Research into the Application Effect of Basketball Teaching Method in the Multimedia Environment

Honglong Xu[1], Yunfei Li[2,*], Qian Li[3]

[1]Department of Physical Education, Beijing International Studies University, Beijing, China
[2]Capital University of Physical Education and Sports, Beijing, China
[3]Department of Physical Education, University of International Business and Economics, Beijing, China
*Corresponding author: 515832373@qq.com

Abstract: Under the traditional teaching mode, in order to enable students to master the correct basketball technology and sports skills, teachers usually demonstrate and let students practice through repeated actions. However, it is inevitable that students will get bored when they repeat a lot of exercises. Multimedia embodies pictures, texts and sounds, so it can vividly show the dynamic change process of technical actions and effectively stimulate the enthusiasm of students in learning basketball techniques. Therefore, some multimedia content such as micro lesson explanation and game video can be added in basketball teaching to solve the difficult display of complex technical actions; and we can also record videos of the teaching process to clarify the teaching deficiencies and adjust teaching strategies in time, effectively promoting the innovative development of basketball teaching.

Keywords: Multi-Media; Basketball Teaching; Colleges and Universities; Application Effect

Focusing on the fundamental question of "what kind of people to cultivate, how to cultivate people, and for whom to cultivate people", the "Educating Five Domains Simultaneously" has become a new high point and a strategic deployment for the current education reform and development. Physical education is to strengthen students' physique and thus needs to be reformed in accordance with the new teaching objectives in the new era. As one of the three major ball games in China, basketball is an important sport in the physical education curriculum at Chinese colleges and universities and is popular among students, playing a non-negligible role in the cultivation of physical and mental qualities of college students. However, the traditional teaching mode with single teaching content and solidified teaching mode restricts the level of basketball teaching to a certain extent and hinders the enthusiasm of college students in basketball. In order to break the barriers of traditional teaching and improve the effectiveness of basketball courses, it is necessary to introduce multimedia resources such as micro lessons and videos in a multimedia environment, design and organize more vivid and efficient classroom teaching activities, promote the gradual improvement of college students' basketball literacy, and promote the innovative development of physical education at colleges and universities [1].

1. The Need for Multimedia Technology Due to the Characteristics of Basketball Teaching

Basketball is a collective rivalry activity that revolves around overhead baskets and basketballs, which focuses on how to motivate the activists to put the basketball in the basket faster and more accurately and to disrupt the opponent's shot. The most significant characteristics of basketball are "high" and "accurate". In addition, compared with other sports, basketball has the following characteristics.

1.1 Spatial Confrontation

Based on the special high-altitude movement law of basketball, the two sides involved in basketball attack and defend with different tactical formations and technical means, reflecting the unique high-altitude movement law of basketball.

1.2 Multi-variable and Integrated

Basketball is a comprehensive competitive art, with a wide range of technical movements and

tactical formations, combining both space and time, and reflecting the combination of different combat and collective collaboration.

2. Diversified Contents

Specialized basic skills, special technical movements, and tactical cooperation methods make basketball contents more unique and diversified.

Because of the uniqueness and complexity of basketball, it is difficult to form a good teaching effect by simply relying on teachers' explanation and demonstration, which is not conducive to students' accurate and rapid mastery of basketball techniques. And the integrated processing of animation, video, sound, text and other information can break through the difficulties of basketball learning, so it is an effective means and try [2].

2.1 The Advantage of Applying Multimedia Technology to Teaching Basketball

Multimedia technology is the combination of computer-aided teaching and modern multimedia teaching. With the increasing maturity of multimedia technology, it is widely used in teaching, and the advantages of multimedia technology in college basketball teaching are becoming more and more prominent.

2.2 Dynamic Presentation of Contents to Improve Sports Skills

The traditional basketball teaching in colleges and universities is mostly based on teaching basketball skills, and the teaching activities mainly revolve around basketball practice, rarely involving the specific explanation of theoretical knowledge of basketball. Even when it comes to the history of basketball, professional game norms and other professional content, it is mostly dictated by teachers, which is not conducive to the improvement of students' basketball literacy. The theoretical content of basketball teaching can be enriched with the help of multimedia technologies such as micro-learning videos, audio-visual materials, and video videos. At the same time, in basketball teaching, teachers are unable to make synchronous commentary nor slow-motion demonstration, but with the help of multimedia technology, teachers can not only achieve slow-motion demonstration, but also freeze frame, slow playback, and students can get a more intuitive understanding of the essentials of basketball techniques. In addition, to make students feel their own action image more intuitively, teachers can also shoot videos of students' basketball practice, compare and analyze students' actions with the correct action, so that students can identify their own shortcomings and make self-correction [3].

2.3 Stimulate Students' Learning Interest and Improve Teaching Efficiency

Interest is the driving force of learning. Once students take interest in basketball, they will invest more energy in practice. In basketball learning, students are often exposed to monotonous technical explanations and movement demonstrations by teachers, which are difficult to stimulate students' interest in learning.

In the multimedia environment, teachers can set up diversified teaching contents with the help of multimedia, such as using classic basketball game videos, leading students to understand the tactical characteristics of basketball games, analyzing basketball games from a professional perspective, imparting basketball knowledge to students while cultivating their interest in it. Teachers can also optimize the original basketball training and teaching content through multimedia technology, show fancy basketball performance videos for students, and show students different basketball characteristics and cultures to motivate them.

3. Strategies of Applying Multimedia Technologies in Basketball Teaching

With the rapid advancement of technology, multimedia technology has provided a new channel for basketball teaching. From the perspective of improving the efficiency of basketball physical education in colleges and universities, multimedia techniques are used in all aspects of basketball teaching preparation, basketball theory teaching and basketball technology teaching, so as to improve the efficiency of basketball teaching.

3.1 Application of Multimedia Technology in Basketball Teaching Preparation

Multimedia is mainly based on animation to show the teaching content. For example, the teaching content is presented dynamically in the lesson plan through movement, rotation, fast and slow speed changes, sound and color changes to better reflect the action elements of basketball. In the lesson preparation, if teachers can use multimedia technology scientifically and reasonably according to the teaching content, it can not only make a breakthrough of traditional basketball teaching limitations and mobilize students' enthusiasm comprehensively, but also pave the way for the later theoretical teaching and technical movement teaching activities [4].

Take one-handed over-the-shoulder shooting technique pre-class preparation session as an example, before the class the teacher elaborated a micro-lesson, dividing the knowledge of one-handed over-the-shoulder shooting into 5 modules and 9 knowledge points. The micro-lesson was created around the importance of the one-handed shoulder shot, demonstration of the basic movements of the one-handed shoulder shot, explanation and demonstration of a single demonstration surface, analysis of the decomposed movements of the one-handed shoulder shot, and analysis of the complete movements, and the micro-lesson video was pushed to the students through the online platform so that the students could form a preliminary knowledge of the basketball techniques to be learned in the class before the class.

3.2 Application of Multimedia Technology in Teaching Basketball Theories

Basketball teaching in colleges and universities covers two main modules: one is theoretical basketball knowledge; and the other is the practical training module. In the basketball theory teaching, many teachers usually start teaching by means of oral description and discussion. In the multimedia environment, teachers can introduce multimedia technology appropriately according to the physical and mental characteristics of college students as well as the content of classroom knowledge.

In the teaching of basketball teaching theory, in addition to the origin and development of basketball, the requirements and precautions of basketball training, the rules of basketball matches, the characteristics of the game system and other theoretical knowledge, teachers can also introduce basketball referee method in teaching. For example, the introduction of professional basketball game videos with the help of new media technology enables students to have a more perceptual understanding of theoretical knowledge through videos.

3.3 Application of Multimedia Technology in Teaching Basketball Techniques

Basketball skill training is the key link of college basketball teaching. From the traditional perspective, teachers complete the teaching of basketball technology through repeated demonstration and explanation. However, due to various factors, it is difficult for teachers to synchronize action and explanation. In order to solve the difficulties in teaching motion technology in basketball teaching, teachers can make corresponding demonstration actions into animation forms, and teach the technical actions through freeze frame and other forms. In addition, teachers can explain the details, so that students can quickly break through the difficulties in learning.

Taking the explanation of the technical action of "three-step shot by one hand over shoulder" as an example, teachers can use multimedia technology to decompose the preparation posture, squatting, wrist flexion and arm extension of one handed shoulder shot, and then display them as a whole through a complete video. In addition, teachers can also record students' practice into video, and then show it to students with the help of multimedia technology. Through comparative analysis, students can find their own technical essentials.

4. Effect of Applying Multimedia Technology in Basketball Teaching

To further understand the optimization effect of basketball teaching methods in colleges and universities under the multimedia environment, 50 freshmen of a university were selected as the subjects of investigation, and a month long experimental teaching was carried out on these 50 students. In the first two weeks (before the experiment), teachers used traditional teaching methods to carry out teaching, and recorded the students' listening and basketball skills; in the last two weeks (after the experiment), the method of combining multimedia teaching with traditional teaching mode was adopted, and the traditional teaching mode was adopted in the control class. After two weeks of

comparison, the differences between the experimental class and the control group in learning interest and mastering basketball skills are increasingly evident.

4.1 Comparison of students' listening before and after the experiment

Table 1: Comparison of Students' Listening before and after the Experiment

Group	The number of people who have listened carefully for more than 70% of the time	The number of people who have listened carefully for 50%-70% of the time	The number of people who have listened carefully for less than 50% of the time
Before experiment	18	20	12
After experiment	30	15	5

From the comparison of students' listening before and after the experiment in Table 1, multimedia technology assisted teaching can more attract students' interest in learning, which is conducive to the improvement of classroom efficiency.

4.2 Students' mastery of techniques before and after the experiment

Table 2: Students' mastery of techniques before and after the experiment

Test items	Before experiment	After experiment
1 minute jump	2.55	6.18
Full court comprehensive layup (seconds)	36.56	30.14
Hands chest pass (score)	4.48	7.48

The data in Table 2 shows that the students' basketball skills have improved after the experiment, which shows that multimedia technology has obviously helped students to learn tactics and master technical essentials.

It can be seen that the interaction of multimedia technology can enable students to actively participate in learning and promote students to change from passive learning to active learning, which is of great help to enhance students' interest in learning and improve the efficiency of basketball theory teaching. At the same time, multimedia technology can help students master the essentials of basketball movement.

5. Conclusion

To sum up, multimedia technology has enriched basketball teaching means and improved teaching quality and efficiency. Therefore, P.E. teachers in colleges and universities should, in combination with the actual situation of basketball teaching, students' basketball knowledge and learning needs of basketball technology, appropriately, timely and appropriately introduce multimedia technology into all aspects of basketball teaching, so as to promote the improvement of the overall basketball teaching quality.

References

[1] Lei Yiming. An empirical study of multimedia technology in high school basketball teachingin ethnic areas [D]. Qiannan National Teacher's College, 2021. DOI:10.27881/d.cnki.gqnmz. 2021. 000037.
[2] Li Yuchun. Research on the training methods and improvement strategies of common basketball teaching in multimedia teaching [J]. China Journal of Multimedia and Network Teaching (Lower Journal), 2021(09):98-99.
[3] Tan Jia. The application of multimedia technology in teaching basketball technology in secondary schools [J]. Modern vocational education, 2021(05):168-169.
[4] Zhang Ming, Zhang Xingxing, Li Changze. The effective use of multimedia technology in basketball training in colleges and universities [J]. Innovative research on ice and snow sports, 2021(15):193-194.