

University Mathematics Teaching Reform Based on Multimedia Technology

He Xiao

Shaanxi Technical College of Finance and Economics, Xianyang 712000 China

Keywords: multimedia technology; university mathematics; teaching reform

Abstract: The development of information technology affects people's lives and work to some extent. The advanced functions of technology itself gradually replace the previous teaching mode. In the university mathematics teaching, multimedia technology is widely used. Among them, due to too much dependence on multimedia technology, college mathematics teaching lacks emotional communication. Many university mathematics teachers pay insufficient attention to multimedia teaching, and there are a series of problems. Such as the courseware framework is solid, the content is boring. Therefore, it is necessary to reform the university mathematics teaching of multimedia technology, further explore and analyse the content and learning situation of courseware, and develop high-quality multimedia content, face up to the advantages and disadvantages of multimedia technology, scientific use of multimedia teaching, and attach great importance to the dominant position of students.

1. Introduction

The integration of multimedia technology and mathematics teaching, both in terms of content and form, belongs to a new teaching mode, which can realize the sharing of teaching resources to a large extent. With the help of multimedia video, pictures, music and text functions, the teacher allows students to experience the immersive experience, bringing a different emotional experience to the students and fully stimulating the students' enthusiasm for learning. Teachers need to intensify their mathematical innovation, focus on the students' thinking mode, innovative thinking, and abstract thinking. They will use multimedia equipment to present teaching content and explore the enthusiasm of students in the form of slides, pictures and videos to further enhance the quality and efficiency of teaching, comprehensive development of students in the overall quality.

2. The background of college mathematics teaching reform based on multimedia technology

Nowadays, knowledge economy and popular education are developing rapidly. The original and monotonous form of university mathematics teaching is no longer in line with the requirements of social development. The details are mainly reflected in two aspects. On the one hand, the teaching curriculum is reduced. Drawing and blackboard writing are the earliest forms of teaching. They take up a lot of time in the classroom, and it is very difficult to familiarize students and delve into the key knowledge in mathematics. On the other hand, university mathematics and middle school

mathematics are different, both in terms of teaching difficulty and teaching content, which is much more difficult than middle school mathematics teaching. Therefore, in the era of knowledge economy and popular education, we must constantly reform and innovate university mathematics teaching, break through traditional teaching methods and models, and choose new teaching ideas to carry out university mathematics teaching reform. At present, the development trend of information technology and computer technology in China is relatively fierce, which has greatly improved people's life, work and learning quality, and at the same time innovated the methods and ideas of university mathematics teaching reform.

The use of multimedia technology in the reform of university mathematics teaching has largely broken the existing and static teaching forms, and prepared animation simulation technology and audio-visual technology for mathematics teaching, and the expression has certain dynamic effects. The main characteristics of the university mathematics teaching process are dynamic integration and flexible image, which is convenient for students to grasp the abstract knowledge in mathematics more accurately, thus transforming the old mathematics teaching mode into the modern information teaching mode. Therefore, in order to strengthen the effect of multimedia technology in university mathematics teaching, the first question for teachers is how to integrate the innovative ideas, new technologies and traditional teaching advantages of multimedia teaching, and comprehensively and seriously explore the value of traditional teaching mode in teacher-student interaction. The role of scientific use of multimedia technology, find problems to solve problems, and ultimately improve the quality and effectiveness of teaching.

3. University mathematics teaching based on multimedia technology

3.1. Lack of emotional communication

In the classroom, the teacher teaches the knowledge in the textbook to the students. This form is the traditional mode of mathematics teaching in the university. The teaching activities are mainly teachers and students. Nowadays, multimedia technology has made a breakthrough development. The traditional mathematics teaching mode has lagged behind. The teacher-student relationship has gradually been replaced by human-machine relationship. It has greatly demonstrated the efficiency of mathematics teaching and also the communication between teachers and students is limited. Although the transfer of knowledge in the form of mathematics in the mathematics classroom has led to a decline in teaching efficiency, it has deepened the emotional communication between teachers and students. Teachers use physical movements and language expressions to guide and develop students' creative thinking so that they can truly understand the meaning and understand the secrets of mathematics. Multimedia technology affects the teacher's main position. In the mathematics teaching, the teacher's role is an operator, which constrains the emotional communication between the teacher and the student, affects the mathematics teaching effect and quality, ignores the teacher's guidance and development role, and conducts mathematics. It does not have any effect on the development of mathematically innovative work.

3.2. Lack of awareness

The use of multimedia technology to complete the task of university mathematics teaching reform not only changed the original mathematics teaching method, but also greatly improved and improved the teaching methods, teaching concepts and teaching modes. On the one hand, the teaching mode of the teachers in the university mathematics classroom stimulated the students' enthusiasm and confidence in learning; on the other hand, the teaching efficiency and quality of university mathematics have been improved, and the teaching goals have been achieved. However,

in the current multimedia teaching process, many teachers only regard multimedia technology as a device to enhance teaching efficiency and reduce labour, so that multimedia technology is used repeatedly, violating the rules and directions of multimedia teaching. Therefore, the blindness of university mathematics teachers in multimedia teaching is relatively obvious. Randomly associate multimedia teaching with modern education models and contents, and have insufficient understanding of the integration of traditional teaching and multimedia teaching. In addition, many multimedia teaching courseware are set according to the existing teaching forms, which to some extent hamper the innovative ideas of teachers and students, so that the teaching effect and quality are not obvious.

3.3. Boring content

The original purpose of applying multimedia technology in university mathematics teaching is to better serve mathematics teaching. Therefore, teachers need to deeply analyse and discuss teaching materials when using multimedia technology to complete courseware setting, and finally apply new types in multimedia courseware. Educational concepts, teaching cores, and traditional teaching experience, to produce multimedia courseware that is consistent with the teaching design concept. However, in the process of college mathematics teaching, a few teachers do not know much about the characteristics of mathematics and the mastery of students. They only play the content of the textbook through slides. The sub-focus, design and layout of the content are very messy, and the number of words is huge, which makes many Students can't keep up with the teacher's lecture rhythm. They don't have enough time to discuss some problems that they don't understand. They have eroded the enthusiasm and passion of students to learn mathematics, and have a certain impact on the quality and effect of mathematics teaching. In addition, some teachers' multimedia courseware framework lags behind. Most multimedia courseware and textbooks are matched. Teachers can't arbitrarily change the courseware content. This will make the teacher's teaching difficult and lack of innovation, and can't fully stimulate the teacher's thinking and enthusiasm.

4. Countermeasures for the reform of college mathematics teaching based on multimedia technology

4.1. Develop high quality multimedia courseware

The university mathematics teacher should develop high-quality multimedia courseware according to the content of the courseware and the actual situation of the students. The main methods are as follows: (1) In the process of developing multimedia courseware, the teacher should fully display the difficulty and difficulty of mathematics, determine the design thoughts, order the page layout in an orderly manner, distinguish the primary and secondary, apply frequently in the mathematical formulas, concepts and principles of multimedia teaching, determine the content and demonstrate it to the students. In addition, multimedia teaching content can also be explained in the form of traditional blackboard books, integrating board teaching and multimedia teaching. At the same time, in multimedia teaching, teachers should firmly grasp the knowledge and content of courseware, accumulate traditional teaching experience, and use the advantages of multimedia information to quickly transfer the methods, logic and abstraction of mathematical knowledge to students in a short period of time, and enhance the logic thinking of students. (2) When developing the mathematics multimedia courseware, the teacher grasps the existing teaching characteristics and fully reflects the value of traditional mathematics in the emotional communication between teachers and students. The teacher can use the multimedia animation technology to express the mathematical

space geometry and multi-function content, highlighting the principle definition, content and board features in the multimedia courseware, so that teachers and students can learn and progress together.

4.2. Rational use of multimedia teaching

Under normal circumstances, university mathematics teachers use multimedia technology when they start teaching. They take the advantages and disadvantages of multimedia technology seriously. Don't completely lose the traditional form of blackboard, don't use multimedia technology too much, and master traditional blackboard teaching and multimedia teaching. The meaning of reasonable use of multimedia teaching, learn from each other. The characteristics of multimedia teaching are mainly reflected in the following points: (1) Finishing and perfecting teaching resources, so that the efficiency of mathematics teaching can be improved. The time for teachers to complete teaching through multimedia technology is shorter than that for books, so teachers and students can have enough time to interact, recall content, and solve difficult problems. (2) Multimedia technology can collect a lot of information resources for schools and use audio-visual technology to improve the efficiency of mathematics teaching. Teachers can use the spatial geometry of mathematics and the abstract content of multivariate functions to express themselves with multimedia technology, making them vivid and let students better understand and master the difficulties in mathematics. Among them, multimedia teaching has certain limitations. On the basis of improving the teaching effect and quality, it has bound the emotional interaction between teachers and students, and has eroded the enthusiasm of students. Therefore, college mathematics teachers should consider more students, find problems in a timely manner, and demonstrate the value of multimedia technology, so that students can penetrate the secrets of teaching.

4.3. Focus on cultivating students' subject status

Indoctrinating teaching is the most used in the traditional mathematics teaching mode, which emphasizes the teacher's value status and pays insufficient attention to the student's subject status. The traditional classroom explanation is mainly represented by drawing and blackboard writing. It completely ignores the students' psychological characteristics, acceptance level, comprehension ability, and the specified teaching content, method and progress are completely inconsistent. The teacher is too valued to explain whether the content can be explained within the specified time, and does not communicate with the students at all. It not only increases the difficulty of students learning mathematics and understanding abstract content, but also is not conducive to the cultivation of students' thinking mode and comprehensive quality. With the innovative development of multimedia teaching, teachers must focus on cultivating students' main body status and strengthening their communication skills, so that students can have innovative consciousness, thinking consciousness and subject consciousness. At the same time, because university mathematics and middle school mathematics are very different, the difficulty of university mathematics increases, the abstraction becomes stronger and stronger, and the different professional mathematics frameworks and objects are different. At this time, teachers must teach students according to their aptitude, according to the psychological characteristics of students. Accept the appropriate multimedia courseware and do not apply multimedia courseware that matches the textbook.

5. Application characteristics of multimedia technology in mathematics teaching

The maturity of multimedia technology in the education and teaching area has accelerated the development of teaching to some extent and improved the quality of teaching. There are many

advantages to applying multimedia to mathematics teaching, which are embodied in the following points: (1) Students have weak comprehension ability. In the process of using multimedia equipment, abstract mathematics knowledge can be integrated into the situation to meet the cognitive requirements of students. The mode of thinking allows students to master mathematics knowledge more firmly, and further improve the quality of teaching, teaching efficiency and overall quality of students. (2) The application of multimedia technology in mathematics teaching can fully stimulate students' enthusiasm for learning, enable students to have a strong desire to learn, and create an active classroom environment, so that students can learn independently and improve their academic performance. (3) The multimedia teaching resources are extremely rich, which can broaden the horizons of students, increase students' knowledge, and enable students to have a broader knowledge level. (4) Multimedia teaching uses computer-aided teaching to transmit high-density knowledge and effectively solve information problems. Through text flashing, image zooming and moving, color change and other methods, the difficulty is reduced, and the complexity is simplified, so that the classroom teaching capacity is large, speed is fast, and the effect is good.

6. The importance of multimedia technology in mathematics teaching

6.1. Improving students' desire to learn

Many students often feel boring and rigid when they study mathematics, and they don't concentrate well in class. The teacher combines multimedia technology and mathematics teaching to create a new teaching environment for students to integrate into the classroom as soon as possible. Rich multimedia images can stimulate students' senses, enable them to stay in them, enjoy the fun of learning mathematics, improve learning efficiency, strengthen practical skills, and make students' thinking become active. The mathematics teaching process is very boring, which makes the classroom atmosphere become boring, which is not conducive to the formation of classroom activity. With the help of multimedia technology, the classroom atmosphere can be made active to a certain extent, and students' enthusiasm for learning can be stimulated. By playing multimedia music and mathematics related music and movies, the teacher aims to activate the classroom atmosphere and allow students to relax and gain more professional knowledge. For example, in the process of learning mathematics, the teacher can play some small videos related to mathematics, let the students understand the relevant deeds of the scientists and learn their spirit. This makes it easier for students to better understand mathematical formulas, theories, symbols and meanings, so that students have the passion to learn. In addition, the teacher can also play some light music in the classroom to energize the atmosphere, boost the spirit of the students, focus the students, and improve the teaching efficiency and teaching quality.

6.2. Realizing teaching modernization

Nowadays, the information age is coming, which accelerates the pace of university mathematics teaching reform. At the same time, multimedia technology provides convenience for mathematics teaching, making the mathematics model extremely rich, showing the fun and image of teaching activities. When learning mathematics, teachers can make some abstract topics clear through multimedia technology so that students can better understand. For example, in the teaching, you often encounter the problem of "chasing and encountering". At this time, the teacher will present these questions in front of the students in a different way, and transform the motor sports process into a slide. This makes it easy for students to understand math problems and let students have more time to think. In addition, the teacher should understand the basic characteristics of each student, understand their learning characteristics and differences, and use multimedia technology to tailor

the learning situation for students. Promote the individualized development of students, cultivate students' specialties, and provide guarantee for future efforts. For example, a classmate who loves basketball, the teacher can combine basketball and mathematics, multimedia elaborate NBA video, let students calculate the scores, assists, rebounds and other data to enhance students' computing power. Another student likes to listen to the song. The teacher can use the shorthand song of the mathematical algorithm as the student's homework assignment, so that the students can continuously improve their mathematics ability within their own interests.

7. Conclusion

All in all, the advent of multimedia technology has innovated the existing mathematics teaching mode of the university to a large extent, enriched the teaching content and teaching methods, cultivated students' interest, and enabled students to better use mathematics to solve problems and improve teaching efficiency. In order to play the role of multimedia in practice, teachers should continuously explore appropriate teaching methods in combination with the individual characteristics and techniques of students to achieve human-computer interaction.

References

- [1] Xu Erwei. *Research on Teaching Behaviour and Relevant Suggestions of Mathematics Teachers Based on Multimedia Technology Application* [J]. *Automation and Instrumentation*, 2016(12):122-123.
- [2] Zong Hongchang. *Clever Use of Multimedia to Improve the Efficiency of Mathematics Teaching in Primary Schools* [J]. *Academic Weekly*, 2017 (3): 99-100.
- [3] Ma Ying. *Research on the Application of Multimedia Technology in Mathematics Teaching* [J]. *Read and Write*, 2018(2): 45-46.
- [4] Wang Pan. *Research on the Reform of Mathematical Learning Model Based on Computer Technology* [J]. *Automation and Instrumentation*, 2018(6): 100-101.
- [5] Ren Yuzhao. *The Fusion Path of Multimedia Technology in Mathematics Teaching* [J]. *Shanxi Youth*, 2017(19):88-90.
- [6] Li Jing, Zhu Xiaoming. *Analysis of the Advantages and Disadvantages of Multimedia Technology in Mathematics Teaching* [J]. *Computer Knowledge and Technology*, 2017(12): 177-178.