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An Exploration of the Innovation of College Mathematics Teaching Models in the New Media Environment

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Abstract: With the deepening of educational reform, college mathematics teaching should be further optimized. Teachers need to actively introduce new educational concepts and teaching methods to arouse students' interest, strengthen their understanding and application of knowledge, and improve the educational effect. As a much-concerned form of educational assistance at present, new media technology can greatly enrich the teaching content of college mathematics, broaden the educational path, and play a significant role in promoting students' all-around development. In view of this, this article will analyze college mathematics teaching in the new media environment and put forward some strategies for the reference of colleagues.

Keywords: New media; College mathematics; Teaching; Innovation

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1. The value of innovating college mathematics teaching models in the new media environment

1.1. Enriching teaching resources

In the new media environment, innovating college mathematics teaching models can greatly enrich the teaching resources of current mathematics teaching, helping students to form a more complete mathematics knowledge system during the process of knowledge exploration. When innovating college mathematics teaching models in the new media environment, teachers can not only expand and analyze textbook knowledge but also use new media technology to introduce interesting elements into the classroom, providing students with more knowledge content that combines fun and education. This is of great significance for improving the educational effect [1]. In addition, with the development of the times, the forms and contents of digital teaching resources will become more abundant, which can effectively meet the knowledge exploration needs of different types of students and

lay a solid foundation for teachers to carry out more in-depth and extensive mathematics teaching in the future.

1.2. Broadening teaching paths

Different from traditional college mathematics teaching, innovating mathematics teaching models in the new media environment can effectively break down the barriers between students and mathematics knowledge, improve their knowledge learning efficiency and depth of understanding, and enable students to better use the learned knowledge to solve practical problems [2]. Moreover, innovating mathematics teaching models in combination with new media technology can effectively expand the current teaching paths, deepen students' understanding of the learned knowledge, and improve the quality of education. What is more, teachers can introduce micro-courses, media videos, etc. into the classroom when innovating mathematics teaching models, providing more convenience for students' mathematics knowledge learning activities, offering them better teaching services, helping students develop good habits of exploring mathematics knowledge, and thus greatly enhancing the effect of mathematics teaching reform.

1.3. Enriching interaction forms

In the new media environment, innovating college mathematics teaching models can effectively enrich the interaction forms between students and mathematics knowledge, deepen their understanding and application of the learned knowledge, and greatly promote students' long-term development. In addition, the introduction of new media technology can open up a new educational path for teachers, enabling more in-depth communication between students and teachers based on mathematics knowledge, which is of great significance for improving students' knowledge exploration efficiency [3]. In previous mathematics teaching, students rarely had the opportunity to express their opinions and views in class. By introducing new media technology, they can express their opinions during discussions, effectively highlighting students' dominant position in the classroom and promoting their long-term and comprehensive development.

2. Analysis of the current situation of college mathematics teaching

2.1. Backward teaching concepts

At present, many teachers fail to innovate and optimize their teaching concepts in line with the requirements of the new media era when carrying out college mathematics teaching. As a result, the educational concepts adhered to by many teachers are relatively single and backward, which is not conducive to the innovation and development of subsequent mathematics teaching models. In previous mathematics teaching activities, many teachers had a certain exam-oriented mindset. When teaching mathematics knowledge in the classroom, they mainly focused on theoretical knowledge and rarely led students to explore and learn mathematics knowledge in combination with practical problems, cases, or projects. This will greatly hinder the improvement of subsequent teaching effects [4]. In addition, teachers do not expand textbook content enough when teaching college mathematics, which will affect the formation and development of students' good mathematical knowledge systems. Moreover, in the new media environment, teachers do not introduce enough high-quality ideas and concepts, and their teaching work lacks clear goals, which will also hinder the development and improvement of students' knowledge systems and is not conducive to the improvement of their comprehensive abilities.

2.2. Single-mode teaching

To further improve the innovation effect of college mathematics teaching models, teachers should choose appropriate methods for daily teaching activities, which can help students understand the learned knowledge more deeply and improve their practical application level of mathematics knowledge [5]. However, in current college mathematics teaching, teachers do not innovate their mathematics teaching models enough and often adopt single-mode teaching methods. Although this can help students master certain mathematical knowledge, it is not beneficial for them to understand deeper-level knowledge content. It may even cause some students to develop resistant and confrontational emotions, which is not conducive to the formation and development of their more complete mathematics knowledge systems. What is more, single-mode teaching models also make it difficult for teachers to optimize the teaching atmosphere, which is not conducive to students' better appreciation of the charm of mathematics knowledge and hinders their long-term development.

2.3. Lack of student interest

College mathematics knowledge is highly complex. Some mathematical knowledge points are abstract and boring for students to learn, and the forms of knowledge expression are diverse. This requires students to have strong learning abilities. In college mathematics activities, many students do not have a high level of learning initiative. Some students even get distracted or play with their mobile phones in class, which greatly hinders the improvement of their mathematics knowledge learning efficiency [6]. In addition, students' low participation also hinders teachers from creating a good teaching atmosphere and enhancing their teaching confidence. Due to the lack of high learning interest, students are likely to give up easily when exploring college mathematics knowledge, making it difficult for them to think more deeply about the learned knowledge and greatly affecting the improvement of college mathematics teaching effects.

3. Strategies for innovating college mathematics teaching models in the new media environment

3.1. Using online videos to stimulate students' interest

In the new media environment, to further improve the innovation effect of college mathematics teaching models, teachers should focus on stimulating students' interest, which can lay a solid foundation for subsequent teaching work and is also a prerequisite for teachers to create a high-quality classroom environment [7]. Therefore, when innovating college mathematics teaching models, teachers should ensure the rationality and scientificity of their educational methods so that students can better experience the charm of mathematics knowledge and improve the innovation effect of college mathematics teaching models. In the practice of innovating college mathematics teaching models, teachers can search for some new media pictures and videos related to the teaching content on the Internet, effectively expanding the teaching content, fully mobilizing students' audio-visual senses, enabling them to understand and think about the learned mathematics knowledge from different angles and directions, stimulating their interest in knowledge exploration, and laying a solid foundation for the subsequent innovation and reform of college mathematics teaching models [8]. To ensure the compatibility between new media video resources and students' needs, teachers should analyze students' mathematics knowledge reserves, cognitive abilities, and thinking habits before introducing new media resources into the classroom, so as to improve the innovation effect of college mathematics teaching models.

For example, when teaching the knowledge of "numerical solutions of partial differential equations",

teachers can start from various solution methods, introduce some practical application problems in real life with the help of new media technology, and organize students to discuss and think about these problems. This can better attract students' attention to the classroom knowledge, enable them to have a deeper understanding of the learned knowledge, and enhance students' interest in knowledge learning [9]. By reasonably introducing media videos into the innovation of college mathematics teaching models, students' interest in knowledge exploration can be greatly enhanced, and they can enjoy a stronger spiritual experience while gaining knowledge reserves, which is of great significance for improving the innovation effect of college mathematics teaching models.

3.2. Introducing micro-courses to overcome difficulties and deepen students' understanding

In the new media environment, to further improve the innovation effect of college mathematics teaching models, teachers should pay attention to introducing new teaching methods and concepts, to further deepen students' understanding and application of the learned knowledge, and improve the educational effect. College mathematics knowledge is highly abstract, and some students have limited understanding abilities, which may lead to difficulties in understanding when they learn mathematics knowledge. This will greatly hinder their application of mathematical knowledge to solve practical problems in the future [10]. In previous college mathematics teaching, teachers mainly taught based on textbooks, which could help students master certain mathematical knowledge, but was not conducive to the improvement of their comprehensive abilities and practical qualities. Therefore, teachers can try to introduce micro-courses into the innovation of college mathematics teaching models, reform and expand the teaching model, deepen students' understanding efficiency and depth of the learned mathematics knowledge, and thus reconstruct and optimize the college mathematics teaching model. Teaching reform with micro-courses in the new media environment allows students to analyze and explore the learned knowledge from different angles and levels, enabling them to master more knowledge and problem-solving skills imperceptibly, which greatly promotes students' long-term development.

When designing micro-courses, teachers should control the length of micro-courses to ensure that students can concentrate on them and avoid students getting distracted due to overly long micro-courses. At the same time, teachers should ensure the interestingness of micro-course content so that micro-courses can be more attractive to students, prompting students to explore and learn knowledge more actively in combination with micro-courses. In the design process, teachers can introduce some interesting videos related to the teaching content with the help of new media technology, narrowing the distance between students and mathematical knowledge and reducing students' understanding difficulties [11]. Moreover, teachers can place some questions at the end of micro-courses, enabling students to think about these questions after watching the micro-courses. This can enhance the depth of teaching, further develop students' thinking and analysis abilities, and thus help improve students' mathematics knowledge learning effects.

3.3. Building a self-learning platform to construct a knowledge system

In the new media environment, to further improve the innovation effect of college mathematics teaching models, teachers should focus on cultivating students' self-learning abilities and helping them construct a more complete mathematics knowledge system, which greatly promotes students' long-term development in the future [12]. Therefore, when carrying out teaching reform, teachers can try to build a new media self-learning platform to help students carry out more efficient self-learning activities, enabling them to solve various

problems encountered in self-learning in a timely manner and improving their knowledge learning efficiency. In previous self-learning, students often encountered various problems, which hindered the smooth progress of their self-learning activities. Therefore, teachers can build a self-learning platform to help students solve problems encountered in self-learning in a timely manner, which is conducive to the formation and development of their more complete knowledge systems. When innovating college mathematics teaching models, teachers can organize students to carry out self-learning activities through the self-learning platform according to the actual situation of their schools. If students encounter problems during learning, they can upload their problems to the self-learning platform and then solve the problems with the help of classmates and teachers, which can greatly improve students' self-learning effects [13]. Moreover, to further improve the innovation effect of college mathematics teaching models, teachers can add an information-sharing function to the platform. Students can share some problems they encounter in daily life, which helps students learn from each other, promotes the formation of a more complete mathematics knowledge system, enhances the advancement of their knowledge, and ensures the innovative effect of college mathematics teaching models.

3.4. Conducting reasonable teaching evaluations to improve teaching problems

In the new media environment, to further improve the innovation effect of college mathematics teaching models, teachers should pay attention to improving and optimizing existing teaching problems, which requires the support of a complete teaching evaluation system. By conducting reasonable evaluations of students, they can have a correct understanding of themselves, which is conducive to their discovery of their own shortcomings and deficiencies. Teachers can also further optimize the content and form of their college mathematics teaching model innovation based on students' feedback and eliminate some potential problems. Before evaluating students, teachers can reasonably group them to ensure the pertinence and scientificity of the evaluation work [14]. For students with insufficient basic knowledge reserves, when evaluating them, teachers can focus on examining theoretical knowledge and encourage them to actively learn textbook knowledge to strengthen their mathematical foundation. When evaluating ordinary students, in addition to examining their mastery of theoretical knowledge, teachers should also evaluate them in combination with some practical problems and cases, so that students can master more knowledge and skills for solving problems and help them form a more complete mathematics knowledge system [15]. For students with strong professional abilities and solid knowledge reserves, when evaluating them, teachers can analyze some practical problems and projects and develop a more stringent evaluation mechanism for them, so as to better stimulate students' potential and promote their long-term and comprehensive development.

4. Conclusion

In conclusion, to improve the effectiveness of innovating college mathematics teaching models in the new media environment, educators should first clarify the value of optimizing college mathematics teaching, then analyze the current situation of college mathematics teaching, and finally conduct research from aspects such as using online videos to stimulate students' interest, introducing micro-courses to overcome difficulties and deepen students' understanding, building a self-learning platform to construct a knowledge system, and conducting reasonable teaching evaluation to improve teaching problems. Only in this way can the quality of innovative college mathematics teaching models be raised to a new level.

Disclosure statement

The authors declare no conflict of interest.

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