Technology in Actual Combat

3.1. Innovation of serving technology

When the athlete's tee-action skills are automated, the dominance of consciousness on the action is reduced to a minimum. As the physical quality of volleyball players continues to improve, their abilities have also been fully utilized. The jumping serve position is not only convenient for two-step running when the ball is smashed, but also jumps near the end line to obtain momentum. It can increase the bounce height, improve the hitting point, and make full use of the depth space. From a mechanical point of view, the ball that is emitted is a sphere that obtains a certain initial velocity under the action of the attacker's impact impulse and acts as a projectile in the gravity field. If the athlete's level of teeing skills is generally in the fierce competition, it is easily interfered by external factors [9]. When hitting the ball, the body is in the air. It can make full use of the body momentum, increase the power and speed of hitting, and increase the difficulty of receiving the ball.

Players serve more by their own psychological orientation, psychological pressure is greater, eager to win. In the game, if the difference between the two teams is large, the leading player may be more relaxed when serving. In volleyball matches, mismatches with teammates often occur in tense matches. It often leads to dissatisfaction between players and coaches, and brings great psychological pressure to athletes. Because of the intense competition, the whole body and mind of the athletes are in a state of extreme tension. Therefore, the accompanying strong and distinct

emotional experience is also rich and colorful. Figure 2 shows the coordination phase across project teams.

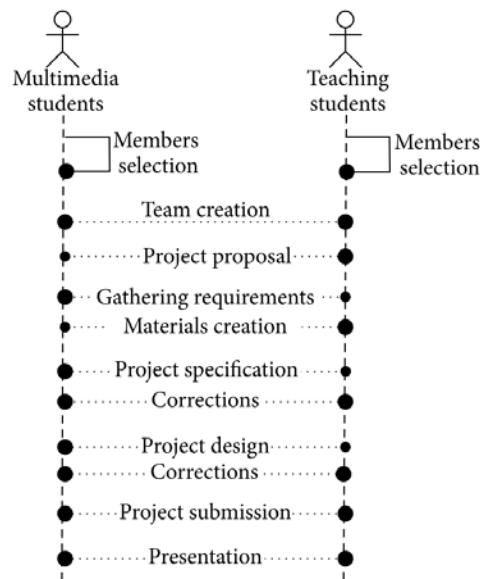


Fig.2. Coordination phase of the cross-project team

3.2. Interruption improves offensiveness and stability of serve

In the final stage of the game, if the score between the two teams is close, it is very important to give a high quality ball to win the game. Run-up and take-off can not only maintain the reasonable position of the body and the ball, but also shorten the distance between the hitting point and the net, thus shortening the reaction time of the opponent and increasing the power of hitting. The speed of entering the role will also have an impact on serving. Some players are not excited enough when they enter the game, and they can not concentrate on the game completely, so they make service mistakes. If the players are in good mental state, they will send out high quality balls. If the player's mentality is too tight and can not maintain a good psychological quality, it will affect the quality of the serve [10]. As long as you master the hitting position and the timing of the shot, you can exert the maximum muscle strength of the relevant muscle groups and produce a strong whip impact. In today's volleyball game, the high-speed ball is becoming the mainstream of the service. Athletes need to have strong jumping ability and strong hitting ability in the serve.

4. Conclusions

A high-quality serve can reduce the ability of the opponent to organize an offense and create favorable conditions for the team's defensive counterattack. In order to enable the advantages of the teeing technique to be fully utilized in the volleyball game, the factors affecting the quality of the serve must be analyzed. The methods and means of continuously improving and improving the teaching and training of serving are focused on improving the comprehensive ability of athletes in terms of basic skills, movement specifications, serve strength and control ability. The referee controls the whole game, and the emotions of the athletes, coaches and the audience are affected by the referees. The development trend of today's world volleyball volleyball is offensive serve, breaking the other side's pass, creating conditions for defensive counterattacks or direct scoring. The mental state of the players has an important influence on the quality of service in the match. Such as the interference of the audience, the influence of coaches, teammates and referees, the intensity of the game and the importance of the game. Learn the service experience of foreign high-level players and tactical awareness of using different service techniques in different situations. It is advocated to use vigorous Jump Service in matches and increase the proportion of vigorous jump service. Good service is based on good service skills, athletes' physical quality and excellent psychological quality.

References

- [1] Zetou E, Vernadakis N, Bebetos E, et al. The effect of self-talk in learning the volleyball service skill and self-efficacy improvement. *Journal of Human Sport & Exercise*, 2013, 7(4): 794-805.
- [2] Wang, Juan. Research on Key Technology of Data Mining for Volleyball Game Based on Service System. *Applied Mechanics and Materials*, 2014, 543-547:4698-4701.
- [3] Silva M, Lacerda D, JoO P V. Game-Related Volleyball Skills that Influence Victory. *Journal of Human Kinetics*, 2014, 41(1):173-179.
- [4] Brams S J, Ismail M S, Kilgour D M, et al. Catch-Up: A Rule That Makes Service Sports More Competitive. *American Mathematical Monthly*, 2018, 125(9):771-796.
- [5] Silva M, Lacerda D, Paulo Vicente João. Match analysis of discrimination skills according to the setter defence zone position in high level volleyball. *International Journal of Performance Analysis in Sport*, 2012, 14(2):463-472.
- [6] Chaari H, Zouch M, Zribi A, et al. Specific sites of bone expansion depend on the level of volleyball practice in prepubescent boys. *Biology of Sport*, 2013, 30(3):227-234.
- [7] Lam K C, Snyder Valier A R, Valovich Mcleod T C. Injury and Treatment Characteristics of Sport-Specific Injuries Sustained in Interscholastic Athletics: A Report From the Athletic Training Practice-Based Research Network. *Sports Health: A Multidisciplinary Approach*, 2015, 7(1):67-74.
- [8] Ahmed D, Ho W K Y, Lee K C. Ballgames and burnout. *Journal of Physical Education and Sport*, 2015, 15(3):378-383.
- Kilani H A. Lifestyle Habits: Diet, Physical Activity and Sleep Duration among Omani Adolescents. *Sultan Qaboos University medical journal*, 2013, 13(4):510-519.
- [9] Pervin N, Fang F, Datta A, et al. Fast, Scalable, and Context-Sensitive Detection of Trending Topics in Microblog Post Streams. *ACM Transactions on Management Information Systems*, 2013, 3(4):1-24.
- [10] Mansukhani M P, Allison T G, Lopez-Jimenez F, et al. Functional Aerobic Capacity in Patients With Sleep-Disordered Breathing. *The American Journal of Cardiology*, 2013, 111(11):1650-1654.