Application of Computer Multimedia Technology in Taekwondo Teaching

Jie Sun1,*

1School of Physical Education, China University of Geoscience, China

*Corresponding author e-mail: 2685562549@qq.com

Abstract. Under the background of the continuous reform of the education curriculum in our country, the traditional teaching mode has obviously been unable to meet the needs of the present teaching task. Taekwondo course has always been taught in the traditional teaching mode, but as more people join in the study of Taekwondo, the traditional teaching mode is obviously no longer suitable for the current form. With the continuous improvement of the popularity and level of the sport, the single teaching mode limits the teaching effect and scope to some extent. This paper aims to study and explore a new method and ideas to guide Taekwondo Teaching, in order to optimize the teaching content and improve the teaching efficiency. This paper analyzes the application of multimedia in Taekwondo Teaching from three aspects: video feedback teaching, CAI courseware assisted teaching and continuous picture decomposition technology action teaching.

Keywords: Taekwondo Teaching, Multimedia Technology, Video feedback, CAI Courseware

1. Introduction

Taekwondo as a kind of fighting sports, it can not only play the role of fitness and self-defense, but also has certain ornamental, which is its unique charm. When Taekwondo is included in the Olympic Games, Taekwondo has been rapidly promoted and popularized. Therefore, more and more people are interested in Taekwondo and begin to learn it. In the University, taekwondo course is generally taken as an elective course[1-2]. As a result, the school leaders don't pay too much attention to Taekwondo, so the capital investment is very limited. There is not enough capital investment, so some old infrastructure for Taekwondo Teaching can not be replaced, and the training ground of some colleges and universities is not fixed at all. As a result[3-4], the training efficiency of trainers is very low. Moreover, the traditional teaching mode is the coach as the center, the coach formulates the teaching course and trains the students, but many coaches lack of systematicness in the setting of Taekwondo learning course, the teaching content is not comprehensive, and the theoretical knowledge learning is not enough, which are the disadvantages of the traditional teaching mode. The ability of the coach is also limited. In most colleges and universities, the training time of the coach for the students is very limited. If there is no time to guarantee, then the teaching content is relatively shallow, and the teaching quality will not be very high[5-6]. College students are very dissatisfied with this teaching method, because they did not learn the ideal content, so the existing teaching mode can not meet the...
needs of college students.

In order to improve the training effect and scope of Taekwondo, it is necessary to find a new and more efficient teaching mode to assist Taekwondo Teaching. The application of multimedia technology in Taekwondo Teaching can make the teaching content vivid and visualized, make it more intuitive and efficient, and help students form clear action representation, which is of great significance for optimizing teaching content and improving teaching efficiency.

2. Multimedia technology and Taekwondo Teaching
Multimedia technology refers to the technology of integrating text, image, animation, video, audio and other forms of documents into a real-time and interactive systematic information expression technology through computer processing to make multimedia establish a logical connection. Multimedia technology has been successfully applied in many industries. The combination of multimedia technology and teaching can make learners feel the comprehensiveness and details of teaching intuitively. The techniques and movements of Taekwondo to be studied are systematically optimized through multimedia technology, and the details of each action are displayed to form an efficient learning efficiency. The application of multimedia audio technology to Taekwondo Teaching will have a great role in promoting. Through the image processing technology, the teaching details can be enlarged and displayed, so that students can intuitively see the key points of technical movements, which is of great help for students to overcome the difficult movements. The traditional teaching method can only learn high difficulty movements through their own understanding of technical movements, which will consume a lot of energy and take several days to master.

(1) Sparse representation of light is an important prior condition of multimedia technology.

\[ x = \Psi \theta \] (1)

\[ y = \Phi x \] (2)

According to formula (2) and equation (3), the relationship between observation vector and teaching efficiency coefficient can be expressed as

\[ y = \Phi x = \Phi \Psi \theta \] (3)

3. The necessity of using multimedia in Taekwondo Teaching
Nowadays, the biggest teaching feature of Taekwondo Teaching in Colleges and universities is that there are less theoretical hours and more practical courses. The theory is explained mainly through the teacher's oral narration of action concept and personal demonstration. The students carry out repeated imitations according to this. The teacher gives guidance and correction to the students' technical movements until the students master it. It is not difficult for those who have personal teaching experience to find that such a traditional teaching mode has many limitations.

(1) It is difficult for students to obtain a complete and profound image memory from the teacher's explanation and demonstration. The technical movements of Taekwondo are complex. For example, taking the basic leg technique of taekwondo as an example, the action process requires: bending the knee to send hip, while the sole of the supporting leg is rotated outward about 180 degrees, and the body is tilted, with the knee joint as the axis, the hip is turned quickly, and the cross stroke is performed with the knee joint as the axis to reach the instep. If the complete action is done at one time, it is difficult for students; if the teacher is required to demonstrate with scattered method or slow motion method, there is a lack of coherence and integrity, which will affect the demonstration effect.

(2) The factors of the field will also affect students’ learning new technical movements. Due to the lack of space and large number of students, students usually gather around the teacher in groups. Due to the limitation of observation angle, students can not form a complete representation, so they can not appreciate some technical essentials.

(3) The constraints of time and space will also affect students’ learning of technical actions. Due to the limited time in class, students are required to practice after class. However, due to the lack of
classroom training time, the new movements did not form the correct stereotype, and did not get the correct guidance from the coach in time after class. As a result, the learning quality and effect of new movements are affected.

In view of the shortcomings of the traditional teaching methods, it is necessary to use multimedia technology to assist Taekwondo Teaching, improve the quality of teaching, so that students can master the action essentials in the vivid, lively and intuitive environment. This is conducive to students' understanding of action essentials, mastering the key technical links, promoting the formation of motor skills, so as to improve the teaching effect. Moreover, the use of multimedia technology will be rich in video or CAI courseware to students, which helps students to understand the whole Taekwondo culture, easier to meet the basic requirements of Taekwondo Teaching.

With the development of science and technology, modern multimedia technology is constantly updated, and the corresponding multimedia carriers and equipment are emerging in endlessly. At present, the multimedia classrooms in universities are generally equipped with computers, projectors and other equipment, which provides hardware guarantee for the multimedia technology into Taekwondo classroom. On the other hand, the current network resources are quite rich, young people like to accept new things, single, boring teaching mode obviously can not stimulate their learning motivation. With the continuous development of various hardware and software, the continuous optimization of teaching conditions and the continuous popularization of audio-visual teaching, multimedia technology assisted Taekwondo Teaching has become an inevitable means of teaching.

4. The application of multimedia technology in Taekwondo Teaching
The biggest advantage of multimedia teaching is that it can provide students with intuitive materials. Through comprehensive multimedia technology such as images, pictures and sounds, it can bring students vivid, intuitive and deep impression. The original intention of using multimedia teaching is integrate various technical means to optimize the teaching process, and achieve the best teaching effect in the least time. In Taekwondo class, teachers can use the multimedia form to assist teaching according to different teaching contents.

CAI courseware is to present the relevant teaching objectives and contents according to a certain structure, especially the abstract concept, which can be easily understood and accepted by means of image. Taking CAI courseware as an auxiliary means of Taekwondo Teaching, that is, through the study of Multimedia CAI courseware, we can understand and master the correct Taekwondo action technology, master the basic knowledge and technical principle of Taekwondo, and take certain measures to correct the wrong movements, so as to cultivate the students' self-learning ability. Making full use of the computer's image, graphics, animation, audio and video functions, so that students can establish a correct technical concept and master the technology of Taekwondo, And theoretically grasp the tasks, action specifications, technical essentials, teaching methods and means of each stage, as well as the generation and correction methods of common wrong actions. Make students master the knowledge of Taekwondo systematically. Learners only need to click the mouse, can realize the system each part to switch freely, carries on the selective study.

Taekwondo multimedia course should give full play to the advantages of the computer, reflecting the interactivity and openness during the construction process, so as to improve the effectiveness of teaching. In the learning process of taekwondo course under the multimedia technology, after listening to the teacher's face-to-face teaching, college students can carry out independent reading through mobile terminals, or discuss with students on the computer network, and then carry out on-the-spot exploration through handheld terminal devices. In the face of this mixed learning mode, we should understand the individual needs of college students and help them formulate, carry out and complete their learning plans.
In order to get rid of this teaching dilemma, multimedia technology is a classroom teaching app that provides real-time interactive communication between teachers and students by using mobile terminals. It can quickly send, collect and sort out classroom teaching information through mobile Internet. It also has the functions of data push and sharing, location positioning, attendance and accurate identity recognition. It can be said that it is a mobile and timely teaching tool for Taekwondo class and class.

Multimedia technology is of great significance to optimize Taekwondo Teaching and improve teaching efficiency. Through logical analysis and experiment, it is proved that the purpose of improving teaching effect can be achieved. Video assisted teaching can effectively control students' action behavior, promote the formation of movement skills, and make up for the shortcomings of traditional teaching methods. In the process of Taekwondo Teaching, students are very interested in video feedback teaching, and they are very satisfied with the teaching. At the same time, they listen very seriously in the classroom. The experiment proves that this teaching method is feasible and worth promoting. The application of CAI Courseware in Taekwondo Teaching can deepen students' understanding of knowledge. It is helpful for students to master knowledge, skills and technology and cultivate their learning ability. It is helpful for students to establish the action representation and form...
the technical concept by using the continuous shooting pictures to decompose the movements to assist the teaching of Taekwondo basic techniques. Moreover, the equipment requirements are not high, the operation is simple, and the presentation is real-time. It can be widely used in Taekwondo Teaching.

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