

# Analysis of University Mathematics Teaching Reform based on Internet

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## Abstract

**The university mathematics curriculum is an important basic course of colleges and universities. Combined with the current teaching situation of university mathematics, it puts forward suggestions for the reform of university mathematics curriculum under the "Internet +" situation, thus promoting the teaching reform of college mathematics curriculum and the training of undergraduate teaching. Quality improvement.**

## Keywords

**Micro-course; Self-learning; Teaching Reform; General Knowledge; Multimedia.**

## 1. Introduction

With the development of technology, online learning forms such as MOOC and Micro-courses not only provide learners with a new learning method, but also provide educators with new teaching modes. In the era of the Internet, breaking the time and space of teaching, how to rely on the Internet's teaching reform, and exploring the new educational model under the "Internet +" situation is the main task of current higher education educators. Based on my own teaching practice, the author summarizes the following points:

## 2. Produce High Quality Multimedia Courseware

University mathematics teachers should produce high-quality multimedia courseware based on the content of the textbook and the actual situation of the students. Teachers should pay attention to highlighting the key points and difficulties of mathematics teaching when making multimedia courseware. The design ideas are clear, and the mathematics formulas, mathematical concepts and mathematical theorems applicable to multimedia teaching are accurately and concisely displayed to students, but not suitable for multimedia teaching. The content can be explained in the form of a blackboard, and the combination of board teaching and multimedia teaching. Teachers can present spatial analytic geometry, multivariate functions, matlab and other content in mathematics through multimedia animation technology. For the theorem concept and other content, it is necessary to combine the characteristics of traditional blackboard teaching to produce multimedia courseware, focusing on the simultaneous learning and interaction between students and teachers.

## 3. Building a Mathematics Class Course Website or Recording a Micro Lesson Video

In order to facilitate students to "Self-learning", at the same time as a supplement to classroom teaching. Online teaching students have the following advantages in watching Micro-course videos: there is no time and space restriction between teachers and students, students can choose their own learning time; without the requirement of teaching and learning synchronization, students can learn at any time and in any number of times. In this way,

students can understand and master the content in the classroom, and students can use online learning to supplement and improve. Therefore, the school should build a group of public mathematics Micro-course courses website, the website contains the Micro-course video (or Micro-course video) taught by the teacher, and also need a supporting course feedback mechanism, such as online testing, etc., to facilitate students to learn by themselves. And self-evaluation.

#### **4. Establish an Online Communication Platform to Guide Students to “Self-learning” and Other Courses**

Mathematical courses are difficult for students to learn by themselves. Therefore, it is necessary to do a good job in counseling and answering questions. Take the author's school as an example, the teacher will establish a course QQ group, students can ask questions at any time under the class, and a good teacher can also answer, and also mobilize the students' enthusiasm. Teachers can easily guide students' self-directed learning, and students can also exchange and learn on the platform.

#### **5. Reform of the Mathematical Assessment Method**

In the author's school, the assessment of advanced mathematics courses is divided into: usual grades and final grades. The final grades use electronic scoring, which not only improves the speed of scoring but also improves the accuracy of scoring. Usually, the online test is set up several times, and students can answer questions at any time by using mobile devices such as mobile phones or computers. You can see the results immediately after answering the questions. Teachers can also keep abreast of the student's learning situation so that the teaching progress can be adjusted at any time.

#### **6. Opening an Online Mathematics Extracurricular Elective Course**

The public courses of university mathematics - higher mathematics, linear algebra and probability theory and mathematical statistics, because of the limitations of class time, teachers are difficult to do in the classroom, it is difficult to combine with the professional courses of students. In order to meet the needs of students at different levels, a number of public elective courses in mathematics can be offered online, such as "Advanced Mathematics," "Mathematics Culture," "Study in Mathematics," "Statistics and Analysis," "History of Mathematics," Mathematical Modeling, etc., to meet the learning needs of different students.

#### **7. Open a Mathematical Software Class Online Elective Course**

The mathematics competition for college students and the mathematical modeling competition for college students are an extension of students' knowledge learning. With the application of thought as the guiding ideology and the mathematics competition as the platform, the students' general knowledge ability is cultivated: the students' cognitive vision is broadened, the students' perseverance is tempered, the mathematics essentials are trained, the team consciousness is enhanced, and the development is enhanced. The students' innovative ability, optimistic and healthy positive attitude. In this process, students should be familiar with the operation of mathematical software, such as Matlab, Spss, lingo software operations and the use of the formula editor. It can also be used as a pre-training for mathematical modeling training.

Multimedia technology has changed the traditional university mathematics teaching mode, broadened the teaching content, enriched the teaching methods of teachers, helped to cultivate

students' mathematics interests, improved students' ability to apply mathematics, and improved teaching quality. 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.

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