

# Discussion on the Application of Information Technology in Basketball Training

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**Keywords:** basketball; sports training; application information technology; practice

**Abstract:** Information technology is deepening, the information age is open in the front, basketball training and information technology are more integrated, applying information technology practice, for basketball training, opening up diversified channels and enriching diversified ideas. In basketball training, how to make information technology comprehensive and fully play its role, it is necessary to carry out practical analysis from the perspective of information technology application path in sports training, to clarify the application significance of information technology in basketball training, enrich the content of sports training, and stimulate The team members train their emotions and improve their comprehensive sports ability, and then focus on their application practice and practical requirements. With the continuous development and innovation of science and technology, human beings are entering an era of intelligent information. Information, materials, and energy are called the three major elements of social development. Information, as one of them, is important. It is self-evident that whoever holds the core scientific and technological information can stand out in the market dispute and occupy the commanding heights. The same is true for basketball training. Advanced and scientific training methods are the key to the core. Who can master the new information technology, and the skills will dominate the competition. Therefore, in basketball training, the application of information technology is crucial to the improvement of basketball technology, and has far-reaching effects.

## 1. Introduction

In recent years, in the basketball training, there have been many useful explorations and attempts in the application of information technology. Compared with the traditional training method, the superiority characteristics of information technology are more open, more scientific and more efficient. It can not only enrich the content of sports training, but also stimulate the training mood of players and improve the comprehensive ability of sports. . In terms of difficult movements, simulations can also be implemented and refinement can be carried out, and an external feedback channel can be established through information technology to enable the players to master the core technical movements in the movement more scientifically, effectively and quickly, and improve the tactics of the players. Calculating the literacy, this can also reduce the burden for the coaches and improve the quality of basketball training.

## 2. Application path of information technology in sports training

The rational use of advanced and cutting-edge information technology can make sports training more systematic and scientific. This requires the construction of a scientific and reasonable information technology application path in sports training. The main contents include three parts, namely, sports training data acquisition and management, sports training technical analysis and simulation, and sports training system simulation and construction. As shown in Figure 1.

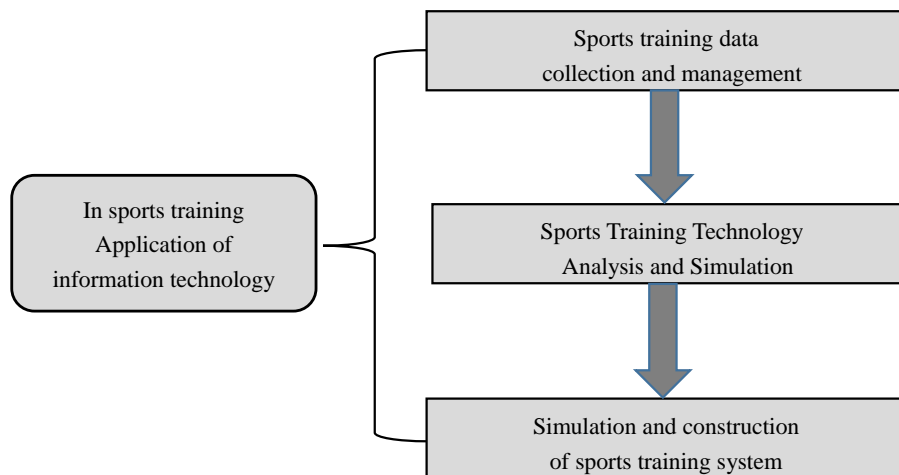


Figure 1 Application path of information technology in sports training

## 2.1 Sports training data collection and management

The sports training process is relatively a complex system. How to collect and store, classify and retrieve data related to sports training is the basis for scientific training. Recently, there are many application researches in real-time sports training data collection, sports training data management and analysis. Among them, real-time data collection mainly through multi-channel user interface, mechatronics, wireless and wired data transmission combined with each other. Data management and analysis mainly rely on data mining technology and data warehouse to establish a multimedia database, which is effective for scientific sports training and sports performance improvement. In the training data collection, based on sensors, various types of EMG testers, using computer and other information technology, real-time tracking of moving targets, real-time feedback training information and collecting sports data research and development, and achieved substantial development. At the same time, in the field of sports training data management, database technology applications are also maturing.

## 2.2 Sports Training Technology Analysis and Simulation

Based on computer vision and biomechanics, the use of virtual reality, human-computer interaction, intelligent monitoring and other cutting-edge information technology to simulate and analyze the human body training process is an effective means of sports training informationization. In the analysis of sports training techniques, based on the analysis of the impact of motion bio-mechanical graphics, the complex and diverse human-machine communication can be organically collected in a system, and quickly feedback in three-dimensional animation to directly display to athletes and coaches. Affect the results of the analysis and directly serve the sports practice. On the other hand, for different types of sports scenes, the new AdaBoost classifier can be used to detect and segment sports scenes. In addition, in terms of three-dimensional human motion simulation, the actual athlete motion video and the virtual motion of the virtual motion mobilization can be displayed on the same screen in the simulation analysis system, and the virtual athlete's motion display will be automatically adjusted, and the motion viewpoint will be maintained at The actual video capture viewpoint, which can accurately and intuitively compare the difference between the action of the recorded video and the standard action of the virtual athlete, better feedback to the athlete, and provide standardized guidance for the next training, thereby improving the exercise training effect.

## 2.3 Simulation and construction of sports training system

In addition to applying information technology to sports training data acquisition and management, technical analysis and simulation, it is also necessary to gradually develop and

develop a corresponding sports training support system. The sports training assistant system is derived from the mutual integration of various information technologies and is established based on the decision support system. It is mainly composed of video processing technology, intelligent testing technology, and large-scale database management technology of computer graphics technology. In the actual sports training, the system will combine the actual physical fitness indicators and basic technical conditions of the athletes, and integrate the whole sports training process into one, which can reduce the burden for the administrators and coaches, and provide the science for the coaches training control reference to reduce subjectivity and blindness in training decisions.

### 3. The significance of information technology application in basketball training

The rational application of information technology and the scientific development and effective guidance of basketball training can be said to be of great significance. In the basketball training, the modern information technology is fully utilized, the sports training data is collected and managed, and then the information technology is used for analysis and simulation. Finally, the trainer is scientifically and rationally constructing the operator through the sports assist system. Sexual guidance, improve the pertinence and orientation of basketball training, so that athletes can grow quickly. In other words, the application of information technology in basketball training is mainly manifested in enriching the content of sports training, stimulating the training of players and improving the comprehensive ability of sports, as shown in Figure 2 below.

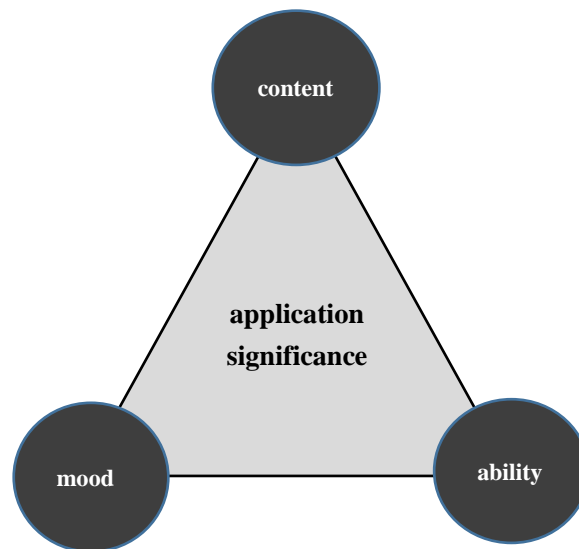


Figure 2 The significance of information technology in basketball training

#### 3.1 Enrich sports training content

In traditional basketball training, teachers are only dictating in terms of aspects, or teaching methods are limited to traditional media, such as blackboards, wall charts, etc. This theory teaching mode is boring and boring, and the enthusiasm of basketball players is difficult to mobilize. It is not ideal and it is difficult to satisfy people. However, integrating information technology into basketball training can enrich the content of sports training. First, it can realize vivid, visual and intuitive theoretical explanations. It can be difficult to change, simple and simple, and static and dynamic. Second, for the difficult and difficult points in the training theory, it can be interpreted in all directions, from multiple angles and dynamically; thirdly, with the aid of visual and audio information such as animation and images, the basketball players can understand more easily. Difficulties, in addition, can increase the training capacity to a certain extent, increase the training density, improve the training efficiency, and enrich the training content.

### 3.2 Inspire team members to train emotions

Guided by modern information technology, the methods are novel and diverse, and the methods are lively and lively, effectively breaking the traditional sports training mode that teachers explain and demonstrate. The application of modern information technology can well grasp the psychological characteristics of youth seeking and changing, and create a variety of situational experiences to stimulate the emotions of team members, and then fully participate in basketball training. And it can give multiple sensory stimulation, strong interactivity, large amount of information, and convenient transmission. Under such rich sports training content, the team members can maintain their attention and interest for a long-term and continuous manner, mobilize their individual subjective initiative, and inspire deeper Inner enthusiasm and inner potential.

### 3.3 Improve the comprehensive ability of sports

In order to carry out effective training and improve the level, the basketball team needs to give special technical guidance to all the team members to improve the comprehensive ability of the players. This is a high-intensity practical activity. During this period, in the early stage, the team members must learn and master these sports technical actions, basically relying on the coach's explanation and demonstration. This requires the coaches to demonstrate the accuracy and standardization of the action demonstration. In order to learn better, and master the normative actions. However, due to age, physical fitness and many other aspects, the coach's demonstration actions may be difficult to meet the requirements of standardization and standardization. At this time, through the integration of information technology, it is possible to effectively solve problems, rely on the sports training support system, and conduct basketball training and System feedback serves as a guide to standardize actions. Or through competitions, training materials, and team members to make analysis and comparison, find problems, and solve them, truly grasp the structure, sequence and route of technical movements, and achieve comprehensive capabilities such as observation, understanding, and innovation.

## 4. Application of Information Technology in Basketball Training

In basketball training, the application of information technology is mainly manifested in three aspects, as shown in Figure 3 below, which are used to simulate and disassemble difficult movements, conduct tactical drills in colleges, and dynamically create three-dimensional tactics.

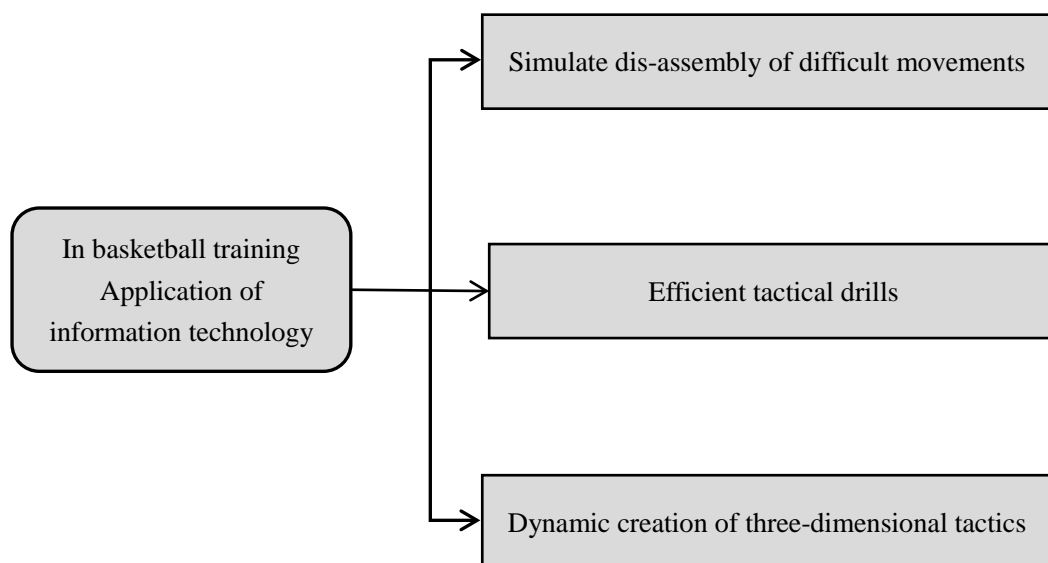


Figure 3 Application of information technology in basketball training

#### **4.1 Simulation dismantling difficult action**

In actual basketball training, some are more difficult and difficult to demonstrate. Some difficult movements need to be completed at high speed. During the transient period, the players can't see the details of these movements. On this basis, it is difficult to establish the overall representation of the movement. However, the slow speed demonstration reduces the effect and integrity of the movement. Repeated explanations and repeated demonstrations not only increase the burden on the coach, but also reduce efficiency and even lead to misleading. Reasonable and full use of information technology, can be used for different types of difficult movements in sports training, make common mistakes into relevant courseware, or perform simulations through the sports training assistant system, compare with standard actions, let the team carefully Observe, contrast, analyze, discuss, communicate, remind the details of the action related details, make a summary, let the team members can repeatedly observe and simulate based on information technology, to truly master the difficult technical essentials, and gradually regulate the action.

#### **4.2 Efficient tactical drills**

Basketball tactics are accomplished by quickly moving the position between the players and changing the offensive and defensive status. The realization of tactics makes complex and changeable, and needs various coordinates on the field to coordinate with each other. The dynamic organization of information technology can carry out non-linear information transmission from multiple levels, multiple directions and multiple angles, realizing secret real-time communication, which is in line with the basketball tactical arrangement. In basketball training, the use of information technology, in terms of thinking, is close to the logical habits of basketball players, which can reduce or even avoid detours in the team's thinking, help the team improve their thinking, build better, faster and more directly. In the tactical drill, when the tactical drills are carried out, the coaches are not required to stalk and issue orders for arming. Only the use of information technology for critical information transmission is required, and tactical drills can be carried out efficiently.

#### **4.3 Dynamic creation of three-dimensional tactics**

The innovation and creation of new technologies and new tactics is an important issue in basketball training. Information technology has become one of the best creative tools to dynamically create stereoscopic tactics. It breaks the experimental pattern of the players and can shorten the whole process time, close the distance space, make the information have more time and space span, and display the static image as a dynamic character image. On the other hand, it can also be created by creative splicing, combination transformation, etc. For complex and continuous tactical movements and technical movements, virtual information technology can be used to decompose, combine, and focus on marking, which is easy for players to understand. In terms of speed, direction and amplitude, it is also free to implement creation, so that the tactics will be more varied and more stereoscopic.

### **5. Conclusion**

In the basketball training, the application of modern information technology can well grasp the psychological needs of young basketball players in seeking knowledge, seeking new ideas, and changing their psychological needs. With rich training content and various training methods, they can stimulate the training of players. Emotions and passions, so that they can fully participate in it, in order to better achieve the improvement of the overall technical level, the three-dimensional team tactics, in order to stand out in the competition.

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