The Application of Hybrid Teaching in Higher Mathematics Teaching

Ting Li

Dalian University of Science and Technology, Dalian, Liaoning, 116052, China

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Abstract: under the Background of Information Development, the Teaching Reform of Colleges and Universities is Facing a Huge Test. as an Important Basic Course of College Curriculum, the Teaching Reform of Higher Mathematics is Also the General Trend. the New Teaching Methods, Such as Mooc, Wechat and Wechat, Combined with the Traditional Classroom, Are Exploring the Stage of Development. Although They Are Initially Effective, They Also Have Shortcomings, So They Have Research Significance.

1. Introduction

As an Important Basic Course of Engineering Major in Higher Education, Higher Education Should Be the Focus of Higher Education, But in Fact It is Not Optimistic - the High Incidence of Students Hanging[1]. the Traditional Teaching Method is Not Suitable for the Study of Students Now. the Reform of Teaching Method and Teaching Method in Higher Education is Indispensable.

2. the Importance of Higher Mathematics

American Modern Mathematician Klein Pointed out That “Mathematics is Not Only a Problem-Solving Technology, But Also the Mixing of Pigments Can Not Be Used as Painting Art.” the Method of Using Mathematics as a Research Tool is Just as Absurd as Leonardo Da Vinci's “the Last Supper”, Just Like the Combination of Simple Pictures on the Canvas. Like Art, Mathematics Needs Passion, Intuition and Imagination. Mathematics Comes from Real Life, Higher Than Real Life. I Come from Real Life. Abstract Science is Represented by Quantitative Relations and Spatial Forms[2]. Although Students Have Been Studying Since Enrollment, Higher Mathematics is Still a Very Important Basic Subject. the Study of Advanced Mathematics is Mainly in Science, Engineering, Agriculture, Medicine, Economics, Management and Other Disciplines. They Are All Important Means of Using Mathematics as a Tool or Technology to Cultivate Students' Logical Thinking Ability. Mathematics Mainly Provides Theoretical Basis and Thinking Direction for the Follow-Up Teaching. More Importantly, Learning Mathematics Can Cultivate People's Thinking Ability, the Ability to Analyze and Solve Problems. the Thinking Mode of Higher Mathematics Penetrates into Many Fields of Follow-Up Courses and is the Basic Tool of All Science and Engineering Disciplines.

Table 1 the Gender And Professional Situation of the Students Selecting Courses

Gender	Major			Total
	Liberal arts	Science and Engineering	Art	
Male	140	182	2	324
Female	306	116	10	432
Total	446	298	12	756

3. The Current Situation of Higher Mathematics Teaching

Only with a scientific and rigorous attitude towards knowledge can we learn mathematics well and make good use of it. There are many students in class, the effect is not obvious. The content of the course is relatively large and the content of the course is relatively small. Teachers can't understand the situation of the school in time[3]. This is that some students can't catch up with

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teachers' progress, and they won't learn anything tired. For higher mathematics teachers, we should strive to achieve “two exits and one walk”. In the “rigorous” mathematics, let the students “high cold” Mathematics in real life, let the “high school” mathematics apply to the occupation, let the students think mathematics is useful. Come out of the “Xiaoni” class, leave a certain amount of time and space for students to solve problems, solve problems, let students take the initiative to learn, and reflect the advantages of students. “Fashion” guidance, training students' ability, solving computer software and mathematical problems, enriching students' mathematical operation content, practical significance of mathematical concepts, methods and ideas, teachers' focus is the combination of practical life and academic conditions, and enriching students' mathematical cognition[4]. In order to solve the problems encountered in real life, we set up a mathematical model to reward students. The core and key of scholars such as Su Deming and Zheng Kun is to cultivate students' good habits of mathematical thinking, use mathematical methods to solve practical problems, and understand advanced mathematical concepts and theories. As long as you have a solid mathematical foundation and a scientific and rigorous attitude towards knowledge, you can learn mathematics well and make good use of it.

4. Initial Results of Higher Mathematics Teaching Reform

The reform of higher mathematics teaching is mainly reflected in the application of MOOC, wechat and wechat in Higher Mathematics Teaching under the background of “Internet +”. Mu class and micro class are the products of the development of network technology. They are a kind of teaching mode combining human and network technology. Their advantages lie in that students can learn knowledge at any time and anywhere without limitation, and they can also choose courses and teachers freely according to their own needs. This teaching mode has overturned the traditional teacher centered teaching method and explored it to a large extent It improves students' learning personality and learning potential, and effectively improves the teaching effect of higher mathematics course. In the teaching of higher mathematics, the application of online and offline courses combined with the teaching method better conforms to the learning method of contemporary college students, stimulates students' interest in learning, thus improving the teaching efficiency and learning effect of students.

5. The Deficiency of Higher Mathematics Teaching Reform

At present, the students of application-oriented undergraduate colleges have low learning consciousness, poor learning foundation and learning ability, and even worse mathematics learning ability. Higher mathematics teaching needs to adapt to this situation[5]. Starting from improving students' interest in learning mathematics, changing teaching methods and combining high technology to form a new teaching mode, so as to achieve the teaching effect and improve teaching quality Quantity. For the cultivation of application-oriented talents, it is necessary to use appropriate teaching materials in combination with students' professional characteristics, rather than classic traditional teaching materials. Although the knowledge system of classic teaching materials is relatively perfect, there are many theoretical analysis and few applications, which will lead to the illusion of “useless mathematics” for students[6]. The problem we are facing is how to optimize and integrate the mathematical knowledge of the system, and how to highlight the application of mathematical knowledge in the major. This is not a simple thing, it needs repeated practice and exploration [7]. The learning cycle of advanced mathematics is long, the content before and after is highly related, involving a wide range of knowledge and strong logic[8]. Some theories prove that it is difficult, and students will not be tired of learning for a long time. How to control the generation of fear of difficulty and stimulate the enthusiasm of students is still a research topic. The teaching form of higher mathematics is single. In terms of teaching methods, the teaching method of Higher Mathematics in Colleges and universities is mainly “teaching method”. But from the point of view of higher mathematics content, mathematics teaching content is boring, students often can't concentrate for a long time in the course of listening, the state of listening is poor, and the teaching

effect of teachers is not good. The traditional teaching method which combines blackboard teaching and multimedia courseware assisted teaching is monotonous, which can't arouse the students' interest in learning. Usually, the students' attention starts to be slack after more than ten minutes of teaching activities.

Table 2 Teaching Situation Of Advanced Mathematics

School Name	School Name	Class hour	Semester	Theory class hours	Practical class hours
Shanghai Customs College	2008	36	1	4	32
Shanghai Foreign Studies University	2009	36	1	2	34
Shanghai Electric Power College	2000	30	1	4	26
Shanghai University of Technology	2002	128	4	8	120
Shanghai Institute of Finance	2001	34	2	4	30
Shanghai University	1995	100	5	10	90
Shanghai Ocean University	2007	32	1	2	30
Shanghai Second University of Technology	2002	64	2	8	56

6. More Diverse Evaluation Models

In the past, most of the test scores were determined by the final test scores. Before, the students' scores were allocated to 40% of the normal scores and 60% of the test scores. However, due to the weak foundation of the students and the low score of the test scores, the final overall evaluation scores were not ideal. After the implementation of the new assessment model, we pay more attention to the students' learning performance at ordinary times, and have formulated the normal performance accounting for 50%, and the paper performance accounting for 50%, so that students need to participate in classroom learning more[9]. The establishment of blue ink cloud class provides opportunities for many students. Usually, they raise their hands to answer questions, or the teacher shakes them to reward the students who perform better. In order to improve their usual performance, the students all participate in the knowledge answer, which makes the classroom atmosphere very active and the learning effect greatly improved.

In the past, when the class was practicing, many students were always perfunctory and could not finish the tasks assigned by the teacher very well. Moreover, for this part of students, the teacher also had a hard way to urge them. Now, with the help of blue ink cloud, students are required to upload the exercises in the class at the end of this class, for mutual evaluation, for uploading In time, the students who have completed well will be rewarded with a certain amount of experience value. The purpose of doing so is, first, to make some students have to participate in classroom learning; second, for the students who have not completed seriously, they will be given a warning through the comparison of experience value. If the experience value is low, they will be given a warning of failing. Judging from the current situation, students' classroom discipline has been greatly improved. There are few students playing mobile phones and sleeping in class.

7. New Exploration of Higher Mathematics Teaching Reform

In order to improve the quality of higher mathematics teaching, teachers are also trying their best to bring forth new ideas. At this stage, they mainly use the combination of online and offline methods, mainly including “MOOC + Classroom flipping”, “MOOC + theoretical teaching”, “micro class + practical operation” and other teaching modes. MOOC mainly adopts the course of “love course”, which not only makes up for the unfair allocation of educational resources, but also allows students to choose courses according to their own preferences and needs, and these resources are free. As long as there is network and computer, they can learn anytime and anywhere. At the same time, micro class videos are recorded according to the knowledge structure of students to meet the learning needs of different students. The micro class is mainly recorded by the teacher. The short video of about 10 minutes is recorded with the textbook as the unit of knowledge points. The

recorded micro class is uploaded to the learning link. Students can learn as long as they have a mobile phone and a network, which is more convenient for students to learn. In the classroom, teachers have more time to pay attention to the calculation and derivation process of higher mathematics, aiming at training students' logical thinking ability.

8. Conclusion

In a word, under the background of high-speed information technology, the traditional classroom can not meet the needs of contemporary college students, but the use of MOOC, wechat, etc. can not completely replace the traditional teaching, which requires students to actively participate in, MOOC and wechat learning are mostly completed in the unsupervised situation, so to improve the teaching quality, MOOC, wechat, etc Micro class and traditional classroom teaching are combined to realize classroom flipping. Explore “MOOC + theory teaching”, “micro class + practical operation” and other teaching modes to realize mixed teaching and improve teaching quality. Hybrid teaching is also the general trend, which is more suitable for the contemporary college students to learn the teaching method, but its use still needs teachers to further explore.

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