

Research on Special Physical Ability in Swimming Training in Colleges

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ABSTRACT. *Swimming has a very significant role in promoting people's physical health, and at the same time, it can relieve people's spiritual pressure and cultivate people's aesthetic taste. At present, many colleges in China offer swimming courses, which are popular with many college students. The improvement of athletic level and competitive level of college swimmers requires good special physical ability. This paper first briefly describes the characteristics of swimming special sports, then elaborates the content of physical training in college swimming training, and finally elaborates the matters needing attention in physical training in college swimming training.*

KEYWORDS: *Swimming, College physical education, Special physical ability, Physical training*

1. The characteristics of swimming special sports and its special requirements for athletes' physical ability

Physical ability is the basic ability that people have. The swimming sport is highly competitive, and the sports skills are complex and diverse. In order to give full play to their swimming skills normally or super normally in the competition, the athletes must have good physical ability[1]. Compared with other sports, swimming has its own characteristics. In college swimming training, coaches and athletes should understand the characteristics of swimming sports and the special requirements of physical ability.

1.1 Special Strength

Muscle strength is an important physical fitness for swimmers. When traveling on land, people are mainly affected by air resistance, while in water, they are mainly affected by water resistance, which is much greater than air resistance. In the water, the muscles involved in sports must have enough power to generate propulsion, so as to achieve advancement and swim speed. The muscle strength of swimmers mainly includes arm muscle strength and leg muscle strength.

1.2 Special Speed

Swimming is a sport in which the speed of competitors is measured within a specified time. The speed quality that the swimmer should have mainly includes reaction speed, movement speed and displacement quality. Among them, reaction speed refers to the starting and jumping speed of athletes; the movement speed is the athlete delimits the length and the frequency; the displacement velocity is the time required for the athlete to complete a certain distance.

1.3 Special Endurance

Endurance is of great significance to swimmers. Except for short distance swimming (50m swimming) which relies on the function of phosphate system, other medium and long distance swimming (100m swimming, 1500m swimming) mainly relies on glycolysis and aerobic metabolism function, which requires the swimmers to have good endurance quality.

1.4 Special Flexibility

The swimming movement characteristic requests the athlete to have the good flexibility quality. Specifically, the swimmer's wrist, elbow, shoulder, lumbago, hip, knee and ankle joints all need to have good flexibility.

2. Special Physical Training in College Swimming Training

In the college swimming training, the special physical training means that the coach adopts the training methods and means closely related to the swimming special sports according to the characteristics of the swimming special sports and the special requirements on the athletes' physical ability. At present, in the swimming training of colleges in China, the special physical training is usually combined with the technical training of swimming.

2.1 Special Strength Training

When instructing athletes in muscle strength training, coaches may instruct athletes in land strength training and water strength training. Among them, the main methods of land force training are tension force training such as equal dynamic tension, rubber band tension, pulley tension and spring lever tension. The above training can develop athletes' swimming maximum strength, fast strength and endurance [2]. When developing the maximum strength of the athlete, the coach should control the intensity of the exercise to avoid the athlete's sports injury. When developing athletes' fast strength, the coach should control the movement frequency of the athletes, which can be controlled by the number of movements or the time. When developing athletes' strength and endurance, the coach should control the athletes' exercise time and emphasize the standardization of the athletes' movements. There are many methods of water strength training, the most common is to increase the propulsive exercise and increase the resistance exercise. A common method for increasing propulsion exercises is to wear paddles and flippers for swimming. During training, the coach should pay special attention to the standardization of athletes' swimming techniques. Common methods for increasing resistance exercises include wearing resistance clothing games, pulling games, vertical leg kicks, and splint strokes. During training, the coach should control the athlete's movement speed.

2.2 Special Speed Training

The methods of reaction speed training for swimmers are signal training method and motion sense training method. Among them, the signal training method is through the coach's command, gun or whistle signal, to start, jump, enter the water and water relay movement practice. Motion sensation training is a psychological training method. During training, the coach sends a signal and the athlete responds. The coach then tells the athlete to report their estimated reaction time, and then compares this time with the actual reaction time. Finally, the athlete is required to complete the action at the time determined in advance. Swimming athletes' speed training methods include sprint swimming, traction swimming, over-limit speed swimming, and small weight resistance swimming. The purpose of movement speed training is to develop the limit frequency of athletes' movements. The method of swimming athletes' displacement speed training is mainly short-stroke training. When training, the coach should control the time, not too long and not too many repetitions. When training, the coach should control the training time and frequency.

2.3 Special Endurance Training

The specific endurance training methods for swimmers include interval training method and repeated training method, among which the commonly used method is interval training method. During interval training, the coach can use different training methods according to the athlete's endurance qualities, such as aerobic slow interval training, fast interval training, interval training within a certain range, interval training and interval training. During the interval training, the coach should pay attention to rationally arrange the load during training, and at the same time, pay attention to the check of the athlete's heart rate during the training interval to ensure the athlete's physical health.

2.4 Special Flexibility Training

The special flexibility training methods for swimmers mainly include dynamic stretching method and static stretching method. Among them, dynamic stretching is an exercise in which athletes repeat the same movement rhythmically for many times. It can gradually lengthen the soft tissue of athletes. Static stretching is a practice in which athletes slowly stretch muscles and ligaments by means of power and stay still for a period of time when stretching to the limit. It enables athletes' soft tissues to be continuously stretched for a certain period of time. Flexible training, the coach should reasonably arrange the training load, and at the same time do a good job of

supervision, so as to avoid the athletes appear muscle, ligament injury.

3. Matters Needing Attention during Special Physical Training for College Swimmers

In order to ensure the quality of special physical training, coaches need to pay attention to the following issues when guiding swimmers to special physical training.

3.1 Pay Attention to the Physical Examination Before Special Physical Training

Before the special physical training, the coach should conduct a comprehensive and detailed examination of the athlete's physical condition with the assistance of the school doctor to understand their physical condition, so as to arrange suitable training content and methods for them. During the special physical training, the coach should also regularly perform physical examinations on the athletes and find the athletes whose physical condition is reduced, find the reasons in time, such as the exercise load exceeds the athlete's maximum capacity, and then adjust the training content and method in time. After the specific physical fitness training is over, the coach performs a physical examination on the athletes again, and compares the result of the examination with the result of the examination before the training, thereby providing a reliable basis for the next training.

3.2 Pay Attention to the Cultivation of Good Psychological Quality of Athletes

Swimming physical fitness training is a long and arduous process that requires athletes to have good psychological qualities as support. During special physical training, teachers should combine psychology, physical education, pedagogy, sociology and other discipline theories to cultivate athletes' qualities such as hard training, courage, self-confidence, perseverance, never fail, unity and cooperation[3]. Combining the physical and mental development characteristics and cognitive characteristics of big athlete swimmers, coaches should use case methods, viewing methods and other teaching methods to enhance athletes' understanding and understanding of good psychological qualities.

4. Conclusion

In college swimming training, coaches should pay attention to athletes' special physical training and combine it with athletes' swimming technical training. Coaches should strengthen their own learning and keep abreast of the development trend of contemporary swimming, college swimming teaching goals and the learning needs of athletes. Then, based on this, the content and methods of athletes' special physical training can be reasonably arranged, so as to efficiently improve the athletes' special physical ability, sports level and competitive level.

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