Multimedia Assisted Badminton Teaching Courseware

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Abstract. China's sports development history is very long. China also attaches great importance to the development of sports. Known as the king of sport, badminton is the most popular sport in the world. Many foreign sports players will pay attention to badminton learning and exercise. Many schools attach importance to physical education. Many schools attach importance to the basic teaching of badminton. However, many teachers think that the traditional badminton teaching method has many problems. With the development of multimedia technology, experts put forward the application of multimedia technology in badminton teaching process. This paper briefly introduces the current situation of badminton teaching. On this basis, this paper puts forward the related concepts of multimedia badminton teaching.

Keywords: Multimedia, Assistant Teaching, Badminton

1. Introduction
Today's students are in poor physical condition. Their sports performance is not up to standard. This is a very serious problem. The Ministry of education calls on schools to strengthen the standard of physical education. In order to effectively enhance the physical quality of students, many schools pay attention to sports learning [1]. They will teach students to learn all kinds of ball games and gymnastics. Badminton is a well-known sport. It is believed that students can also exercise themselves effectively through badminton. However, many schools found that the traditional badminton teaching has been unable to adapt to today's sports reform. People turn their attention to multimedia technology. Multimedia technology mainly uses video and audio technology to show all kinds of hard pictures and sounds vividly. Compared with the traditional teaching, multimedia assisted teaching can effectively improve students' interest. It can make students concentrate more quickly. The integration of multimedia technology into badminton teaching is an innovative process. Experts believe that this way can improve the quality of physical education teaching (see Fig 1). In order to verify this hypothesis, this paper describes the current situation of badminton teaching. Using multimedia technology to make innovative courseware has become the primary goal of this paper. In addition, this paper also puts forward some innovative technology of multimedia technology in badminton teaching.
2. The present situation of making badminton courseware

2.1. Many schools will not make sports courseware
In fact, examination oriented education is the wrong direction of education. This trend has led to many schools do not pay attention to sports. Physical education in many schools is usually occupied by other courses. Many P. E. teachers can't make P. E. courseware [2]. The content of physical education course is very simple. Traditional badminton teaching course content has no relevant standards. This is the current situation of traditional badminton teaching.

2.2. There are no rules in the content of courseware
Badminton learning should be gradual. Hasty learning can't practice hitting well. The Ministry of education's surprise inspection led to many physical education teachers to develop some courseware without rules. The content of the courseware does not conform to the common sense of physical education. There is no order in the process of teaching students Badminton by physical education teachers. Accumulation learning is not reflected. Badminton movement knowledge can not be deeply understood by students.

![Three dimensional simulation environment of badminton movement.](image)

2.3. The content of courseware is limited by traditional teaching thinking
The traditional thinking of badminton teaching is difficult to adapt to today's sports training. Today's students' physical quality is very poor. It's hard for them to take a lot of physical training. The author thinks that PE teachers should design more kinds of badminton teaching courseware. Weak students are suitable for simple courseware. Strong students are suitable for complex courseware. It is difficult for traditional teaching thinking to limit the content of courseware.

2.4. The boring courseware content makes students lose interest
Many students think that physical education is free time. The sudden arrival of courseware bored the students. Some boring courseware content makes the students feel tired. Today's students' physical education learning should have a new era of teaching standards. The PE teacher is the designer of the classroom. They are also the teachers of teaching results. Innovative courseware content is what teachers need to complete. Innovative content can attract students' attention.

3. Research on the theory of multimedia assisted instruction courseware

3.1. Theoretical concepts of media
In English literature, the concept of media comes from Latin. It refers to a carrier of information transmission [3]. This carrier can be a series of technical means. Experts believe that media is a kind
of media object to store information. There are two types of media. They are software media and hardware media. Computer software is the software that stores information. Hardware media refers to television sets and computers.

3.2. Theoretical concepts of Multimedia
Multimedia refers to the collection of multiple media. It tends to be a composite type of media. Multimedia emphasizes the feeling of multiple senses. It can give people more intense visual color. It can also provide a control environment for human-computer interaction. Multimedia usually combines two or more media forms. In short, it can provide users with all kinds of information through complex human-computer interaction mode. It's an upgraded version of media.

3.3. Theoretical concepts of multimedia teaching
At present, the traditional teaching form has been unable to meet the needs of modern students. People turn to multimedia teaching. Computers can act on students with various media information. Multimedia can be combined with traditional teaching methods. The combination of the two can play the best teaching quality. Projection, video and slide show are the external forms of multimedia. Multimedia can attract students' attention with vivid images.

3.4. Making of physical education courseware based on multimedia technology
The making of traditional physical education courseware is simple. Its content is also very crude. Many physical education courses are free time. This is the result of physical education teachers in response to the Ministry of education inspection. Teachers can place vivid cartoon characters in multimedia sports courseware. The feeling of watching sports courseware is similar to watching animation. Students with pure psychology will be attracted.

4. The main application of multimedia assisted badminton teaching

4.1. Combination of video and audio
The basis of video is the playing of images. Some of the images it will be able to play on the display repeatedly. It can control the characters in the display to complete the corresponding actions. Generally speaking, the video emphasizes the visual experience of students. Audio refers to the playback of sound. It emphasizes students' auditory experience more. The combination of video technology and audio technology can effectively express the details of badminton action.

4.2. Demonstration of badminton teaching action using 3D model
In the process of badminton training, many physical education teachers do not pay attention to the teaching of action. They think that batting is simple learning. In fact, the footwork of batting is very difficult to learn. The 3D model of human body can be made by using the 3D software of computer. The model can repeatedly demonstrate the badminton training steps and batting movements. The demonstration process is made into multimedia video. Students find inspiration by watching multimedia videos.

4.3. Production of badminton game based on Multimedia
A lot of social software has little programs. These little programs include many kinds of games. Teachers can use multimedia applications to record the process of badminton games [4]. Teachers can also organize students to play badminton games. In the process of playing the game, students can more easily understand the action of badminton. This way is conducive to students' physical education learning. Teachers can also use multimedia to produce more kinds of badminton games.

4.4. Main applications of virtual reality technology based on Multimedia
Virtual reality technology is a cutting-edge human-computer interaction technology. The basis of VR
game is the technical means of virtual reality. Schools can use multimedia technology to create some interactive network environment. In bad weather, students can use VR interactive technology to complete the badminton match indoors. In addition, this human-computer interaction technology can greatly improve the multimedia application standards.

5. Innovation of badminton teaching courseware based on multimedia

5.1. Dynamic theory
In fact, many students hate theory courses. They think that many words are lifeless. The concept of some physical education courses is also unattractive. Students tend to like dynamic theoretical knowledge. Teachers can give theoretical knowledge to some animation characters. If students can't understand the theoretical knowledge, they can find inspiration through the corresponding dynamic content (see Table 1).

Table 1. Innovation of badminton teaching courseware based on Multimedia.

| Badminton courseware       | Innovate            | Feature               |
|----------------------------|---------------------|-----------------------|
| Theoretical common sense   | Dynamic description | Easy to understand    |
| Color embellishment        | Complex colors      | Eye catching          |
| Computer equipment         | Software assistance | Action analysis       |
| Network platform           | Resource sharing    | Resource development  |

5.2. Badminton courseware needs more color embellishment
The essence of multimedia video playback is image movement. Multimedia also has the function of adding color [5]. When making badminton courseware, teachers can add a variety of colors in PPT. Students can be attracted to these colors. Teachers can use various colors to decorate some special theoretical content. These colors attract students' attention. They can make students pay more attention to the important and difficult knowledge.

5.3. The use of 3D software combined with courseware
Multimedia technology is an important part of computer technology. In the process of using multimedia technology, we can combine it with other computer software. Three dimensional software is commonly used in computer teaching. The application of physical education teaching is the main function of three-dimensional software. According to the above description, teachers can make different human models with three-dimensional software. Through the link of multimedia technology and teaching software, teachers can show the content of 3D software to students.

5.4. Sharing platform of badminton network teaching resources based on Multimedia
In fact, badminton network teaching resources are many. Schools can build a small network platform. The function of the platform can be set as the sharing of network teaching resources. Badminton teaching resources can be divided into them. There should be links to other resource platforms within the platform. Students can find the corresponding badminton teaching video through the platform after class. Students can effectively review the classroom knowledge after class.

6. Advantages of courseware making based on Multimedia Teaching

6.1. It prevents many teachers from being tired of making courseware
Many PE teachers don't like making badminton teaching courseware. They think the process of making courseware is complex. This situation is caused by many schools do not pay attention to the teaching of sports. Through multimedia technology, teachers can make badminton courseware more easily. This situation can effectively avoid many teachers tired of making courseware. It can also improve the richness of physical education teachers' work content.
6.2. It improves students' badminton learning quality
Many PE teachers think that badminton teaching is simple. This view is one-sided. Badminton theory is relatively simple. The pace of badminton and the action of batting are very complicated. Many students can only hit the ball. Their pace is messy [6]. Multimedia technology can show the details of badminton movements in front of students. Through the multimedia display, students can easily improve the quality of badminton learning.

7. Conclusion
Badminton is a popular sport in China. Students learn badminton can effectively improve their physical quality. The making of badminton teaching courseware with multimedia technology can effectively improve the learning quality of students. It can not only effectively promote badminton culture, it can also effectively improve the physical and mental health of modern students.

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