

# Application of Flipped Classroom Teaching Model in University Mathematics Teaching

Jingru Zhang

Jilin Normal University of Engineering and Technology, Changchun 130000, Jilin, China

**Abstract:** With the continuous development of modern information technology, flipped classroom teaching mode has been well applied and developed in college mathematics teaching activities. Compared with the original college mathematics teaching model, flipped classroom teaching model has the advantages of strengthening and enhancing students' interest in learning and exercising students' independent learning ability, which is more conducive to the growth and development of contemporary college students and plays a better role in promoting the achievement of college mathematics teaching objectives. This paper analyzes and discusses the practical and effective application of flipped classroom teaching mode in university mathematics teaching, hoping to provide important reference for the development of university mathematics teaching.

**Keywords:** College Mathematics; Flipped Classroom Teaching Model; The Teaching Application

In actual production and life, it is extremely necessary to carry out university mathematics teaching activities. As a discipline that students must learn from small to large, mathematics is closely related to students' daily study, life and work. Doing a good job in college mathematics teaching will help to strengthen students' comprehensive quality of mathematics and lay a foundation for their future work and life. According to the actual situation, college mathematics puts forward higher requirements on students' abstract thinking and logical thinking, and many students are prone to feel the pressure of learning, unable to participate in college mathematics teaching activities, and lack of good initiative in subject learning. The flipped classroom teaching mode is actively introduced into the university mathematics teaching activities, and the original teaching mode is innovated so that it plays a good role in promoting students' self-learning ability and stimulating students' initiative in subject learning.

## 1. A brief overview of the flipped classroom teaching model

With the rapid development of modern society and economy, the production and operation mode of all walks of life in China has entered a state of innovative development. Based on the introduction of modern science and information technology into the education industry, flipped classroom, an innovative teaching mode, exists and is well applied in the education industry in China. According to the actual situation, relevant theories of flipped classroom teaching mode were first proposed by Benjamin bloom, a famous American educator. The content of her teaching viewpoint is as follows: during the implementation of education work, only good and sufficient learning conditions are provided for learners, so that learners can achieve good learning results. During the teaching process, teachers only need to correct the mistakes existing in learners' learning. Flipped classroom teaching model makes full use of the educational concept mentioned above by educator Benjamin bloom. During the implementation of discipline teaching activities, teachers provide students with good learning resources and enough learning space by providing pre-recorded teaching content related videos and corresponding teaching courseware and textbooks, Students can control their own

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learning time during the process and gradually complete the subject knowledge unit learning task to gradually master the corresponding subject knowledge content, and through the form of self-test teacher evaluation and other forms of implementation to check the gaps and make up the deficiencies and loopholes in their learning period, and give corresponding improvement. Compared with the traditional classroom teaching mode, flipped classroom teaching mode highlights the dominant position of students in classroom teaching, and teaching activities are more humanized, which strengthens the communication and interaction between teachers and students, enlivens a good classroom atmosphere, and plays a good role in enhancing the quality of classroom teaching.

## **2. The practical application of flipped classroom teaching model in college mathematics teaching**

During the whole process of the implementation of university mathematics teaching activities, the content of practical application of flipped classroom teaching mode is:

### **2.1 An overview of the preparation before class**

The preparation for teaching before class is an important basis for promoting the effective use of flipped classroom teaching mode. It can play a good role in promoting the active and effective development of classroom teaching activities and has extremely important practical value. According to the actual situation, during the whole process of the implementation of university mathematics teaching activities, based on the application of the flipped classroom teaching model, homework activities that should be carried out in the preparation before class include: First of all, teachers should compile corresponding teaching objectives and teaching contents according to the contents of college mathematics textbooks, make clear the time required to achieve teaching tasks, and promote the orderly implementation of follow-up teaching activities. Secondly, based on the application of computer information technology of multimedia teaching resources, teachers should combine teaching methods and teaching contents to make corresponding course videos, and send the produced course videos to the corresponding network teaching platform. Teachers also need to collect and sort out students' feedbacks on video content in advance, understand students' learning questions, and formulate corresponding teaching methods with corresponding information content, so as to strengthen the scientific rationality of university mathematics teaching activities. For example, during the teaching activities of calculus course, the teacher first records the key and difficult points of the first chapter of the calculus course into a corresponding teaching video, which is generally controlled to be about 10 minutes long. Send the short teaching video to the class chat platform for the class students to download and study independently. By assigning the task that each student should ask two questions to the teacher during the class teaching activities, guide the students to implement the corresponding independent learning activities.

### **2.2 Overview of the content spcourse in the course**

Group learning is an important component of flipping the classroom teaching mode under practical application. Due to the difference of mathematics subject base and comprehensive literacy level of each student in the class, Different students will show different levels of understanding of teaching videos. In the case of practical application of the flipped classroom teaching mode, teachers should know the current learning situation of students based on the feedback from students, and group them selectively to implement the basis of teaching principles based on aptitude. In this way, it is helpful for the group members to have more effective exchanges and discussions with each other, and to obtain good growth and development from them. It is worth noting that, in order to effectively guide the study group to carry out good teamwork and exchange learning, teachers should put forward corresponding teaching tasks according to the overall situation of the study group, including the professional situation, mathematics foundation, etc. The teaching tasks can better mobilize the communication and learning initiative of the study group, and allow the study group to make full and effective use of the knowledge learned. For example, during calculus classroom teaching activities, teachers can divide the students majoring in architecture and economics into two corresponding study groups according to their majors, and assign corresponding teaching tasks to them. For architecture students, teachers can ask

them to pass The application of calculus knowledge is to find the surface area and arc length of several common building curves. For students majoring in economics, teachers can require them to analyze the elastic consumption through the application of calculus knowledge. Based on the establishment of study groups and appropriate teaching task arrangements, it can not only guide students to better grasp the content of mathematical knowledge, but also promote them to better master the corresponding professional knowledge, strengthen students' teamwork awareness, has a better promotion effect to students' future development.

### 2.3 Summary of the content of the summary session

On the basis of the practical application of the flipped classroom teaching model, the post-course summary link has an important impact on the growth and development of students. It can be based on the teacher's scientific and reasonable comprehensive assessment to help students understand their own learning deficiencies and deficiencies and make corresponding optimization Improve work and promote better growth and development for students. The specific content is: the teacher should make a comprehensive evaluation of the overall performance of the students according to the completion of the students' classroom teaching and the individual performance of the students during the group communication and discussion. For example, after the calculus classroom teaching activities, teachers should summarize the learning performance of architecture students in the post-summary summary link, and make corresponding comments on the calculation errors and outstanding performance of the students during the study period. The teacher's evaluation of class students' understanding, memory, and analysis of the content of mathematical subjects can help students understand their own shortcomings in learning, provide an important reference for students' autonomous learning in the future, and also provide teachers with the implementation of subsequent teaching activities The important reference basis is to urge teachers to do a good job of setting up subsequent classroom teaching content and teaching methods. In the case of proper homework activities in the summary section after class, it will help to achieve good teaching according to their aptitudes, strengthen the scientific rationality of the entire teaching model, and at the same time be proactive in students' subject learning and students' subject growth and development. Has a better promotion.

## 3. Conclusion

According to the analysis and discussion in this article, we can see that teaching methods and teaching modes have a great impact on the implementation of subject teaching activities. Under the circumstances of the continuous operation and development of modern society, the new classroom teaching mode of flipped classrooms has emerged and is in China. It has been well applied and developed within the university. The application of the flipped classroom teaching model in college mathematics teaching activities can not only promote the active and effective development of college mathematics teaching activities, but also strengthen the quality and efficiency of college mathematics teaching activities. A good training of students' independent learning ability and inquiry ability has a good role in promoting the growth and development of students. In the field of education industry, we should increase the intensity of unfamiliar research in classroom teaching.

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