

# Analysis of Effective Application of Multimedia Technology in College Physics Teaching

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**Abstract:** with the advancement of society and the improvement of the economic level, the country's demand for physical science talents has increased dramatically. As a result, the education sector has begun to attach importance to natural science. Fundamentally speaking, physics is to carry out teaching through continuous experiments, so as to obtain research results and help related careers. However, according to the current situation, although major universities have achieved great achievements in physics teaching, but in the teaching process there are still some problems affecting teaching quality that need to be resolved urgently. Based on this, the effective use of multimedia technology in college physics teaching is of great significance in cultivating students' creative ability and application ability.

## 1. Introduction

The times are constantly developing and progressing, and people's development concepts and management methods in the education field have undergone major changes. In the process of college physics teaching, the effective use of multimedia development technology can create a good academic atmosphere and potential learning ability for students. Deep digging is conducive to fundamentally improving the quality of classroom teaching and achieving more results with less effort.

## 2. The Significance Analysis of Applying Multimedia Technology in College Physics Teaching

The effective use of multimedia technology in the course of college physics teaching is to meet the needs of the development of the times and social progress. Its core idea is to effectively integrate multimedia development technology based on the traditional teaching model, invest a lot of digital teaching resources, and encourage students to think more Learning, linking and combining the theoretical knowledge in the text with actual life, displaying dynamic images through multimedia, helping students observe and analyze, and optimize classroom learning results. In college physics classroom learning, teachers can use multimedia technology to enhance students' enthusiasm and enthusiasm for learning, to help them actively think and explore problems, and to formulate scientific and reasonable teaching plans and formulate teaching goals based on the actual situation of students [1]. Because the traditional teaching concepts and methods are relatively single, teachers mainly stand on the podium and instill the main points of knowledge to students. It is difficult for students to experience the concepts and theories intuitively, and it is difficult for them to resonate with the students and cause them it is difficult to effectively improve your academic performance, and the space for improvement is limited. Through the use of multimedia technology, the traditional teaching bottleneck is effectively broken, new methods are found, and students' cognition of physics is strengthened. The application of multimedia pays more attention to the analysis of the teaching system and structure, helping students to establish innovative consciousness, take the initiative to think and complete teaching tasks.

### **3. The Main Problems in the Current High School Physics Teaching**

#### **3.1 Single Teaching Method, Students Lack Interest in Learning**

In teaching, teachers should adopt vivid and interesting teaching methods to improve students' autonomous learning consciousness and stimulate students' learning motivation, especially for more boring physics courses. The physics course is an important subject for high school students. Therefore, the physics teacher must mobilize the students' enthusiasm for learning physics, and let the students overcome the awe of physics from the heart, so as to increase the students' interest in learning. Physics is a subject with a high degree of abstraction, complexity and tediousness. Physics teachers should use flexible and flexible forms for teaching courses in class, so that students' curiosity can be fully mobilized and personally participate in the practice of the classroom. If the teacher fails to raise the students' interest in learning, it will not only affect the student's academic performance, but also reduce the quality of the teacher's teaching, resulting in difficulties and difficulties in the advancement and development of high school physics teaching.

#### **3.2 Lack of Effective Experimental Activities in Teaching, Students Lack of Sense of Exploration**

One of the important links in the physics teaching process is experimental teaching. Through experiments, students can effectively improve their ability to operate and explore imagination. However, at this stage, many teachers are still teaching around the test-oriented education model in the teaching process. In the classroom, most of them will teach students various theoretical knowledge and examination focuses, and ignore the importance of experiments. Many experiments are only in the form, even for the many experimental links are passed by, that is, to allow students to watch some online experimental videos or pictures, and rarely give students sufficient time for experimental operations. Adhering to this teaching mode for a long time will not only greatly reduce students' enthusiasm for experimental exploration. And enthusiasm will also affect the correct cognition of students, leading to many students' questions not being effectively verified, which will adversely affect the comprehensiveness and scientificity of physics teaching, and is not conducive to the completion of experimental teaching goals and the improvement of teaching quality.

### **4. Effective Application of Multimedia Technology in College Physics Teaching**

#### **4.1 Create Effective Situations and Realize Interactive Teaching**

In modern teaching, multimedia technology teaching is more and more favored by teachers, which not only can make the teaching method flexible and changeable, but also effectively realize the contextual interactive teaching. The students can not only participate in the teaching of the teacher while learning the physics course, but also activate the students' independent thinking ability, so that the students will become interested in the study of physics in the context of teaching. For example, taking the teaching content of the "quantum mechanics" unit as an example, teachers can use multimedia teaching to first prepare teaching courseware. When playing the courseware content, they can use the method of broadcasting while inquiring to allow students to fully participate. During the inquiry process, the teacher must be much democratized. Thinking from the standpoint of students can allow students to think about problems in group discussions. Students can also collect information through the Internet to complete problem thinking. Allow students to speak on new ideas and views in this section by learning about quantum mechanics. Through the above teaching methods, not only the students' independent thinking ability is developed, but also the traditional teaching method is broken. If the teaching quality has not been improved, teachers can use the multimedia image to explain the key and difficult points in this section vividly, which not only enhances the students' knowledge, but also highlights the characteristics of the teaching mode. Teachers teach in the form of pictures and texts, which enhances the interaction between teachers and students and improves students' understanding of the situational teaching mode.

Although this teaching method may not be successful, it is much better than a single rigid teaching.

#### **4.2 Making Teaching Multimedia Courseware**

Multimedia teaching technology is a widely used teaching technique in modern teaching. Want to give full play to the function of multimedia. Among them, the content of making courseware is very important. High-level multimedia courseware not only makes students easy to learn the course content, but also can focus students' attention in the classroom and become interested in learning new content. In addition, teachers must fully understand the basic situation of students when making multimedia courseware. In order to better serve students in learning new courses, teachers must continuously reflect on and improve their teaching methods, and let students learn about their own courses. Generate interest, think proactively, and ultimately improve your own teaching quality and effectiveness.

#### **4.3 Set Up New Media Teaching Links Based on the Content to Be Taught**

As we all know, most of the material knowledge of colleges and universities has the characteristics of abstractness and complexity, and new media teaching can be used in teaching. Among them, the content of teaching is very important. Designing the courseware of each chapter according to the teaching content can not only make the abstract complicated. The text can be converted into simple and intuitive pictures or videos, which can also effectively develop students' logical thinking. Therefore, using new media teaching to present teaching content is a good teaching mode, but not all content is suitable for new media teaching. Only by rationally designing the content can it have the proper effect. In addition, the new media course design must also pay attention to the students' thinking characteristics and basic conditions, so that the content of the produced courseware has a vivid and vivid effect, in order to improve students' interest and enthusiasm for learning physics.

#### **4.4 Networking the Teaching Process**

In modern society, with the development of social economy, people's lives have been greatly changed. Among them, computer networks have been unknowingly integrated into all aspects of us, and school teaching is no exception. In the physical teaching of colleges and universities, network-based new media teaching has become the normalized teaching. Therefore, college physical teachers can not only use new media to produce courseware, but also access relevant information related to teaching through the network in order to improve and improve. The teaching mode of teachers improves the learning quality of students.

In the teaching process of college physics courses, the effective use of multimedia development technology can realize the development of open Internet courses. Students can preview and review physics knowledge by logging in to the website. Teachers can also use the network to provide guidance and preparation for students. And browse the author's situation of students, make a comprehensive evaluation [3]. Effectively infiltrating the concept of multimedia development in the teaching of physics courses in colleges and universities can help students improve their comprehensive learning and practical ability. The concept of multimedia network development is a new innovation to traditional teaching and promotes the physics teaching activities towards a comprehensive and comprehensive the diversified development model is launched to enrich and enhance teaching and education methods. We use the content of open physics courses in colleges and universities on the Internet as the standard and reference for courseware. Students use multimedia learning knowledge as if they are truly immersive and understand the needs of reality. At the same time, they can understand any first-class in the world through network technology. University teaching courses and management models swim in the ocean of knowledge. Undergraduate public physics courses in the network environment, the subtitle translation has the characteristics of accuracy and professionalism, students can distance learning the content they want to know, if you do not understand one of the links, you can also repeat it with emphasis. You can listen to and study, and conduct academic discussions on the forum to ensure the learning effect. Therefore, the new media's mode of college physics education also affects the trend of its teaching

network, which enriches students' physics learning resources and promotes the use of multiple methods in physics teaching.

#### **4.5 Improve Hardware Equipment and Increase the Construction of Master-Funded Teams**

Since the end of the Cultural Revolution, the scale of college admissions has increased year by year. Especially in recent years, almost all colleges and universities have implemented enrollment expansion, which has led to a rapid increase in the number of students. This has affected the experimental teaching work to some extent, such as it is said that the experimental equipment allocation is unreasonable due to too many people, the number of teachers is seriously insufficient, etc. Due to various restrictions, the existing experimental teaching only stays at the basic level. I want to solve this problem and effectively improve physical experiments. In terms of teaching quality, colleges and universities need to start from the inside, increase capital investment in physics experiment majors, and take the training of physical science and technology talents as the main goal, continuously improve their teaching staff, increase the construction of teachers, and need to hire professional knowledge and comprehensive Teachers with both qualities can complete the personality education for students while imparting their professional knowledge. In addition, they must also ensure that they can meet the needs of students for experimental equipment, purchase sufficient hardware equipment, and regularly update equipment to ensure students' Hardware requirements to provide students with better quality Learning environment, improve the quality of teaching fundamental physics.

#### **4.6 Dynamic Simulation of Teaching Mode**

In the multimedia teaching development system, dynamic simulation teaching is the main support for the development of its theoretical teaching system. Through dynamic simulation, massive information can be converted into reliable data and theoretical support. At the same time, this technology is used to establish corresponding digital development models. In the process of imparting physics knowledge to college students, the dynamic model is presented to the students vividly, effectively improving the flexibility and comprehensiveness of college physics teaching [6]. Through the effective use of winter simulation knowledge, it is compiled into binary code, and the words are stored in the computer to achieve unified planning and management, which is convenient for consulting the corresponding data. Through the effective application of teaching simulation technology, the teaching content is more intuitive, simple, data is more accurate and reliable, and a unified management standard is formed. [7].

### **5. Conclusion**

To sum up, by analyzing the development system of college physics education at this stage, it is not difficult to find that the traditional management mode of education and teaching can no longer meet the needs of contemporary social and economic development. The information age needs to continuously strengthen the effective use of multimedia technology. By analyzing the shortcomings of the traditional education model, in the teaching process and course production process, the multimedia development technology is reasonably integrated to make the boring classrooms vivid and interesting, thereby stimulating the enthusiasm and enthusiasm of students and improving the efficiency of classroom learning. At the same time, teachers are also required to continuously improve their teaching ability by using multimedia to develop technology, to realize a reasonable combination of new technology and traditional teaching, and to help students carry out experiments and scientific research.

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