The Application of Multimedia and Human Body Digital Modeling Algorithm Technology in College Physical Guiding

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Abstract:Using interviews and digital modeling of the human body to investigate the digital application of professional physical education in colleges and universities in Heilongjiang Province, analyze and explore the current problems in the digital application of physical education in colleges and universities. On this basis, it is proposed to strengthen the construction and improvement of the digital teaching system of college physical education, computer multimedia technology, multimedia courseware library, and address the problems of incomplete or incomplete facilities, inadequate development of operating platforms, and generally low teacher application capabilities. Strategic suggestions for optimizing the teaching of physical education courses in colleges and universities under the multimedia technology environment, and the efficiency increased by 7.28%.

Keywords: Multimedia, Human Body, Digital Modeling, College Physical Education

1. INTRODUCTION

The human body used in the clothing industry needs to add different amounts of relaxation to different parts, and some parts of the human body can be simplified, so it is different from the simulated human body model. Therefore, clothing mannequin modeling is a complex problem of geometric modeling, parametric design and motion simulation of complex shapes. To make the product design and manufacturing process can be well connected, to provide the necessary geometric information and other related information for the follow-up, geometric modeling technology is a good solution. [1-5]for physical teaching activities. Information technology is a machine and tool that extends the human body and sensory abilities. It not only helps students master knowledge, technology [6], and skills, but also regulates students' learning motivation and interest.

Due to the increase and expansion of the speed of information dissemination and the scope [7] of dissemination, modern information technology has caused major changes in our way of thinking and intellectual activities. The traditional teacher functions, teaching models [8], teaching methods, teaching methods, and student learning will also undergo fundamental changes, and the conservative teaching model will be completely broken [9]. As a modern educational technology and a new type of teaching media, information technology provides a material foundation for teaching reform, innovation and development [10], and opens up a broad space for teaching experience and diversification of teaching methods. In the face of opportunities and challenges, how do we apply modern information technology to college physical education [11], build an information-based teaching and learning environment and new learning models, achieve new and higher teaching goals, and further deepen the reform of college physical [12] education Has a very important meaning. Digital sports uses information technology as a means, through the integration [13] of traditional sports disciplines and other disciplines, so that a series of sports activities and behaviors such as physical [14] education, sports competitions, sports training, physical research, etc. become standardized, networked, and intelligent [15]. It is an emerging discipline based on computer technology, network technology, multimedia technology, and people-oriented [16].

Geometric modeling technology is a high-tech technology that establishes the data representation of real-world objects in the computer by means of human-computer interaction, and provides effective methods to operate them. Commonly used geometric modeling methods include wireframe modeling, surface modeling, also known as surface modeling, voxel modeling, and feature-based parametric modeling, but these methods have their own limitations and advantages. The main parameters to be considered when modeling radiation physicists are the density, location and shape of the organs and the shape of the body. In addition, the calculation of the absorbed dose of electromagnetic radiation also relies on the accurate representation of the interface between tissues and organs [21] appearance, and shorten the movement. The generalization process helps students quickly grasp the learning content and improve the teaching effect. Wushu is a precious cultural [22] heritage that has been gradually accumulated and developed by the Chinese nation in the course of long-term life and struggle practice. It is a unique national traditional sports [23] event in China. As a component of the school physical education curriculum in my country, Wushu is taught in college physical education. Occupies an important position [24] in China.

The martial arts course is a physical practice course that integrates fitness, self-defense, and self-cultivation, with martial arts knowledge, martial arts skills and national sports culture as the main content. For a long time, martial arts teaching in colleges and universities have mostly adopted traditional teaching methods. Due to the large content of martial arts classes, especially the interface with a relatively large difference in dielectric constant between the two sides (such as skin and adipose tissue). There are two types of electromagnetic radiation: one is ionizing radiation; the other is non-ionizing radiation.

2. THE PROPOSED METHODOLOGY

2.1 The Multimedia Technology Review

The human body absorbs electromagnetic radiation of different frequencies in different ways, so researchers will use different methods to simulate the energy absorption of the human body under these two radiation conditions. A model of spatiotemporal changes, features, and motion states [9]. Human body information refers to the knowledge about the properties, characteristics and state representation of matter and energy of various elements of the human body, including material information and energy information, and data is the carrier of information. , Data is unprocessed numbers, words, sounds, images, etc., while information is data that is arranged and processed in a meaningful form. Build a digital human body information model to study the information mechanism of the human body system, and discuss the structure, nature, acquisition and processing of the human body system information from the perspective of information flow.

The teaching application of multimedia technology has realized the rational integration of traditional media and modern media, and has been comprehensively applied to the teaching of physical education courses, which has fundamentally innovated traditional teaching methods. Slideshows, projection, audio, video, VCD, audio, computer-aided instruction (CAI) courseware, etc. make students' learning in a colorful, musical ups and downs, vivid animation, human-computer dialogue, intuitive image, real-time information, appreciation and learning. In the learning environment, the initiative of learning is stimulated from the teaching methods and methods. It is conducive to the cultivation of students' creative ability and the full exploration of their learning potential. It is conducive to the standardization and systematization of technical learning, and is conducive to the overall implementation of the curriculum goals. The mechanism formed by the material flow, energy flow and information flow of the human body system is studied to construct a digital human body information model. Generally speaking, the basic theories that generate the material flow and energy flow of the human body system are difference, non-equilibrium theory, dissipative structure theory, and gravitational field theory,

The main feature of multimedia technology is: resource integration. Resource integration refers to the comprehensive processing of multiple information resources.

2.2 The Human Body Digital Modeling Algorithm

By constructing a digital human body information model, the mechanism, generation, acquisition, processing and dissemination of human body system information can be studied. Including: digital human cognitive model, information map model, holographic information model, memory information model, etc. The application of digital sports in practical teaching projects reaches 60%, including not only indoor projects such as aerobics, sports dance, and martial arts, but also Track and field, basketball, volleyball and other events. However, the application rate of digital sports in sports majors in comprehensive universities is less than 25%, mainly in aerobics, sports dance, and martial arts indoor projects. It is rare to apply to other practical teaching projects.

The differences from the above physical humans are: first, the mechanical physical human is based on the modeling of the mechanical properties of human skeleton and muscle tissue; secondly, the mechanical physical human is composed of a limited number of small units They are connected by nodes, and the interaction force is transmitted through the nodes.

2.3 The Application of Multimedia Technology in College Physical Education

The realization of martial arts online teaching and distance education in colleges and universities has changed the concept and scope of "classroom teaching" in traditional martial arts education, greatly improved the scope and timeliness of information dissemination of martial arts education, and enabled students to truly break the obvious campus boundaries. Receive guidance and help from different schools, different regions, and different teachers, and you can get more colorful martial arts teaching information and resources besides books. We can combine modern multimedia technology to establish a special martial arts network teaching center, martial arts distance education special zone, martial arts network exchange forum and other service platforms in the college network teaching system, so that all students can enjoy online synchronous learning and martial arts information of the same quality .

The curriculum objectives of the school physical education subject itself are not very standard, and there is no complete national unified standardization and evaluation system. The existing evaluation indicators can be quantified and the operability is poor. Disciplinary construction management departments, policy and regulation institutions, and the guiding mechanism and atmosphere of implementing colleges and universities should pay attention to the standardization of curriculum objectives.

3. CONCLUSIONS

Modern multimedia technology has actively and effectively improved the teaching environment of college physical education, optimized the teaching structure of college physical education, and improved the quality and effect of college physical education with its comprehensive application effects of science, information, and modernization. We should not only attach importance to the traditional teaching methods and methods of physical education with a positive and objective attitude, but also establish the concept of modern multimedia technology teaching with a scientific development perspective. Through the proficient and reasonable use of modern multimedia technology, we must integrate it with traditional physical education. The methods are perfectly and organically combined to make up for each other and make good use of each other

4. ACKNOWLEDGEMENT

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