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## On the Application of Multimedia in Aerobics Teaching Optimization

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**Abstract:** The new technology makes people to enter the era of global information dissemination and social education is also facing huge changes. In this changing technology, the use of computer and network technology as a core education plays a key role. Aerobics is one of the compulsory courses opened in the college sports teaching process. Its move has many changes and it has music dynamic. For students' temperament and physique has very important role, especially be favored for female student. Obviously, the traditional aerobics was unable to adapt to the needs of modern education reform. So many schools begin to use the advanced science and technology actively to supply and enrich the insufficiency of traditional teaching method. The use of multimedia network technology can play an effective self-learning ability of students in the learning process. It can help students to master and apply the continuous technology and knowledge. Students can continuous develop the skills and enhance the aesthetic education. This method can support student collaborative and autonomous inquiry learning. It also can stimulate students to aerobics teaching enthusiasm and interest; exert the student's own personality. This paper analyze the disadvantage of traditional aerobics teaching, expounds the concept and characteristic of multimedia and aerobics teaching. And the focus is the analysis of multimedia technology which has positive meaning to the aerobics teaching.

**Key words:** Multimedia, aerobics, teaching optimization

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### INTRODUCTION

With the continuous development of modern science and technology, people started to enter into a whole new period of technological development. New technology makes people began to enter the global dissemination of information age. Information technology can not only eliminate the real distance barriers but also can effectively participate in the social shaping process in the future. Social education is facing with a huge change. In this change the use of computer and network technology education as the core of the information technology, effective use modern information technology to help promoting the teaching reform and progress. And it offers a variety of teaching tools and educational environment for students to adapt to the practical requirements of the development for the times. The main carrier of information dissemination is the multimedia. Multimedia technology can effectively combine the image, graphics, sound, text with computer. The teaching course prepared by the computer system have scientific and superiority than other multimedia. In a very short period time, it can be used flexibility with the kinds of media, so that students can accept all auditory, visual and other aspects of sensory information. And its simulation technology makes the surrounding world and the macroscopic appearance vivid display in front of students. It can greatly enhance the students' interest in learning and

effectively mobilize students to learn enthusiasm and initiative. It also promotes the rapid transformation of the teaching methods and teaching ideas. The characteristics of multimedia, such as networking, interactive, intuitive and storage capacity, these characteristics can play great role in aerobics teaching. Students can proficiency in Aerobics professional knowledge and skills, constantly optimize the ability and effectively improve the quality of teaching (Asuquo *et al.*, 2012).

With the development of the education and teaching reform, many schools began to actively use the advanced science and technology to supply and enrich the lack of traditional teaching methods. The use of multimedia network technology can effectively play a self-learning ability of students in the learning process. Through the computer and students' interactive activities to achieve the objective of teaching, constantly improve the teaching form and content and improve the quality and level of the school physical education. Such teaching methods can quickly break through the traditional sports teaching mode in teaching philosophy, achieve modern teaching means and methods. Enhancing the quality of teaching has a very important significance. In recent years, the various institutions of higher learning in the country began to build their own multimedia classroom. The basic set of courses in the university are trying to use the multimedia teaching, multimedia teaching process exist scientific imbalance. In particular, sports teaching basic is

in a blank state. The aerobics professional multimedia courseware design as an important attempt in PE teaching reform, especially in aerobic exercise professional has begun spearheading a multimedia teaching. It is not only having a great innovation on the way, means and the form of sports teaching but also greatly enhancing the school teaching partition. It fully demonstrates the advantages of the traditional teaching with the incomparable application of multimedia technology in the aerobics teaching process. Aerobics is one of the compulsory courses opened in the college sports teaching process, its move has many changes and it has music dynamic. For students' temperament and physique has very important role, especially be favored for female student. The unity of teaching means and methods it is difficult to be given full play the initiative and enthusiasm of the students. In order to be able to change this situation quickly, researchers should actively combine the characteristics of college students try the multimedia teaching techniques into traditional teaching mode which optimize the classrooms, improve the quality of teaching.

The purpose of this study is to explore a scientific and effective teaching optimization strategy to promote the development of aerobics teaching and progress. The research content of this study is that the multimedia technology and aerobics have been carried on the related discussion and analysis. At the same time, it focuses on the application of multimedia in the teaching of aerobics optimization analysis.

### **THE CONCEPT AND CHARACTERISTICS OF AEROBICS TEACHING**

Aerobics means that teacher take plan to teach the aerobics skill, technology and knowledge to their students and the purpose is to improve students' body fitness. It is gradual process of education students' comprehensive ability and comprehensive quality. The main task is to help the students to master and apply knowledge and technology, continuous development of the skills of its own, improve students' physique, train student's correct attitude, enhance the aesthetic education to the students. Its characteristics are mainly embodied in the rich teaching content, the source of information is widespread, the strong variability of practice, cultivate the students' health in the process of practice, cultivate the students' health in the process of practice. It trains students to develop a correct attitude. In the process of teaching aerobics on the arrangement of sports load has very obvious body-building effect. Its creative thinking and practice activity are closely connected. Aerobics teaching also has high objective of aesthetic education (Dopico and Fernandez-Urquiza, 2012).

**Pertinence higher:** Teaching courseware in the light of the object is clear and definite. Teaching content always accord with the students' cognitive level, hobbies, physical characteristics and so on. When choose teaching content, the school should guarantee its rich and colorful, support students' cooperation, self-inquiry learning, motivate students to aerobics teaching enthusiasm and interest and bring the students' personality (Keast *et al.*, 2012).

**Creative stronger:** Aerobics courseware shown as Fig. 1 creativity reflected in the following aspects: first, the conception is more innovative. Clips can be configured through scientific teaching content. Construction of a can meet the cognitive level and the interest teaching resources and personalized learning environment. Second, the idea is unique. It can make the standard and innovation, the theory and practice of international and domestic aerobics teaching the new achievements in the development of fully integrated together to form a high performance, system of the aerobics teaching system. Third, design is more ingenious. It could effectively showing students learning aerobics expressive force and the artistic imagination through appropriate use of computer multimedia technology. Especially it can make the teacher and student created together aerobics application form ingrate into the teaching material. The distance between teaching and live, between teach and study are shorter. It will show a more vivid image of the students learning aerobics level and style, arousing the students' creativity and initiative (Wang *et al.*, 2012).

**Aesthetics stronger:** Aerobics teaching courseware has color coordination, composition reasonable, unified style and voice synchronization. It can relate teaching situation through detailed image of the aerobics teaching content more intuitive to show students. Use this to mobilize the various senses of students, to stimulate students' own aesthetic experience, allowing students to the aesthetic gradually into the search for knowledge, positive thinking and active learning process. Making the sound, color and shape into one thing through multimedia optimization. It can enrich PE course resource and it has the property of visual and image which will accord with the essence of PE teaching and make the PE teaching level went up a new high. The PE professional multimedia courseware production flow path is shown as Fig. 2.

**Strong science:** Aerobics multimedia gymnastics terminology of multimedia teaching courseware is precise and scientific. Both the system accurately the aerobics teaching theoretical knowledge but also the theoretical knowledge into action related to normative and orderly, to the organic combination. Its teaching strategy is more

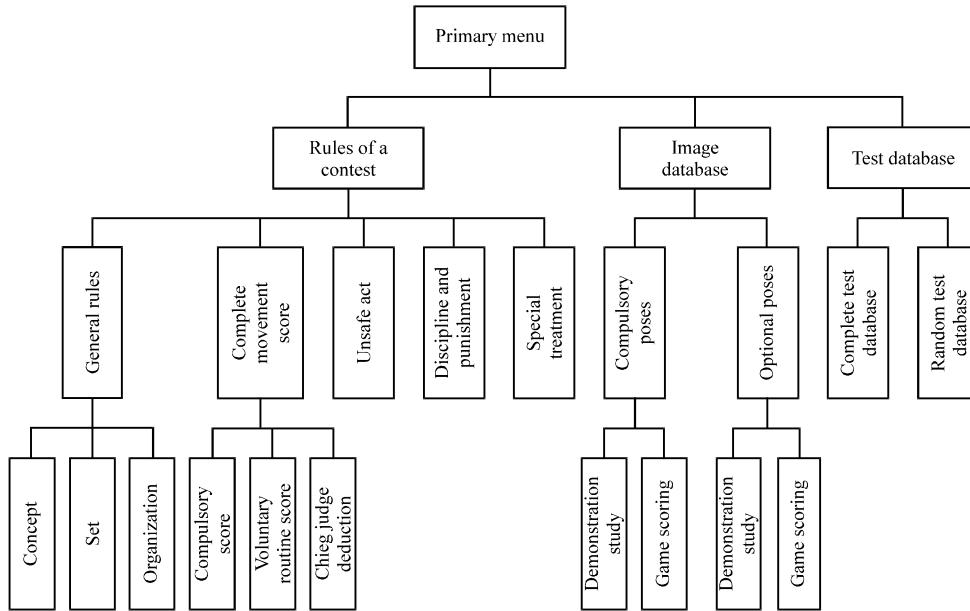


Fig. 1: Overall structure of the courseware design

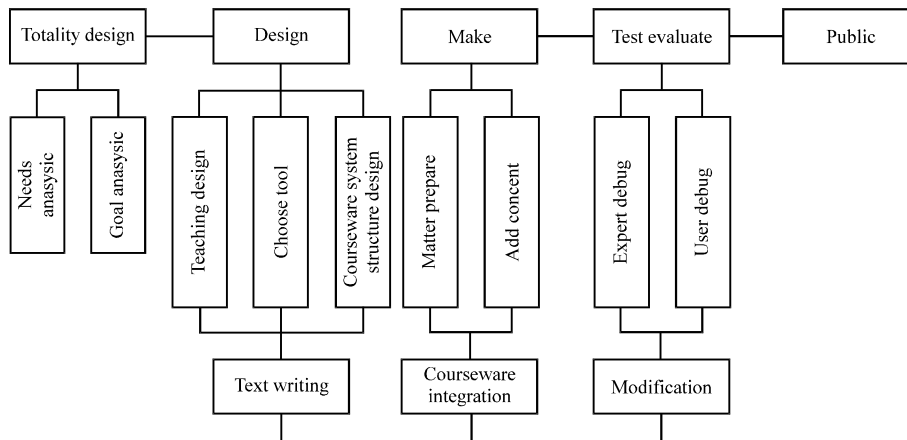


Fig. 2: Sports professional multimedia courseware production flow chart

reasonable, can step by step to the beat of the music, from the understanding of the basic hand pace of learning stage, prominence to the key points. This teaching method is consistent with the cognitive law of the students, with strong scientific.

**THE SHORTCOMINGS EXISTING IN THE TRADITIONAL AEROBICS TEACHING**

**Poor teaching environment:** Lower emphasis to the teaching of aerobics or limited by funding lead to less money in aerobics teaching and the teaching environment is poorer. According to the survey, many schools courses

are in outdoors and some are on the cement or land. The teaching aerobics on concrete land need to skip steps. If the ground is too hard, students’ knee and shank will be damaged. As to sand, a little movement will be dusty. At the same time, the practice of physical aspects in aerobics teaching has strict requirements of training equipment and training places.

**Inflexible teaching management:** At present, many schools are still using the traditional management system in aerobics teaching method, teachers use uniform standard to measure the students. For example: In order to complete the teaching task, some teachers pursued

courses schedule, ignored the students' difference and accept ability. They rapidly and mechanically explain action to cause students lose interest in learning. The teaching atmosphere is relatively heavy.

**Monotonous teaching methods:** In traditional teaching aerobics teaching, teachers are the subjects of course. The boring lecture behavioral essentials make students passively imitate teachers' action. Although, there are many body movements of school student in classroom but the brain activity is very few and the teaching content is for only a few fixed set of actions. Teachers meticulous and tedious explain the movement. The theory is more and practice is less. In the long term, students will not be able to feel physically active and other characteristics of aerobics course. It reduces the enthusiasm of students learning. Some teacher use the method of “Ribbon gymnastics” which is not adopted to improve the teaching of teachers and is not conducive to teachers found errors on the student movement in time and correct those errors.

**Simple test methods:** Many aerobics instructors make performance evaluation as the purpose of the teaching and make the students in the completion of several sets of aerobics movement situation as assessment indicators. This is not only unable to reflect the students' comprehensive quality, body and thinking character and extremely easy to reduce the aerobics learning motivation. Some students with higher sports ability may ignore their moral accomplishment and will exercise. Some students with weaker sports ability is bit hard for their action not standard, or not inconsistent.

**THE CONCEPT AND CHARACTERISTICS OF MULTIMEDIA TECHNOLOGY**

The traditional aerobics teaching is affected by many aspects which courses the undesirable effect of teaching quality reduction. The so called multimedia technology can take full advantage of computer technology to process the multimedia information. We can use the multimedia information to establish a logical relationship with video, animation, images, graphics, sound and text. It can combine them together to form a new system technology which has some interactive ability. It main stress certain a kind of human-computer interaction technology, information processing technology and computer processing technology of multimedia technology room. It integrated technology for a variety of applications, its main features real time, nonlinear, interactive, controllability, integration, dynamic nature of the information structure and information easy to use and so on. In the classroom centered instructional design process model is shown as Fig. 3.

**Design of the multimedia courseware:** Using the multimedia design software Authorware completed, it has the friendly interface and reasonable structure. It uses nonlinear link design technology for page design, set retrieval system and GPS. It can provide functional module to help students studying, effectively play the interactive function of school education platform. Its learning schedule can be controlled, the way to study can be choose, operation quick and easy. It not only be used for single instruction but also can be used for teaching in network teaching environment. Authorware has huge

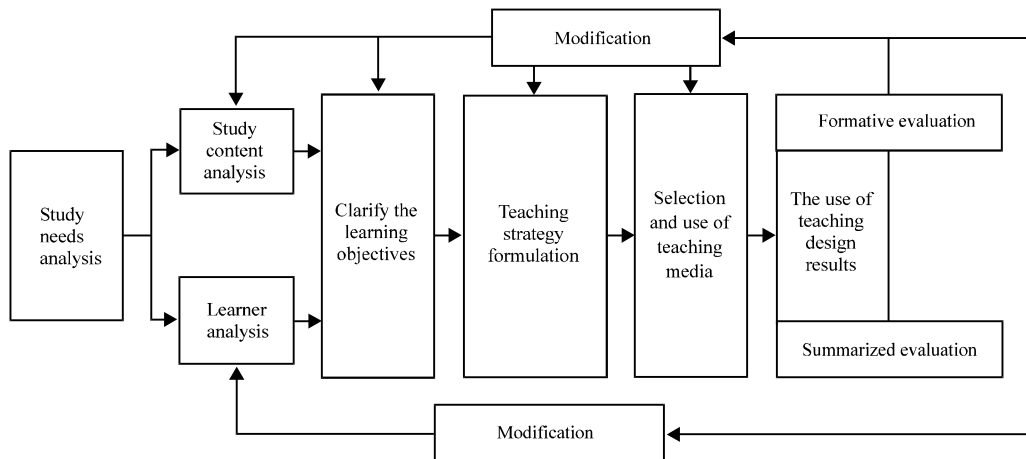


Fig. 3: In the classroom centered instructional design process model diagram

openness. When teacher use this software, they can accord themselves and students' desire to complement and revise this design software to make them fully meet the needs of teaching. The basic mode of multimedia teaching is shown as Fig. 4.

**Overall characteristics and structure of teaching content and teaching design:** Courseware make optimization students themselves study process and optimization teachers teaching process as the main goal. It can fully play the role of media, student and teacher. Teaching design is mainly based on modern teaching theory, system science method and sense and based on the teaching guiding ideology of health firstly. To integrate the different needs of the students of the aerobics teaching content can with large capacity of aerobics teaching theory as well as the difficulty of knowledge system, peculiar style with the latest aerobics technical action support student learning. At the same time of following the regular pattern of aerobics teaching, teaching content is divided key and difficult teaching, ordinary teaching content teaching. And these techniques and theory of the organic combination of a both system and has its own independent structure. This ensemble is mainly composed of extended knowledge required by the syllabus and content. Its whole content structure is shown as Fig. 5.

**SPECIFIC IMPLEMENTATION METHOD THE DEVELOPMENT OF MULTIMEDIA TECHNOLOGY IN AEROBICS TEACHING**

**First phase:** It is the student basic courses for the teaching, mainly for the student body posture training. It generally consists of two main parts, one is the aerobics posture training basic actions, second is the aerobics difficulty movement and exercise movements of the body attitude. In the teaching process, teachers can apply the multimedia teaching method as the main body, to guide the students to follow the rhythm of music in multimedia courseware and demonstration teacher demonstration action to learn. The main duty of teacher is observing students' the attitude and action. It can be timely discovery and the correction of students' attitude in the course of practice, Oral notices of the body attitude in training, in case of necessity requires demonstration personally. Only in this way lay a solid foundation for students learning aerobics. Students themselves knowledge structure is shown as Fig. 6.

**Second stage:** The second stage is the Intermediate course teaching stage. In this stage, student needs mainly to the physical exercise. It in aerobic exercise as the basis, in response to the rapid, quick thinking and body coordination should be a basic course is very different.

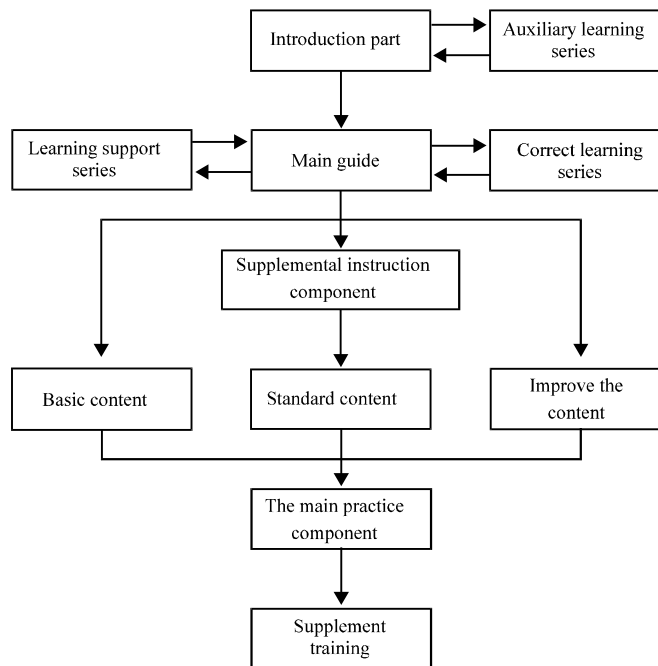


Fig. 4: Multimedia teaching basic mode

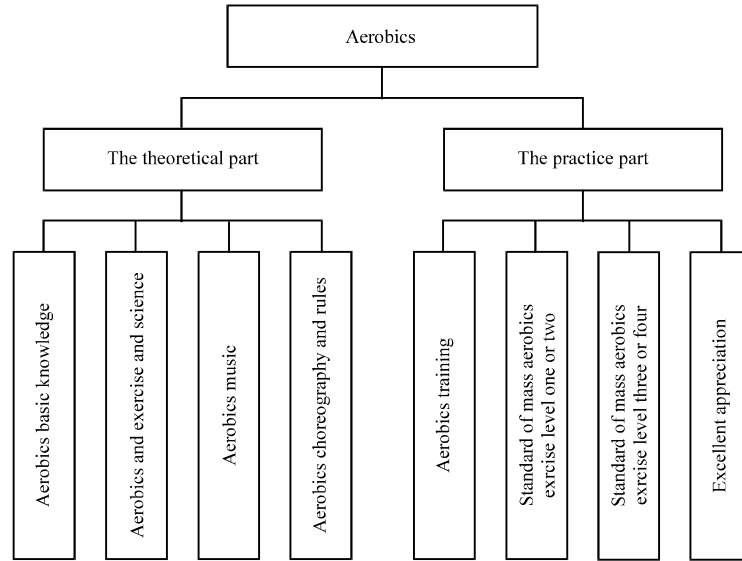


Fig. 5: Content structure of aerobics multimedia teaching courseware

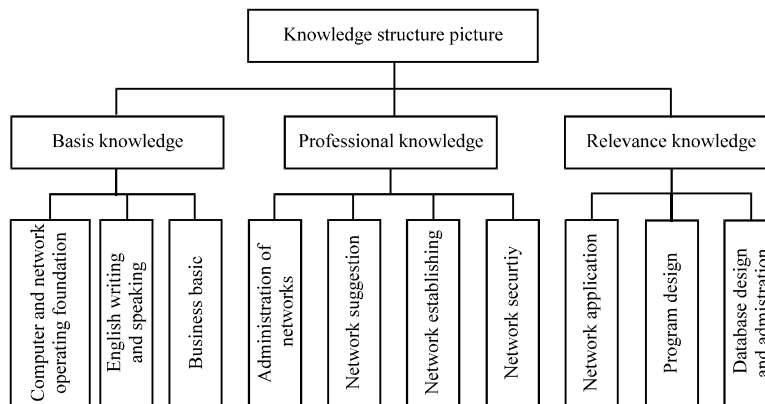


Fig. 6: Knowledge structure diagram

Teacher’s teaching method should make the corresponding adjustment. Fully consider the difficulty and complexity of the student movement. Students in learning aerobics simply look at the multimedia courseware presentation are far from enough. And teachers should each action decomposition model and guidance the training of the students. Synchronous exercises and students, in the difficult actions repeatedly broadcast video, carefully explain each stance essential. Students can understand at the same time learning. It not only can reduce the burden of teachers' teaching but also make students more easily understand. Teachers can also put students into groups, so that students can face to exercise, can improve the students' interest in learning but also can reduce the burden of teaching (Andrews, 2012).

**Third stage:** The third stage is the free play curriculum and advanced curriculum teaching stage. After the students mastering the intermediate course, if students want to get further improvement, it will make the multimedia technology has more broad space for development. Students can watch the elite Aerobics athletes to show through the multimedia video, the students make in the wonderful the performance gain some tips and insights. The teacher can group students and arrange students rehearsing calisthenics, also can a complete set of aerobics belongs themselves. It can deepen students’ understanding for aerobic, fully play students’ creativity and imagination, so that the students can love the sport from their heart deeply.

**SPECIFIC ROLE ANALYSIS OF MULTIMEDIA TECHNOLOGY IN THE AEROBICS TEACHING APPLICATION**

Using the multimedia courseware for aerobics teaching can get development of selectivity, systematic and intuitionism. The knowledge and information of student learning get more and the content is rich. It doesn't affected by teachers and the times. It is easy to learn to specific teaching content image vividly demonstrated to the students, make students have a deep understand for study steps, methods and content. To form their own athletic skills to provide good conditions for students to accurately understand and grasp the technical essentials makes students in a proactive learning state. It is helpful teachers and students in the teaching and learning process, timely information feedback and give full play the main role of learning in the learning process.

**Multimedia technology helps to promote changes in external form of aerobics teaching students to change the way content selection method:** Multimedia has a huge advantage that the form of information is diversity. It not only is a relatively simple teaching aid but also contains important features in the process of teaching content changes. It can aim at different needs, through different teaching form. From multiple angle, different sides, all-round, multi-form, multi-standard, multi-level, multi-angle, multi-information to dynamic expression of scientific truth, to reveal the mysteries of nature and fully demonstrated the great charm of the teaching aerobics, survey learned the students for Aerobics preference as shown in Table 1. In the process of aerobics teaching, teacher and student with the course content will appear synchronous or asynchronous. To enhance the convenience space of the teachers and students access to learning resources and knowledge, breakthrough teacher for the monopoly of knowledge, make the students' personality to get more really. The traditional theory will be displaced by constructivism concept to be becoming the main concept of school course development and teaching activities. Degree of be fond of aerobics is shown as Table 1.

**To improve traditional teaching method, help student build the known of science idea:** Aerobics stream will

Table 1: Degree of be fond of aerobics

Degree	Like very much	Like	Ordinary
Test students' No.	88	58.00	14.00
Ratio (%)	55	36.25	8.75
Teachers' No.	42	34.00	5.00
Ratio (%)	52	42.00	6.00

generally difficult and complex movements, forms and content-rich. In aerobics specializing in the teaching process, teacher should use different teaching method to guide student for learning and fostering students' interest in sports. In country traditional aerobics teaching is the musical accompaniment conditions, teachers through the action of demonstration and explanation of the completion of the teaching task, so as to enable students to establish learning aerobics movement concept. Its defect is that it is difficult meet student learning needs. Use multimedia for teaching can break this traditional teaching mode, prepare part, basic part and finish part can replace traditional explanation and demonstration, the students imitate, group exercises, error correction teaching form. It can enhance the learning enthusiasm and initiative of students in the aerobics teaching classroom. More single means of teaching inevitably will make teaching and learning in a passive state, it is difficult to achieve the expected effect of teaching students. In the learning process, students can easily become bored. It is not conducive to student learning enthusiasm and initiative (Burbank and Diaz, 2012).

**To expand students' knowledge can improve college student personality development and comprehensive ability:** Using multimedia teaching mode can improve the defect of the traditional PE teaching mode. Student is no longer facing with single teaching of traditional teaching but through the modern software material. In the rapid development period, it can by means of a variety of network level with different levels. Different ages and different sex of Aerobics exchange to improve the students' theoretical level, enrich students' known about aerobics knowledge, enhance students own study ability. At the same time, student can watch aerobics events related video material to fully experience the beauty of different music in different styles, fully realize today's domestic and foreign about some of the latest development trend of aerobics. It can improve multimedia learning skill level, improve aerobics aesthetic force and percipient and enhance the development of its own personality and expressive. The significance of colleges and universities open aerobics class is shown as Table 2 (McRae, 2012).

**It is helpful to resolve the key and difficult in the aerobics teaching process:** Aerobics is the sport

Table 2: Significance of colleges and universities open aerobics class

Understanding degree	Make good sense	Ordinary	Little
Test students' No.	89.00	57.00	14.00
Ratio (%)	55.63	36.63	8.75
Teachers' No.	45.00	32.00	4.00
Ratio (%)	55.56	39.50	4.94



**Table 3: Aerobics to master a lifelong fitness methods of necessity**

Understanding degree	Make good sense	Ordinary	Little
Test students' No.	120.0	32.0	5.0
Ratio (%)	75.0	22.5	5.0
Teachers' No.	50.0	30.0	1.0
Ratio (%)	61.7	37.0	1.3

combined with art and is the important manifestations of power and beauty. Aerobics can be roughly divided into the competitive aerobics and mass aerobics two main forms, its action requirements for different level students to speak, their standards are different. For professional sports institutions, in addition to the music, special basic skills and qualities as well as scheduling and other factors which aerobics moves for modeling as well as the difficulty of action will result in more stringent requirements which PE teacher themselves must possess excellent professional and technical level and they must have the ability to make a personal demonstration in the process of teaching. Because of the teachers are often subject to physical fitness, weight and age and other factors, they complete with some difficulty action will inevitably limitations. In the process of teaching, teachers' teaching using oral for a larger proportion, the demonstrations are relatively less. These for more technical, more difficult movements are often difficult to complete in the process of teaching, teachers' knowledge about oral and demonstration of the effect is not good enough to seriously affect, its exemplary role in the teaching process. It easily allows students to build action representation more vague and often only sense for the technical points involved in the teaching process of teachers cannot explain in words. While the use of multimedia technology will be able to effectively address these deficiencies, the students in the classroom for action can playback viewing to find their own exercise shortcomings in a timely manner, so as to improve and consolidate the quality of the action. The aerobics to master a lifelong fitness method of necessity is shown as Table 3 (Sparavigna, 2012).

**CONCLUSION**

The Aerobics exercises need practitioner music and body movements hand in glove. More Action changes and fast paced bring Aerobics teaching some difficulties.

In order to improve the effect of teaching, school must proceed from the characteristics of Aerobics Teaching. We should use the advantages of the multimedia technology positively and combine with the traditional form from each teaching aspect, so that the students can truly love this sport. According to the teachers' teaching experience as well as the characteristics of multimedia technology, combined with aerobics the degree of difficulty of curriculum, on the student's learning phase of the teaching contents and teaching plan to make reasonable arrangement.

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