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Research Article

The Important Function and Training of Sensitive Quality in Basketball Method Research

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Basketball is a skill-oriented group sport, which has been popularized and developed in China. However, the research on physical fitness training of basketball in China mostly focused on strength quality and speed quality, and less research was done on sensitive quality. Based on this, this paper aims to explore the important role of agility in basketball and put forward reasonable and scientific training suggestions in order to enrich the content of basketball training, complete the training system and to improve the level of basketball players as a whole.

1. Introduction

With the continuous improvement of China's comprehensive national strength, China's sports industry has also ushered in a golden period of development, and China has gradually improvedsports power by leaps and bounds [1, 2]. However, with the retirement of a generation of sports athletes, there happened a fault in China's sports talents, and it is particularly important to vigorously develop the training of China's sports reserve talents. In order to improve the overall quality of Chinese sports athletes, cultural education is the main form, and sports training is supplemented to help Chinese reserve athletes to enhance their comprehensive quality. Basketball, as one of the most popular sports in my country, benefits from the long development history of basketball and the influence of world-class events such as the NBA league in the United States.

In recent years, China has continuously deepened its investment in basketball project research and funds, venues, etc., and China's basketball skills and tactics have achieved considerable results. In competitive basketball projects, high-level individual training programs, and team cooperation tactics designation and related theoretical research, China's basketball skills and tactics have achieved considerable results. All are close to and some of them have reached the level of world-class echelons, but compared with the world's first-class basketball teams such as Europe and the United States, China still has many deficiencies in basketball competition, such as the congenital "deficiencies" caused by genetic differences, and the current situation on the basketball court [3]. In China, basketball players generally have problems such as insufficient adaptability, lack of rapid mobility, and unsmooth connection between personal strength and reflexes and special skills.

To develop the ability of basketball reserve players in these areas, we should first start from the young people. The young people are in the golden stage of rapid physical and mental development. They are extremely sensitive to the relevant quality training and consolidate their foundation in basketball so as to improve the current Chinese basketball players [4] and problems during exercise. However, teenagers are in a critical period of cultural education, and relevant basketball training can only be carried out in an amateur way so as to avoid the adverse effects of basketball-related training on teenagers' academics. Therefore, amateur basketball training is very important for the improvement of young basketball players' skills and personal quality.

In a word, basketball is a collective sport with the characteristics of confrontation, competition, fun, viewing, and commerciality. Basketball has the characteristics of strong physical confrontation, which requires that in basketball competition, during training, teaching, and other activities, participants and training personnel need to have qualities such as good speed, strength, and basketball skills and tactics. Sensitive quality is a combination of strength quality, speed quality, flexibility quality, and other qualities [5–9]. The agility of the body develops rapidly in adolescence, and the development of the agility of the human body gradually slows down in adulthood, and it continues to decrease with the increase of age. The high-speed movement, direction change, speed change, and other complex movements of basketball require a certain level of sensitivity as a support of athletic ability. Because the agile qualities of basketball players need to be exercised through more content and methods, the interestingness of the training content can better stimulate students' interest in basketball. The rich training content will provide the possibility to improve the agility of athletes and will also provide a more scientific training method for the cultivation of outstanding sports talents and promote the rapid development of basketball.

In many current academic researches and training reports, many coaches usually reflect that in our past training, we had a low level of cognition on the training of agility, and the training method was not systematic. How to further improve the agile quality of basketball players, make them more adaptable to the modern fast pace, and meet the requirements of modern basketball competitions has become a problem worthy of exploration by basketball experts and scholars.

2. Summary of Sensitive Qualities

2.1. Definition of Sensitive Qualities. The word "sensitive" is literally interpreted, and it can be divided into two parts such as "ling" and "sensitive," where "ling" refers to flexible and changeable, and "sensitive" refers to agility. In the field of physical education, agile quality refers to the ability of a limb in a specific sports scene to feel stimuli and to quickly change direction or change actions as needed. According to the combination of sensitive quality and special purpose, it can be divided into general sensitive quality and special sensitive quality [10]. General sensitive quality refers to the ability to adapt to the external environment when completing various complex actions. The test method is the T-shaped running test (Figure 1) and Nebraska sensitivity test (Figure 2); special sensitivity quality refers to the ability to adapt to changes in the external environment in close contact with professional technology according to the needs of the special project, and the corresponding test method is the dribbling and running test, as shown in Figure 3. The author believes that the agile quality refers to the force of the body to make corresponding spatial and temporal action adjustments when the external conditions change during the exercise process.

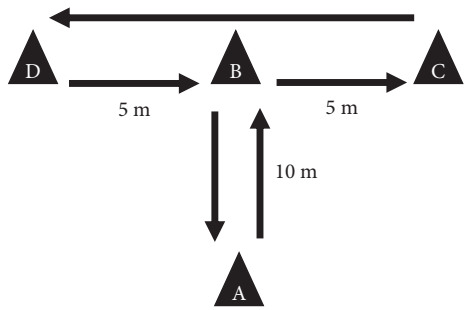

Figure 1: T-shaped running test diagram.

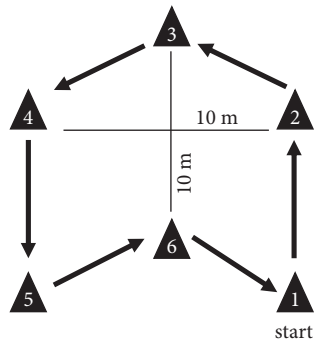

Figure 2: Sensitivity test icon of Nebraska.

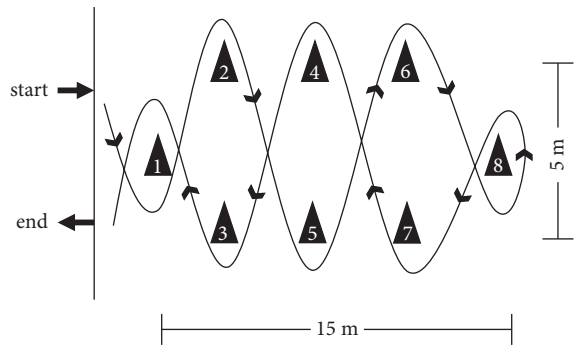

Figure 3: Dribble run test diagram.

2.2. Sensitive Quality Components. The level of athlete's agility is inseparable from the athlete's own strength, explosiveness, speed, and coordination, and it is also affected by the speed of the athlete's reaction speed and the mastery of their own special sports skills. The training of agility is closely related to the daily life of athletes, and sports and competitions.

The manifestation of speed quality in sensitive quality is mainly reflected in two aspects such as responsiveness and multidirectional speed [11–13]. The reaction speed depends on the ability of the neural reflex system, and the proficiency of technical movements and the multidirectional speed, etc., mainly depends on the coordination of the body, sex, strength control in different directions, joint flexibility, rapid change of direction of lower extremity muscles, and muscle

contraction ability. The main manifestation of strength quality in agile quality is the exertion of rapid strength [14]. The strength of rapid strength is inseparably related to muscle fiber type, muscle fiber cross-sectional area, and motor unit recruitment. It can be seen that the sensitivity quality is closely related to the nervous system, body coordination, muscle fibers, joint flexibility, muscle contraction ability, and many other aspects [15].

2.3. Current Research Status of Sensitive Quality. Sensitivity is one of the core components of an athlete's physical fitness and is often used as a measure of an athlete's performance in some fields.

An important reference for rapid response capabilities in a scenario or project, at present, is a general and common recognition for the importance of sensitive quality at home and abroad, and we are constantly trying to explore the final effect of sensitive quality training in different sports.

Scholar Sun [16] believes that agile quality can effectively measure an athlete's ability to quickly respond and deal with changes in complex and changeable situations such as quickly learning new actions or action combinations to deal with deliberate targeting by opponents. In complex collective sports competitions, the change in the field has strong randomness and inevitability, and agile quality training can significantly improve the ability of athletes to "brake quickly" and help overcome the enemy to win.

Scholar Li [17] found that agile quality is an important component of physical quality, and its training effect runs through the whole process of fluctuation of strength quality, coordination quality, endurance quality, and other qualities rather than being limited to the "fast" quality. They influence each other and the improvement of other qualities will lead to the improvement of agile qualities, and the latter will also reduce decision-making and additional coping costs, thereby improving the effectiveness of other qualities training. Under the modern multidimensional training system, the importance of agile quality training is self-evident.

Su [18] believed that agility is an extremely comprehensive and complex measure. "Sensitivity" not only includes physical factors such as explosive power and endurance but also includes psychological stress resistance.

Psychological factors included power, reaction power, and decision-making power. In sports, more emphasis is placed on the four stages of judging exercise power, reaction speed, reaction time, and seeking balance. At the same time, general agile qualities and special agility qualities are involved to characterize their commonality and individuality in the project. On the whole, the influencing factors can be roughly distributed in three aspects: the external environment, physiological factors, and psychological factors. Paying attention to these factors is of great significance for improving high-quality and efficient training programs for sensitive qualities.

Wang Jing and Wang Lei [19, 20]believed that for the precious adolescent stage, sensitive quality training should run through the growth of young athletes. According to the physical and mental development of adolescents at different stages, timely and targeted replacement of training content and guidance programs, included adopting principles or methods such as first easy and then difficult, first general and then professional, and adding fun activities during training, stimulate athletes' enthusiasm for training, and fully tap their sports potential.

3. The Role of Agility in Basketball

Throughout the world of basketball, every superstar has a physical agility that is different from ordinary people. Foreign scholar Hoskins once made a famous remark: "Sensitivity is the soul of basketball skills." This sentence is not a general statement, but has been accepted by more and more athletes, officials, and even the world. They have begun to pursue and promote the development of the entire basketball game towards the core concept of optimism, convenience, and sensitivity. It is worth mentioning that based on the ever-changing pace of basketball itself and the unpredictable emergencies on the field, it undoubtedly implies the importance of sensitive quality to basketball. A basketball player with excellent and sensitive quality will not be stupid. Stand and wait until the emergency occurs until the end, but after observing the reaction of the audience, make the most effective judgment in the shortest time, such as stealing fast break one-stop, as well as on-the-spot arrangement and play of the lore ball.

Basketball is a sport with tight offensive and defensive rhythms, high intensity, and intense confrontation [21, 22]. In order to achieve their own tactical goals or intentions, players on both sides need to adopt different techniques and tactics according to their different situations. Tactics are divided into offensive tactics and defensive tactics. Sensitive qualities are of great significance to the achievement of defensive and offensive technical and tactical goals [23].

3.1. The Function of Sensitive Qualities in Basketball Offensive Techniques and Tactics. In basketball, the attacker often moves the ball flexibly, breaks through quickly with the ball, has a certain degree of acceleration and direction change, and makes an emergency stop, so as to achieve the purpose of attacking [24]. In the whole process, basketball players' dribbling rhythm, accelerating change of direction, or making emergency stop shots play an important role in their agility. When the attacker runs without the ball, the athlete needs to make a quick response to the situation on the field so as to make a judgment, carry out the next action, carry out pick-and-roll, card position, etc. In addition to solid basketball dribbling skills, a player with the ball should also make an accurate judgment on the situation on the court so as to choose to pass, break, or shoot [25–29]. In the process of breaking through with the ball, the athlete is required to have good speed, coordination, and coordination. Sexuality and strength quality are all indispensable comprehensive factors in sensitive quality. Passing requires the ball-handling player to have good reaction speed and control ability in terms of strength, quality, and body direction. Shooting requires athletes not only to have excellent shooting ability

but also a good connection to the dribbling rhythm and quick stop and start. It can be seen that the sensitive quality has a huge supporting effect on basketball offensive techniques and tactics.

3.2. The Function of Sensitive Qualities in Basketball Defense Techniques and Tactics. The role of agility in basketball is not only reflected in basketball offensive techniques and tactics but also in defensive techniques and tactics. For defensive players, the response they need to make not only includes the situation on the field but also predicts the actions of the offensive players so as to take appropriate and reasonable defensive actions, such as timely switching or supplementary defense, man-to-man defensive tactics, and defense or positional defense. During the entire defensive process, athletes are required to have better reaction speed, flexible footwork, coordination of limbs, and the ability to accelerate quickly so as to achieve the purpose of interfering and preventing the attacker. In the process of defense, the foot movement of the defending player is extremely important, not only to respond to the action of the offensive player but also to adjust the footwork and body position in time to avoid dislocation or fouls [30]. Flexible footwork and good body control ability require athletes to have good coordination and quick reaction ability and carry out daily defensive movement exercises based on this so as to ensure that they can give full play to their defensive ability on the field. It can be seen that the important role of agile quality in defensive techniques and tactics is not less than that in offensive techniques and tactics.

4. The Rational Basis of Sensitive Quality Training

4.1. Physiological Basis. Under the influence of the nervous system, central system, and other control and command systems, human muscles continuously contract, stretch, etc., and the body shows different movement postures or movement states. Sensitive quality is one of the main physical qualities with strong comprehensiveness and high degree of complexity. In addition to the basic central nervous system control, its physiological connotation requires higher coordination of various parts and systems of the body. Too much emphasis on muscle strength will lead to tension and stiffness in the body, and too much emphasis on reaction and movement speed will lead to a lack of strength in movements, resulting in lower movement quality or defects in movement structure [31, 32]. Therefore, the training of sensitive qualities should meet the physiological basis of speed and strength as the premise, and the basic conditions should be followed by the formulation of the training content plan, and then the training should be carried out.

4.2. Basics of Training. Since the rapid development of sensitive qualities is in the adolescent stage, the training basis should be based on the human growth stage as the main reference for the division of the training plan. Sensitive quality plays an important role in the development and progress of sports skills and technologies in many sports. There are huge differences in the physical quality requirements of different sports. Therefore, the training of sensitive qualities should be based on all-round development and then enhance targeted exercises. Studies [33] have shown that the development of human agility in adulthood is slow and almost stagnant, which is not conducive to the development of agility in the later stage, and the training effect is poor. It can be seen that the development of sensitive quality should also be based on active training during the sensitive period of body development. In addition, there is a close connection between agile quality and many physical qualities. In the training process, the development and training of other physical qualities should be closely combined to improve agile quality in all-round development.

5. Basketball Special Sensitivity Training Principles

5.1. Sustainability Principle. The formulation of the training plan should meet the three conditions such as phase, periodicity, and integrity. The training of agile qualities in basketball has higher requirements for the scientificity and systematicness of the training plan. Therefore, to formulate a basketball-specific training plan for sensitive qualities, it is necessary to have complete and long-term systematic conditions. Divide a complete large-cycle training plan into multiple small stages, and make each stage have strong continuity, correlation, and operability, and at the same time, the principles of periodic training, interval training, systematic training.

The training principles are combined into a whole and integrated into the sustainable training plan principles with high continuity, strong scientificity, and strong practice [34]. This will promote the complete and efficient implementation of the entire training program, improve the sustainable development of the training program, improve athletes' ideological awareness of perseverance and persistent pursuit, guide athletes to establish long-term goals with the help of training results at various stages, deepen the depth of basketball students and athletes' understanding of the training plan, improve the enthusiasm of basketball players to actively participate in sensitive quality training, and correct their training attitude, thereby improving the resilience of athletes to participate in long-term training.

5.2. Holistic Principle. Sensitive quality is not the only one among the many qualities of the human body, but there are various qualities of the human body which play an important core role in different sports. Sensitive quality plays an important supporting role in high-explosive, fast-moving, and comprehensive basketball, and various complex and high-level basketball techniques and skills require the active participation of sensitive quality [35]. However, in terms of basketball as a whole, speed quality, strength quality, body shape, etc. are also very important for basketball. In addition to basic qualities, factors such as basketball awareness, ball

quotient, and adaptability are equally important to the development of basketball players' special sports level. Under the combined influence of many factors, other related factors are also needed to be taken into account in the formulation of basketball agility training plan, including the special required qualities of basketball and special sports skills training. Improve the comprehensiveness and integrity of the training plan, and avoid the phenomenon of physical fitness decline of athletes due to long-term single training. Therefore, the basketball-specific agility training plan focuses on agile quality and is based on quality training and special techniques and tactics.

5.3. Pertinence Principle. The pertinence of basketball sensitive quality training is mainly reflected in two aspects, one is quality pertinence, and the other is project pertinence. Sensitive quality is a comprehensive reflection of multiple qualities. When formulating agile quality training plan, the individual physical quality differences of participating athletes should be considered, and a highly targeted training plan should be formulated according to specific differences, and also make up for the shortcomings of basketball players' physical quality, improve the overall quality of basketball players, and lay a solid foundation for the improvement of sensitive quality. Project pertinence means that the formulation of the training plan, the use of means, and the characteristics of training load must meet the requirements of basketball. The sensitivity and quality training of basketball special aspects is mainly reflected in the training methods and methods in the training plan, for example, in the training process, adding basketball high-level dribbling practice and faking action practice or tactical movement practice. While improving the specificity of the training plan, the application value and practical value of the training plan should be improved in the view of development of basketball skills, the level of basketball competition, and the level of sports skills of athletes.

6. Basketball Agility Training Methods

6.1. Rope Ladder Training. Rope ladder practice, as the name suggests, refers to a derivative of rope skipping. Athletes jump twice at a time when skipping rope. This is also a standard test content for talent selection and testing of basketball players. Rope ladder exercises are mainly dynamic exercises that exercise the muscles of the four limbs of athletes as the main exercise target. Rope ladder exercises need to rely on the cooperation of the muscles of the athletes' lower limbs, and can also exercise the degree of coordination of the athletes' hands and feet, thereby improving the athlete's lower limb strength and lower limb sensitivity. In only 30 seconds of rope ladder exercises, the athlete's arm muscles, leg muscles, waist and abdominal muscles, and other muscle groups work together to improve the athlete's coordination ability. A major feature of rope ladder training is that it does not require the athletes to run continuously on the basketball court but only requires the athletes to complete the running action of the lower limbs during the continuous rope skipping movement, which can fully reflect the athlete's original lower limbs. and the sensitivity and speed of the quality.

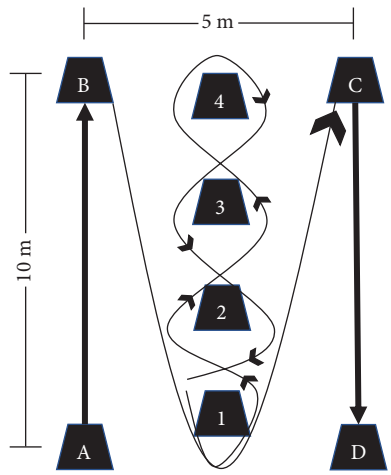

Figure 4: Illinois run test icon.

Rope ladders are commonly used tools in agility training not only in basketball but also in tennis, football, volleyball, badminton, and other sports. The rope ladder can make the whole training process more interesting and can greatly improve the training enthusiasm of basketball players [36, 37]. The rope ladder training method has a good promotion effect on the balance, foot speed, and lower limb strength of basketball players' agile qualities. The purpose of using rope ladders for agility training is to develop the ability of basketball players to move quickly and increase speed of footwork, fr example, using rope ladders to do left and right single-leg hops, step jumps, small steps, back kicks, and cross hip movements.

6.2. Rienteering Fixed Obstacle Course. Orienteering running is mainly to develop athlete's ability to quickly turn, body control, and speed quality. Often a few logo buckets can complete the deployment of the training ground, and common ones include T-shaped running, cross running, meter running, Illinois running (Figure 4), and Nebraska running. In the training process, the basketball players not only can run without the ball but also can integrate basketball techniques in the running process, such as dribbling, dribbling, and turning so as to improve the pertinence of training and then improve the technical level of basketball players.

6.3. Small Ball Training. The small ball training method is more common in the training of NBA basketball players. Within the range of 5 ~ 10 m from left to right (adjusted according to the actual situation of the athlete's level), the athlete performs fast movement exercises, and the trainers throw small balls from time to time during the practice [38]. The basketball player catches the small ball within the moving range. This method is mainly to develop the basketball player's quick reaction ability and body control

ability. In addition, small ball practice can also be added during the dribbling practice. For example, during the dribbling process, the sparring team throws the small ball from time to time, and the basketball player catches the small ball while continuing to dribble.

6.4. Back Run Training. Back run, according to two markers, starts from one point (starting point), runs to the other marker (ending point) according to a certain distance as required, and turns around immediately after touching the marker with your feet or hands (no need to go around the marker). Objects run back to the starting point, continue to turn around and run to the end point, repeat in a loop, and do several back and forth between the start point and the end point according to the requirements of the exercise. The key to the reentry run is the reentry technique, and the quality of the reentry technique has a greater impact on the final result. The technical essentials of turning back (take the right foot touching the line or the right hand touching the marker as an example) are that when running fast to the end, usually 2 to 3 meters before the end, slightly reduce the running speed, lower the center of gravity, run to the end, face sideways, finish line or marker, squat with left lower extremity, extend right lower extremity to finish line (or slightly ahead) to brake and prepare for kick off, press down the upper body, touch the line with the foot (or touch the marker with the hand) After the object, the upper body turned to the forward direction, the right foot quickly kicked off the ground, and continued to run forward quickly.

As shown in Figure 5, reentry running is mainly used to develop the speed quality of athletes and the ability to stop and start quickly. Reentry running is involved in basketball training in universities, and middle and primary schools in China and even in the daily training of professional basketball teams. This method has obvious effects. It has many advantages such as strong feasibility and low site requirements. The more common methods include "6 × 6 m" reentry, half-court "third-line" reentry, and full-court "four-line" reentry. This training method can also be used in a developmental manner. For example, when the basketball player runs to a specific position, he does not return immediately. The sparring staff can pass the ball, and the basketball player can practice catching and jumping, thereby improving the basketball player's reaction ability during the running process with the jump shot technique [39].

7. Training Notes

7.1. Grasp a Reasonable Exercise Load. When carrying out basketball-related sensitivity training, it is necessary to pay attention to the exercise load limit that can be endured by participants of different ages and sports levels and carry out training activities in a targeted manner so as to avoid athletes getting bored due to excessive load intensity [40]. Psychological and fatigued physical stateis important to ensure that athletes are in good physical condition and have a high attitude when participating in training.

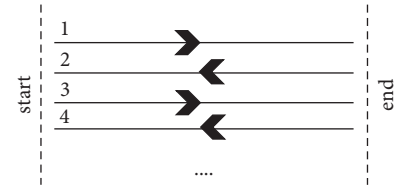

Figure 5: Schematic diagram of the return run.

7.2. Actively Changing Training Methods. During the training activities, pay attention to the physical adaptation of the athletes, and the training methods should be updated regularly to avoid the mental boredom of the athletes due to the single training method. Coaches should actively adopt different training methods to continuously stimulate new athletes so as to improve athletes' enthusiasm for training and improve training effects.

7.3. The Training Content Is Gradually Deepened. In the training process, the selection of training content should be from simple to complex and from easy to difficult. Training methods with high difficulty or high load intensity should be placed in the middle and late stages of the training phase, which can effectively improve athletes' enthusiasm and interest in training, as well as their enthusiasm for participation, and improve athletes' sense of achievement. For example, in the training content of orienteering running, a relatively low-difficulty reentry run can be used in the initial stage, and in the later stage, T-shaped running, cross running, and meter running can be carried out gradually [41].

7.4. Combining the Technical Characteristics of Different Athletes. Basketball is a collective sport. According to the role of different players, it can be roughly divided into inside players and outside players. A study [42] has shown that high-level men's basketball outside players are more affected by special qualities than inside players. High-level basketball inside players should increase the proportion of special speed and sensitivity training and special strength training in special training. It can be seen that in basketball, the training of sensitive qualities should be carried out differently according to the technical characteristics of different athletes, and "training" should be carried out according to their aptitude, so as to improve the pertinence, make the training effect more obvious, and comprehensively improve the level of athletes.

7.5. Comprehensive Development of Comprehensive Quality. The special physical fitness training of basketball players should follow the concept of "overall quality concept." In terms of method selection and training load arrangement, it should meet the development characteristics of modern basketball with high intensity, confrontation, and variability [43]. Therefore, in the process of basketball sensitive quality training, we should pay attention to the combination with other physical fitness training, improve the connection

between each quality training, and promote the all-round development of basketball players.

7.6. Pay Attention to the Psychological Construction of Athletes. During the whole training process, coaches should pay close attention to the psychological changes of athletes, and grasp the psychological conditions of athletes at different stages in a timely manner. Ideas enhance confidence, improve their sense of satisfaction, give certain affirmations, encourage athletes to set different goals for different stages in the training process, and help them overcome the "bottleneck" period of training.

8. Epilogue

When an athlete has excellent agility, it can naturally adapt to the training of the core strength of the body. To be more precise, the neurons and brain in the body can respond faster than ordinary people. This is why some sports are very strict in the selection of athletes and must require athletes to have innate agility.

Sensitive quality plays a vital role in basketball. In daily basketball training activities, it should be combined with other physical fitness exercises to develop sensitive quality, increase the emphasis on the training of sensitive quality, and adopt scientific and systematic training methods to develop targeted development and sensitive qualities of basketball players at different stages and levels.

Data Availability

The dataset can be accessed upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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