

Special Physical Training and Optimization Strategies in Volleyball Teaching

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ABSTRACT

The training and optimization of special physical strength in volleyball teaching must emphasize the pertinence and pay attention to the scientific nature. In the process of volleyball special physical training and optimization, coaches can use the phased training to promote the physical development of students, adopt diversified training methods to improve the training effect, and formulate personalized training plans to meet the training needs of different students, so as to effectively promote the innovative transformation and sustainable development of special physical training in volleyball teaching.

KEYWORDS

Volleyball teaching; Special physical training; Strategy

1 Introduction

Volleyball has strict requirements on students' physical fitness and operation skills. Physical training is an effective way to improve students' sport performance, and also an important measure to prevent injury and prolong career. From the two perspectives of physical training principles and optimization strategies in volleyball training, this paper will explore how to use scientific, systematic and personalized training methods to improve the physical fitness of volleyball students, in order to provide theoretical and practical guidance for related coaches and students, and promote the further development of volleyball.

2 Special Physical Training and Optimization Principles in Volleyball Teaching

2.1 Emphasize the Pertinence of Training

In volleyball training, the coach should combine the training content and form closely with the actual needs of students, so as to significantly improve the competitive level of students. Targeted training is a customized training program based on the uniqueness of volleyball and the individual needs of students. Volleyball requires students to have excellent coordination, explosive power and endurance in physical fitness. Therefore, the training needs to be effectively developed according to the specific needs of this sport.

The coach first comprehensively evaluates the physical condition of students to accurately grasp the development status and deficiency of strength, speed, agility and endurance. The coach should use the detailed data analysis to identify the strengths and weaknesses of the students and design a targeted training plan accordingly. For example, for students with insufficient vertical jumping ability, emphasis should be placed on training content that enhances students' lower limb strength

and jumping ability.

The coaches' teaching should ensure that the training content is closely related to the actual requirements of the volleyball competition^[1]. The training program designed by the coach should include the commonly used movements and skills in volleyball games, such as spiking, serving, blocking and receiving, etc., and enhance the performance of students in actual situations through simulated competition scenarios. For example, the training to improve upper limb strength can be performed by simulated the spike movement, so as to enhance the body strength of students and help improve their skills.

In addition, the careful management of training intensity and training volume is also crucial. In view of the differences in the physical basis and recovery ability of students, the coach should reasonably arrange the training intensity and training volume according to the specific situation of each student, so as to avoid the physical fatigue or injury caused by overtraining. For example, for students with weak physical fitness, the low intensity and high frequency training can be used to gradually improve their physical fitness level. For students with good physical fitness, the intensity and volume of training can be moderately increased to constantly challenge their limits.

2.2 Focus on the Scientific Nature of Training

The scientific principle of special physical training in volleyball teaching emphasizes that all training methods and means should be based on the scientific theory and practical experience to ensure the effectiveness and safety of training.

First, the scientific principle requires the coach to have rich professional knowledge, master the basic theories of sports physiology, sports anatomy and sports biomechanics, and be able to integrate these theories into the practical training. For example, the coach must understand the working principles of muscles and the energy metabolism process, and effectively arrange the time and content of strength training and endurance training to enhance the effectiveness of physical training.

Secondly, the training plan under the scientific principle should be systematic, including long-term goals and short-term goals, in order to gradually improve the physical fitness of students. The training plan should be subdivided into four phases: warm-up, main training, cooling down and recovery, and each phase should have clear objectives based on scientific evidences. For example, the warm-up phase can increase muscle temperature and flexibility through the light exercise and stretching, so as to prevent injuries. The main-training phase needs to adjust the training content and intensity according to specific goals.

Third, scientific principles require coaches to select and apply validate evidence-based training methods based on scientific research and empirical data, such as the use of high-intensity interval training (HIIT) to improve the aerobic and anaerobic abilities. At the same time, coaches should continue to pay attention to scientific research results, and constantly update and optimize training methods^[2].

Fourth, the scientific principle also requires the coach to conduct strict evaluation and timely feedback on the training effect. Coaches can use scientific evaluation methods such as heart rate monitoring, blood lactate concentration determination and electromyography analysis to make timely adjustments to the training plan. For example, heart rate monitoring is used to understand the cardiovascular load of students so as to avoid excessive or insufficient training intensity.

Fifth, the coach should also pay attention to the students' psychological state, understand the students' pressure and emotional changes through psychological assessments, implement psychological counseling and relaxation training, and improve the students' training concentration and enthusiasm.

3 Special Physical Training and Optimization Strategies in Volleyball Teaching

3.1 Use the Phased Training Method to Promote the Physical Development of Students

The phased training method divides the cycle of volleyball physical training into different stages, and each stage needs to set specific training focus and goals, in order to gradually improve the students' physical fitness level.

First, the preparation stage. The preparation stage is the starting point of the training, mainly through low-intensity aerobic exercise and flexibility training to help students gradually adapt to the training load and improve their basic sport ability. For example, exercises can be arranged such as jogging and swimming, and the training duration is about 30 minutes supplemented by static and dynamic stretching, so as to enhance students' muscle endurance and coordination.

Second, the foundation stage. The foundation stage focuses on enhancing the students' comprehensive physical fitness. The training intensity gradually increases and includes a variety of strength, speed and agility exercises. For example, the combination of free weights and resistance equipment such as dumbbells, barbells, etc. is used to implement compound movements such as squats and push ups with the elastic belt as the training aid, to improve the explosive power and endurance of muscles. In the speed training, students' reaction speed and physical coordination are improved by using the sprints and variable speed running, as well as agility training such as ladder running, obstacle running, etc..

Third, the strengthening stage. The strengthening stage is the core stage of the training cycle, with the highest intensity, and focuses on improving the students' special physical fitness in volleyball sport. For example, through a variety of jump training such as vertical jump, single-leg jump, etc., students' jumping ability can be improved. The speed training of fast movement in the simulation of the game, such as short distance sprint, change direction running, etc., can ensure that the training content is closely integrated with the actual needs of the game. At the same time, cardiorespiratory and muscular endurance can be improved through high intensity interval training (HIIT)^[3].

Fourth, the adjustment stage. The adjustment stage aims to help the students recover physical fitness and reduce the intensity of the training, mainly including low-intensity aerobic exercise, full-body stretching and relaxation training such as yoga, meditation, etc., so as to reduce the training stress and maintain muscle flexibility.

Under the systematic arrangement of the above four training stages, students can effectively improve their special physical fitness in volleyball sport. In addition, the coach should flexibly adjust the specific training plan of each stage according to the individual situation of students to ensure that the students can achieve the training objectives scientifically and effectively.

3.2 Adopt a Variety of Training Methods to Improve the Training Effect of Students

In volleyball teaching, diversified methods can not only improve the overall physical fitness of students, but also increase the interest and participation of training, so as to effectively avoid the monotonicity of training process and sports injury.

Cross training is a way to integrate different sports and training techniques, through the introduction of running, swimming, cycling and other sports, to enhance the students' cardiorespiratory endurance, muscle strength and coordination. For example, running can improve the aerobic endurance and leg strength. Swimming can help to enhance the muscle coordination and endurance, reduce the joint pressure, and be suitable for recovery training. Bicycle training can effectively improve the lower limb strength and cardiopulmonary function of students.

Functional training can be used to improve the performance of students in the actual

competition, which emphasizes the coordinated operation of the whole body muscles and the improvement of the core strength. Coaches should organize students to simulate the common movements in volleyball games, such as weight-bearing jump, lateral movement to catch the ball, etc., in order to enhance the explosive power and coordination of students' movements.

Core training, such as planks, Russian twists and hanging leg lifts, can enhance the stability and strength of students' cores, and make students better cope with high-intensity competition.

Gamification training is to combine training content with game elements, and improve the training motivation and participation of students by designing competitive and entertaining training projects such as the team relay race and obstacle challenge. In the team relay race, the coach can set up multiple training stations, and arrange different physical training items at each station to promote the team cooperation and communication. In the obstacle challenge, a variety of obstacles, such as hurdles, climbing nets, drilling holes, etc., can be established to improve the students' physical flexibility and coordination^[4].

3.3 Develop Personalized Training Plans to Meet the Training Needs of Different Students

The basis for developing a personalized training plan is to conduct a comprehensive physical evaluation. The coach should conduct comprehensive tests and analyses on the strength, speed, endurance, agility and flexibility of students. Physical fitness assessment usually involves body composition analysis, muscle strength testing, speed testing, endurance testing, etc. For example, by measuring students' body composition, vertical jump height, 30 m sprint time and static balance ability, we can comprehensively understand their physical condition and improvement needs^[5]. On the basis of the physical evaluation, the coach needs to design a specific training program for each student. In the program, the content, intensity and duration of training should be appropriately arranged according to the specific needs and objectives of students. For example, for students who need to improve explosive power, strength training and jumping training should be arranged, such as weight-bearing squat, one-leg jump and box jump, to enhance their lower limb strength and jumping ability. For students who need to enhance endurance, long-distance running, swimming or high-intensity interval training can be added to improve their cardiorespiratory function and muscle endurance. The coach must constantly monitor and adjust the implementation of the training program. Coaches should regularly check the students' physical condition and training effect, and use physical testing and sports performance analysis to timely grasp the students' progress and challenges. If it is found that the specific training effect does not meet the expected standard, the coach should quickly adjust the program, and modify the training content and intensity, to ensure the persistence and scientificity of training effectiveness^[6]. At the same time, the coach should also pay attention to the students' psychological state and training feedback, provide them with psychological counseling and communication in time, and maintain their enthusiasm for training. In addition, the coach should also dynamically adjust the training according to the different stages of the season and the current state of students. For example, at the beginning of the season, the focus is on strengthening the students' basic physical and professional skills. In the middle and late season, the training intensity and content should be appropriately adjusted according to the specific needs of the competition and the physical status of students.

4 Conclusion

In volleyball teaching, the coach must pay attention to the scientificity and pertinence of physical

training. The phased training method, diversified training means and personalized training plan mentioned in this paper can not only improve the effect of volleyball physical training, but also break the monotony of training, increase the interest of training, and help to improve the students' psychological enthusiasm and training motivation. With the progress of sports science and the deepening of research, it is expected that the physical training of volleyball students will be more detailed and efficient in the future, and provide better support for the excellent performance of students in the arena.

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