Research on the Cultivation of Students' Attack and Defense Awareness Based on Computer Technology

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Abstract: Under the background of social development in the new era, computer technology has been continuously improved, and it has been widely applied to various fields, especially in education. It has achieved remarkable results and is highly valued. Taking basketball teaching in physical education as an example, basketball sports not only requires athletes to combine intelligence and physical strength, but also needs to reflect their own perceptions and judgments about the surrounding environment, so as to ensure that basketball performance can be effectively improved. This article will combine the current situation of students with computer to improve the awareness of basketball prevention, conduct experimental investigation and analysis, and put forward specific application strategies to enhance the overall offensive and defensive awareness of students' basketball under computer technology.

1. Introduction

Driven by the level of people's culture, people gradually realize the importance of physical exercise. As a more common sport, basketball is loved by different groups. With the basketball sport, not only can students improve their physical fitness, but they can also help students develop good teamwork and flexible operation skills. At present, the introduction of computer technology into physical education has become a new form of teaching in basketball teaching. Based on this article, the practical application of computer technology will be discussed in order to cultivate students' awareness of basketball offense and defense.

2. Basketball offense and defense awareness

2.1 Basic definition

Basketball offensive and defensive awareness, that is, in the process of conducting the game, it is necessary to comprehensively consider the overall feelings of the athletes in the pre-game period and after the game, and to ensure that the basketball players can have a clearer understanding and understanding of the basketball sport, which is also basketball. Using human intentions, you can penetrate the surface of things to think deeper. However, basketball offensive and defensive techniques are the rules that athletes appear in the process of basketball games, which are analyzed and summarized to form a certain technical strategy. At the same time, the basketball offensive and defensive awareness is also the athlete's own deep thinking and understanding of basketball sports. For example, in daily training and teaching, teachers can help students improve their basketball strategy skills by using the connotation of basketball offensive and defensive awareness. Timely protection measures can also make corresponding defensive tactics when the opponent wants to make an attack. With the support of this tactic, the students' awareness of basketball offense and defense can be significantly improved.

2.2 The role of offensive and defensive awareness

As a more important part of human beings, consciousness is also the most essential difference between humans and animals. Through psychology, people can accurately understand the surface of

things, and can lead human beings to understand things in a more in-depth direction, and then clarify the relationship between people. In the process, people will gradually form their own characteristics. And the precise determination of their goals, so that the action plan specified by them can be implemented. Under the influence of this kind of consciousness, athletes will constantly adjust and improve their own behaviors and abilities in accordance with their overall development, so as to ensure the final results. In addition, the offensive and defensive awareness will also be related to the understanding and cognition of the mobilization of the game, and through this to produce a specific psychological activity, under further observation, the mobilization will present its own analysis and thinking of things. In the past basketball games, it was mainly demonstrated by the potential inner activities of athletes and professional guidance techniques. In the game, athletes compete with their opponents with their physical qualities and offensive and defensive awareness. The offensive and defensive awareness of athletes can fully express their behavior. If the athlete's offensive and defensive intentions continue to increase, his ability to adapt to the game will gradually increase, and the offensive and defensive ability of the athletes in the game will directly affect the overall effectiveness of the game. Basketball's offensive and defensive awareness is one of the most basic skills, which can fully reflect the professional level of athletes, thus helping athletes to face the emergent situation more flexibly during the game, and then at the end of the game.

3. Student basketball attack and defense awareness test program under computer technology

Introducing computer technology into basketball teaching is a new attempt at present, especially in the application of students' awareness of offense and defense. In order to prove the improvement effect of students' offensive and defensive awareness under computer technology, an experimental investigation is launched. The specific situation is as follows:

3.1 Experimental preparation stage

In this study, two classes currently taught are used as experimental subjects. In the preparation stage, the basketball skills of the experimental class and the control class are tested. The main test contents are: one-minute shooting, half-time round-trip dribbling, and then the final result of the test is recorded. In combination with this experiment, students' judgment on basketball and the comprehensive ability of students are judged, and the results of various test data are recorded.

3.2 Attack and Defense Consciousness Experiment under Computer Technology

In the experimental class and the control class, computer teaching and regular teaching are adopted respectively. In the process of basketball teaching, the experiment is mainly carried out by means of computer technology, and the requirements of experimental teaching are strictly followed, and the accuracy of the experiment is guaranteed to obtain the specific situation of students' "attack and defense awareness" under computer technology. Before class, teachers need to use computer technology to prepare for the class, and then prepare the students for the various stages of the experiment. At the same time, teachers need to supplement the steps in the teaching process, and improvise according to the established teaching plan to actively participate in the experiment and think about it, to ensure that students can learn in a pleasant environment.

3.3 Analysis of results

Compare the results before and after the experimental class and the control class. The specific data is shown in Table 1.

According to the experimental data in Table 1, the average class score of the control class increased by 1.7692 before the experiment in the half-time round-up layup. When the one-minute shot was taken, the control class was more than the pre-test standard after the experiment. The deviation is reduced by 1.3921. In the half-time round-up layup, the experimental class increased by 5.9705 after the experiment than before the experiment, and the standard error average was reduced by 1.50031 after the experiment. When the one-minute shot was taken, the standard error average

was after the experiment. It was reduced by 0.6108 before the experiment. Through the auxiliary teaching of computer technology, the students' awareness and level of offense have been significantly improved, and the awareness of anti-ball is also significant.

Table 1 Statistics before and after the experimental and control classes

		Average Mean	Number of people	Std.Deviation	Std.Error Mean
Control class	Before the experiment	35.8856	30	12.36645	2.36540
Half-time round-trip layup	After the experiment	37.6548	30	11.25997	1.54821
Control class	Before the experiment	1.52	30	1.6520	1.3642
One minute shot	After the experiment	2.36	30	0.2599	0.5460
Experimental class	Before the experiment	30.6842	30	8.6997	1.86541
Half-time round-trip layup	After the experiment	36.6547	30	7.3654	0.36510
Experimental class	Before the experiment	2.01	30	1.9872	1.365
One minute shot	After the experiment	3.362	30	0.0323	0.7542

Through the experimental investigation, it can be seen that the use of computer technology can effectively improve the performance of students in all aspects, and has a significant effect on the improvement of students' awareness of offense and defense.

4. Application of Computer Technology in Basketball Attack and Defense Consciousness Cultivation

How to use computer technology to improve students' offense and defense awareness is an important part of this paper. It mainly includes the application of Sport VU data and the application of simulation technology to improve the awareness of offense and defense. The specific operations are as follows:

4.1 Develop a personal training plan using Sport VU data analysis

With the Sport VU, the student's sports data can be fully analyzed. Figure 1 shows the overall flow of the technology.
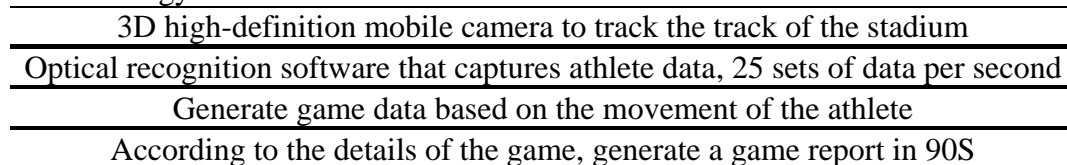
3D high-definition mobile camera to track the track of the stadium
Optical recognition software that captures athlete data, 25 sets of data per second
Generate game data based on the movement of the athlete
According to the details of the game, generate a game report in 90S

Figure 1Sport VU data analysis system operation process

Through the analysis of big data, the values of students can be fully displayed. In the data analysis mode, not only can the data of the student's physical condition be fully reflected, but also the student's exercise data can be reasonably analyzed and processed, and it can be effectively applied to the athlete's value development. In competitive sports, data analysis plays an important role. In the NBA, data analysis is used. The most representative team is the Houston Rockets. Through data analysis, the physical condition of each athlete and the status of the athletes can be fully presented, thereby enhancing the overall effectiveness of the individual training program.

4.2 Simulation technology simulation to enhance students' awareness of offense and defense

Under the application of 3D simulation technology, the existing deficiencies in basketball teaching can be comprehensively improved. Students can easily understand the main points of the athlete's top technology, and then enhance the effect of visual training. The specific process of using basketball simulation technology is shown in Figure 2. The modeling is done by 3DMAX to render OpenGL and draw it graphically. This not only ensures the versatility of the system in specific operations, but also enables simplified modeling.

		Keyboard, mouse	
3DS		OpenGL	
OpenGL	model	Graphic drawing	system
Modeling	Explanation	system	display

Figure 2 basketball simulation system

4.3 Labeling key actions with images

In order to ensure that students' basketball interest is stimulated, teachers can use multimedia to present wonderful videos or pictures in the basketball field to students, especially the more critical movements, to deepen students' students through slow motion or suspension. Teachers should pay attention to the scientific nature of integration when selecting pictures or videos, and ensure that students can use their key skills in the pictures to enhance their offensive and defensive awareness. If necessary, teachers can present them to students in the classroom through personal demonstration.

4.4 video playback coherent action, master attack and defense details

With video, a series of coherent movements can be demonstrated, but because basketball requires students to master a variety of more complex tactical skills, such as pinch-matching, cover coordination, etc., to ensure that students can watch more smooth video. Teachers need to use Adobe Premiere technology to trim and organize the video. In the process, special effects are needed to ensure that the video can be presented in an intuitive and independent manner.

Animate each action in the basketball tactics and then present it to the students in an animated way. In the actual combat of basketball, the offensive and defensive skills are the skills that students must master. Only the skills of clearing offense and defense can help students better understand the details of basketball. This kind of animation is mainly combined with 3DFlash Animator software. In addition, teachers need to flexibly master the PPT production method and reasonably control the details of the animation during playback. With the support of computer technology, students can actively participate in the following study and discussion, so as to enhance students' awareness of offense and defense, so that students can deepen their skills in basketball and have a good support for students' future study and development. Then, students will truly understand the essence of basketball.

5. Conclusion

In summary, this article elaborates on the cultivation of students' awareness of basketball offense and defense, and helps students to have more basketball offensive and defensive capabilities with the most advanced computer technology. With the support of computer technology, the students' previous learning patterns will be diversified, and the video and pictures will be used to more flexibly grasp the basketball offensive and defensive skills, thus improving the students' ability to adapt to basketball games.

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