Research on Athletes' Physical Shape Characteristics and Selection Based on Environmental Value Theory

Xudong Yang[a], Donghui Dai, and Zhenjun Li

Sports Department, Shenyang Jianzhu University, Shenyang 110168, China.

[a]guzhaozheng@yeah.net

Keywords: Environmental Value; Athlete; Body Shape; Talent Selection.

Abstract: With the rapid development of China's sports industry, the level of competition has been rapidly improved, especially the global attention to sports, which has led to more and more young people having a keen interest in sports, which provides the national young athletes with a selection of materials Got more help. Existing research on morphological selection only describes the morphological characteristics of athletes, and does not establish evaluation analysis of morphological indicators and index weights. It is recommended that the analysis of the shape index of athletes at all levels must be established as soon as possible to provide guidance for scientific selection at all levels. This article mainly discusses the issues related to the selection of young athletes.

1. Introduction

When discussing the environmental value, it is usually necessary to study the ecological value theory, which has a certain impact on the athlete's figure. It is an important philosophical theoretical basis on which the ecological environment aesthetics is based. We know that human beings have different understandings of nature in different historical periods and different understandings of the relationship between people and the world, so values of different natures will be formed. Eco-environment axiology is produced under the condition that the contemporary eco-environment is deteriorating, human beings are facing crisis of survival, and gradually realize the importance of natural ecological environment. The eco-environmental value theory is developed on the basis of dialectical negation of traditional values. It is a reflection and transcendence of traditional values, so that it will have different responses to athletes' body choices [1].

2. Selection of Athletes' Physical Characteristics

Athlete selection is a process of combining scientific selection with talents. One of the core elements of juvenile athlete selection is growth and development, that is, understanding and mastering athletes' body shape, physiological function, athletic quality, athletic performance and biochemical, Psychological characteristics and other growth and development stages. In track and field athletics, the athlete's physical ability is concentrated in the physical shape, physical function and athletic quality, and the best combination of the three [2]. The physical shape and functional state are the substances that determine the level of athletic quality. basic condition. Athletes' body shape characteristics, such as height, weight, leg length, and other body surface characteristics have a high degree of heritability, all of which are above 75%. In the selection process of young track and field athletes, high-heritity seedlings must be selected during selection. At the same time, 13 to 15-year-old teenagers are in the period of growth and development, and their body shape is in the climax of surge. Grasp the morphological selection during this period, which can lay a solid foundation for the sustainable development of athletes in the future [3].

2.1. Athlete's Competitive Ability Structure and Selection

Special competitive characteristics refer to the comprehensive manifestation of athletes' competitive abilities in the special competitive process. They are composed of form, function,

quality, skills, tactical ability, sports intelligence, and psychological ability [4]. When high-level elite athletes are in the highest competitive state, each special The objective manifestation and description of competitive elements constitute the structural model of competitive ability of outstanding athletes. In practice, although each outstanding athlete has its own unique special athletic characteristics, summing up and refining its common characteristics not only provides important guidance for scientific selection of materials. Goals, but also provide important reference for athletes to determine the training goals of competitive ability [5].

2.2. Athlete's Competitive Ability Shape Features

Form is the first and most important link in selecting athletes. The level of the athlete's athletic ability depends in part on the morphological characteristics of the human body. Most sports have strict requirements on the shape of the athlete. The selection of the advantages that the world-class excellent athletes should have in the form, and continues to pass Testing and verification of athletic ability, after screening, means that the chances of obtaining excellent athletes are greatly increased [6].

2.3. Athlete Quality Characteristics

Athletic quality refers to the ability of the body to perform under the instruction of the central nervous system. Strength and quality are consistent with muscle development, and heritability is relatively low. Therefore, it is not advisable to have too many strength and quality indicators during the preliminary selection of athletes. Speed quality is related to the reaction speed, sensitivity, coordination and muscle fiber type of the nervous system. It is greatly affected by congenital factors, and must be high in the selection of materials. Endurance quality gradually increases with age during growth and development. The important physiological index that determines the endurance is the maximum oxygen absorption, which is greatly affected by heredity. Flexibility and sensitive qualities develop rapidly in childhood. Starting from the early stage of selection, the practice of flexibility and sensitivity is more effective in improving these two qualities. Athletic quality is a complex system. Only after understanding the different development periods, changing rules and characteristics of each quality, combined with the athlete's age, personality characteristics, and inducing their athletic potential, they can gradually improve their physical fitness.

3. Selection of Athletes' Physical Fitness Indicators

3.1. Selection of Athletes' Endurance

Figure 1. Analysis of Athlete Selection with Multiple Indicators

People usually refer to the strength, speed, endurance, sensitivity, flexibility, coordination and balance of the body's functions reflected in the muscle work as physical fitness, which is also the basis of the basic activities of the human body. Physical fitness is an important condition for athletes to master skills and sports skills in the process of competition. It is also the basis for physical fitness growth and an important aspect of selecting materials. Different distances require different physical fitness. Aerobic endurance, anaerobic endurance, and the speed and explosiveness of short-distance events are all indicators of evaluation. The middle and long distance competition is mainly based on the aerobic endurance of the body, so aerobic endurance is the most important aspect of evaluating the physical fitness of middle and long distance athletes.

3.2. Selection of Athletes' Muscle Strength

The sports program is a sports program that coordinates and cooperates with strength throughout the body, which requires higher quality of strength. For example, muscles need to be contracted quickly during the starting of the competition and the turning of the wall. In the process of various sports, the back muscles maintain a certain degree of tension, so the evaluation of muscle strength is also very important. During the measurement process, the strength of the athlete's back muscle group can be tested by back strength; the pull of the upper limb muscles can be determined by holding the horizontal bar in the forward and back hands to determine the number of pull-ups; the strength of the athlete's back muscle group can be evaluated by post-body flexion testing; In addition, judging the muscle strength of the lower limbs by longitudinal jump or standing long jump, these can determine the size of the athlete's muscle strength. The test determines the athlete's fast muscle fiber to slow muscle fiber ratio is a more accurate test. It can evaluate the athlete's muscle type and determine whether the athlete is suitable for the long distance endurance event or the short distance muscle explosive event. .

3.3. Athlete's Flexibility and Speed

Use a special protractor, straighten the leg with a protractor to measure the flexion of the foot and the dorsiflexion of the foot, and take the angle between the three points of the tibia, the superior medial condyle and the reef joint, namely the foot extension (maximum angle) and hook foot (minimum angle) Athletes with good ankle flexibility are an important indicator of athlete selection. Competitive events are items that determine the speed of the game. All the materials are selected to improve the athlete's forward speed in the competitive process. It is the most important physical quality, so the speed quality is an indicator of material selection that cannot be ignored.

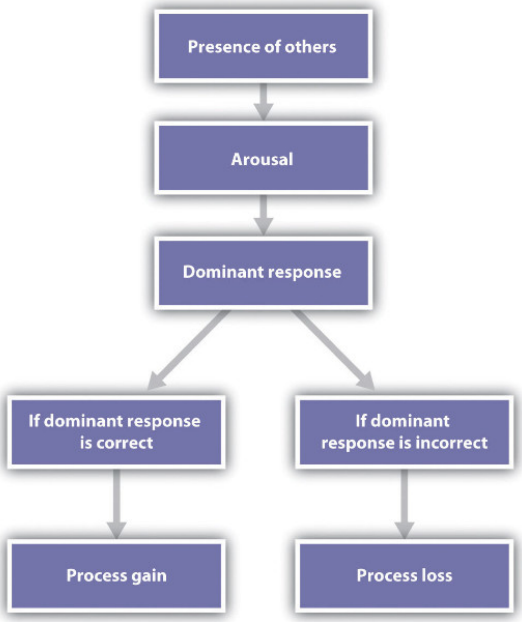

Figure 2. Multi-index selection process for athletes

3.4. Selection of Psychological Qualities

The selection of psychological quality is the process of selecting outstanding athletes and outstanding athletes' reserve forces by using modern psychology and kinematics theories, methods, and methods, combined with modern athletic theory. The performance of sports competitions depends not only on the performance of the athletes' skills and tactics, but also on their psychological quality before and during the competition. Sports events are different in the process of advancement, so their speed is much slower than that of other items, and most of the individual events are biased towards endurance. This requires athletes to have tough will qualities, be able to endure hardships and endure hard work, and a stable and lasting nervous system. Competitive sports is the amount of time it takes to determine the competitive event. This requires competitive players to have good time, speed judgment ability and physical power distribution ability.

4. Analysis of Reference Materials for Athletes' Specific Selection

4.1. Athlete Height

The height of Asian athletes has also evolved towards the heightening trend of European players in recent years. Generally, the higher the height, the better it is for athletes in sports. When selecting the height of athletes, bone age can be identified and height prediction can be made. Generally, the height of a man should be predicted. Not less than 1.75m, women should not be less than 1.65m. Lower limb length (lower limb length A / height × 100) The lower limb length A / height × 100 index has a high reliability in measuring the length of the lower limbs of the athletes. The greater the value of the length of the limbs A / height × 100, the better, because the lower limbs of the athletes are longer. It can increase the pedaling distance and action range, which is conducive to saving energy and improving the pedaling effect. The larger the height index value is, it is more beneficial to the athletes to complete the supporting and propulsion techniques.

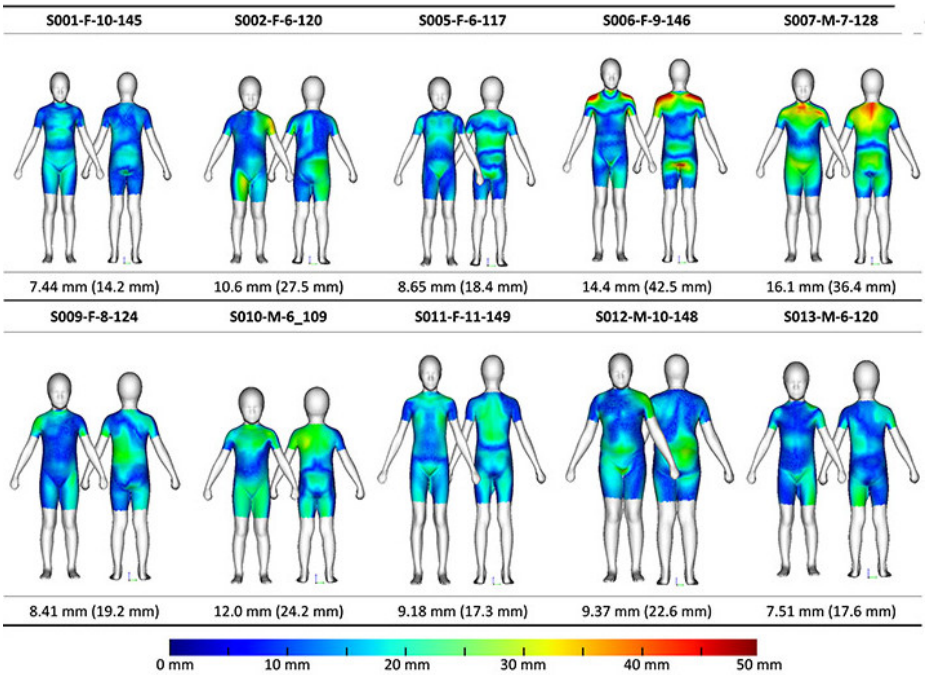

Figure 3. Athlete's physical characteristics and selection

4.2. Selection of Sports Performance

Athletics is a sport of specific skills, specific speed, specific endurance and specific will. It is an aerobic endurance project. It has a long distance and high intensity. Therefore, it requires athletes to have a strong physique and developed breathing when selecting materials. function. It is required to

be able to withstand a large load of physical fitness, high requirements on cardiopulmonary function, and the world's outstanding sports athletes have relatively strong cardiopulmonary function. In the selection of materials, we mainly selected the two indexes of maximum oxygen intake (12min run) and vital capacity / weight.

4.3. Analysis of Maximum Oxygen Uptake

The maximum oxygen uptake is an indicator of the level of oxygen uptake in the body. A high level of this indicator indicates a strong aerobic capacity. Good aerobic ability can provide athletes with a good cardiopulmonary function foundation during training and intense competition. The maximum oxygen uptake of athletes in the world's outstanding sports competitions can reach 80-90L / min, ranking first among sports in the same level as marathon runners in the world. Vital capacity is an indicator that reflects the level of the human respiratory system, and can reflect the basic conditions of human gas metabolism. Those with strong endurance items have a high index. Care should be taken when selecting materials.

4.4. Selection of Physical Fitness for Sports

From the characteristics of the project, athletes in sports competitions need to have good aerobic and anaerobic working capacity, while the athletes' center rate during the exercise is 160-190 times / min, and the heart rate can reach 200 times / min or higher, and maintain a high speed glide on this basis, so athletes engaged in this event should have a high speed quality. The rules of the sports competition stipulate that the competition field is provided with rugged mountains, and the entire journey must have 1/3 uphill, 1/3 downhill and 1/3 flat land. This determines that the athletes are coordinated and coordinated to complete the upper and lower limbs in all terrains. But the quality of strength plays a vital role in the performance of athletes. We use the following indicators to test the quality of athletes.

4.5. Exploration of Speed Quality

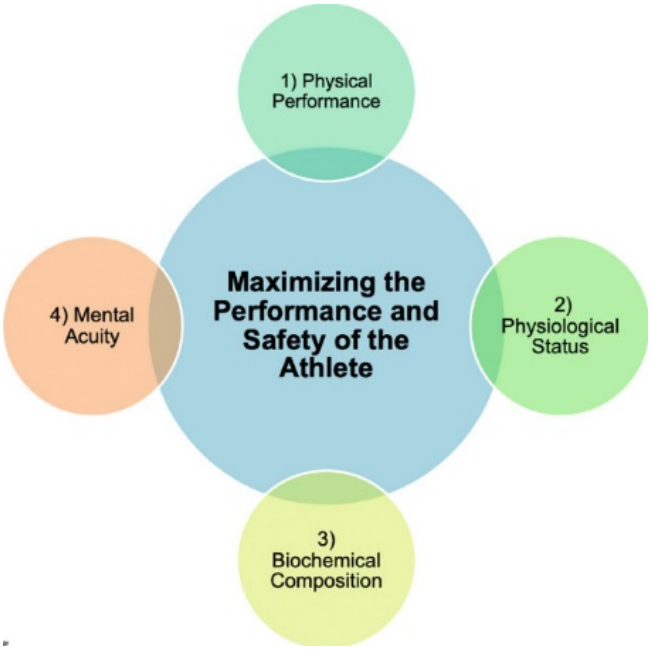

Figure 4. Athlete's physical characteristics and selection

Athletics events are endurance events. The 100m run is the main indicator of speed and quality. However, the increase in speed and explosive power, and the increase in anaerobic metabolism, will also greatly help the athletes' strength and endurance. Explosive power of lower limbs and lumbar abdomen muscles (five-step long jump) sports competitions have higher requirements for lower-extremity explosive power and lumbar and abdominal muscle strength. Standing five jumps can determine the athlete's ability in this aspect. Upper limb special strength (dumbbell swing arm)

Holding the dumbbell swing arm is an indicator that reflects the athletes' special upper limb strength. Sports athletes need to perform strong pole strength and strength endurance repeatedly in the long-distance competition. Through the number of movements performed by the athlete and the degree of movement standardization, it can reflect the strength of the upper limbs' special strength. Ten strides are an important indicator of the lower limb strength of athletes. According to the characteristics of the project, the 10 step jumps are similar to the traditional project sports events, and are a commonly used method in training, which is convenient for measurement and horizontal comparison. 3.4.5 Balance and coordination ability (10 side jumps) This index of 10 side jumps can reflect athletes 'lower limb strength and strength endurance. It is also a test of athletes' balance ability, side kick force, swinging legs and whole body. Means of coordination.

4.6. Analysis of Psychological Indexes of Athletes

The quality of athletes' mental quality is another key factor in their selection. Due to the limited current instruments and testing methods, we only choose the acoustic response of indicators related to specific items to determine the athlete's response speed. Acoustic response is a reflection of the human body's acoustic-kinetic response time. The shorter the time, the faster the athlete's response and the performance of the athlete's response. An obvious trend of modern international sports events is that the design of the taxi route is novel, the changes are complex and it is difficult to predict, and the athletes do not have enough time to fully familiarize themselves with the venue. Facing the complex environment and some unexpected situations in the competition, they are flexible. The quick-response player will undoubtedly shorten the adaptation time and complete the technical action more accurately and powerfully, thus gaining an advantage. It can be seen that reaction time is an indicator that must be paid attention to in the selection of sports athletes. According to the characteristics of sports events, due to the long duration of endurance exercise, such events require athletes' cerebral cortex to withstand a long time, repeated single and balanced stimulation. Therefore, when selecting talents, priority should be given to those strong, balanced and quiet youngsters. Their personality should be calm, resolute, courageous, not afraid of difficulties, and willing to endure hardships.

4.7. Athlete Evaluation Analysis

This index is selected by the athletes themselves as a reference. This index mainly combines the athletes 'many years of practical experience in sports projects, and evaluates the athletes' indicators through the performance of the athletes. The athletes ’ feeling and the will of the athletes are mainly selected. Two indicators of quality: competitive sensation is a sense of the athlete's innate ability to adapt to sports events. When athletes are engaged in sports events, the sports environment, such as slip, resistance, wind direction, wind speed, The temperature can make a reasonable judgment through perception, and can be adjusted in time, so as to adapt to the environment and achieve the ability to perform technical actions normally. This ability is an important factor in the success of athlete selection in sports. Athletes should pay attention to this indicator when selecting talents and select those athletes who have a strong sense of competition.

4.8. Athlete's Will Quality

The sports event is a difficult event. Not only to overcome the hardships brought to life by training in sports field for many years, but also to adapt to large amount of training and competition. Sports athletes must have good will quality, tenacious perseverance and hardship. Hardworking spirit. Only in this way can you achieve excellent results. Test evaluation, prediction evaluation, trial training, and key team members are determined by organizing athletes for sports competitions to conduct material selection tests, and timely and comprehensively evaluate and predict the test results in accordance with the established evaluation standards. Under normal circumstances, if the comprehensive scores of various types of test indicators such as athlete shape, function, and quality are passed, they can be used as future alternatives. Athletes with good or above can focus on tracking. Athletes can understand The athlete's strengths and weaknesses are used as a reference for developing a training plan. Through the selection test, the athletes with talents for sports events will

be trained intensively. After a period of training, through further follow-up tests on these athletes, select those athletes who have steadily improved their various functional qualities, and more potential athletes will enter key classes to focus to cultivate.

5. Conclusion

Improving athletes' awareness of material selection is an important part of the selection process. Through the selection tests in recent years, we found that a few years ago, athletes did not pay enough attention to morphological indicators. The results of morphological indicators were poor. In recent years, the results of various morphological tests have improved year by year, indicating that athletes have recognized the importance of morphological index selection. Sports and athletics projects are key sports in Jilin Province. Over the years, with the joint efforts of athletes and athletes, certain achievements have been achieved in various international and domestic events. It should be said that it is inseparable from the scientific selection of these years. At the same time, athletes can also find the strengths and weaknesses of athletes from the selection test, which provides a reference for athletes' selection and training. The selection of materials must also keep pace with the times, and constantly adapt to the development of training and projects. As a selection of scientific research personnel, in the practice of selecting materials, they must combine with the development of training practices and projects, through observation, measurement, analysis, tracking, Compare and constantly explore the laws of sports events to find more scientific and reasonable selection indicators. For newly-selected children and juvenile sports, athletes should focus on selection of shape, function and quality. Children and adolescents in the period of growth and development have greater plasticity, and their performance cannot be the sole criterion for selection of athletes. Other factors of athletes should be considered in general. In general, morphological indicators are more stable due to genetic factors, while quality, Special technology, psychological factors, and will quality indicators are more plastic and can be improved through cultivation.

References

[1] Xiang Fei. Research on the current status of the Chinese men's basketball professional league team title. Beijing: Beijing Sport University, 2017, 2, 10, pp. 126-129.

[2] Zhang Chongmin. Research on the naming rights of CBA league teams. Journal of Beijing Sport University, 2016, 3, 14, pp. 216-221.

[3] Hu Fei. Analysis of influencing factors and countermeasures for sponsorship of China Men's Basketball Professional League. Beijing: Beijing Sport University, 2018, 4, 14, pp. 123-125.

[4] Cai Junwu, Zhao Changjie. Sports sponsorship. Beijing: People's Sports Press, 2017, 3, 15, pp. 231-235.

[5] Xie Yalong, et al. Rules of Chinese competitive sports. Beijing: People's Sports Press, 1992: 282-310.

[6] Li Lianzai. Investigation and research on the selection of diving experience. Shijiazhuang, Compilation of Abstracts of Papers of the 2nd National Sports Science Academic Conference, 2018, 5, 14, pp.126-131.