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Research on Teaching Reform of "Mathematical Analysis" in Colleges and Universities under the Mode of Innovative Talent Training

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Abstract: With the rapid development of society, the traditional conservative talent training model can no longer meet the development needs of the current society, so the talent training model of various disciplines is changing to innovative talents. This article researches and analyzes the teaching mode of the "mathematical analysis" course in college education. Starting from the current situation and characteristics of mathematical analysis teaching, it discusses the teaching reform measures to improve the teaching efficiency of the "mathematical analysis" course. Suggestions for improvement of teaching methods.

Keywords: Cultivation of Innovative Talents; College Education; Mathematical Analysis; Teaching Reform

In the course of mathematical analysis, each of the more important courses in the teaching curriculum plan of the mathematics department of the colleges and universities is done, and the curriculum setting basically runs through the entire period of the student's college stage. This course not only can provide students with the basic theories and methods necessary for subsequent professional courses, but also plays a very important role in improving students' comprehensive mathematics quality. It is the focus of all mathematics students. Combining years of teaching experience in mathematical analysis, the author explores the reform of mathematical analysis teaching in colleges and universities under the innovative talent training model, and hopes to provide some useful suggestions for improving the quality of mathematics teaching in colleges and universities in my country.

1. Problems in the traditional teaching of "mathematical analysis" in colleges

1.1 The teaching method is too rigid and lacks the cultivation of students' innovative ability

In actual teaching, many colleges and universities continue to use traditional teaching methods, overemphasizing the rigor and logic of teaching, neglecting the subjectivity of students in the teaching classroom, and obliterating students' enthusiasm for learning mathematical analysis to a certain extent., Coupled with the difficulty of learning the subject, many students have a serious fear of it. If things go on like this, not only do students have insufficient understanding of the basic theoretical knowledge of textbooks, but they also cannot master practical calculation problems. Students' performance in comprehensive mathematics is insufficient, and overall learning efficiency cannot be improved.

1.2 Lack of exercise in practical application of mathematics

The essence of the mathematical analysis course is to help students use mathematical theories to think and solve various application problems. However, the main characteristic of the traditional "cracking duck" teaching model is that it emphasizes theory and neglects practice, which makes students lack certain creative exercises. Form a state of "reading dead books and dead reading". For example, most students will not use calculus to solve applied mathematics problems after learning calculus, which is a very big obstacle to students' subsequent graduate exams. Therefore, teachers should add some practical application exercises in the teaching process. To enhance students' practical application ability and promote students to form good innovative thinking.

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2. Matters needing attention in cultivating students' creative ability in the teaching of "mathematical analysis"

In the selection of mathematical analysis teaching content, combined with the problems in traditional teaching, in order to cultivate students' innovative ability, teachers should pay attention to the following points: First, make the theoretical system of mathematical analysis unfold in an orderly manner and build a more complete theoretical framework of knowledge. Secondly, strengthen the quality education of students, teach students correct, rigorous and scientific mathematical thinking methods, and cultivate students to form good study habits in daily study. Finally, teachers should strengthen the training of mathematical modeling in teaching, improve students' ability to solve applied mathematics problems, and allow students to continuously summarize and think about themselves in the process of solving problems, so as to enhance students' innovative thinking ability.

3. Teaching reform measures of "mathematical analysis" under the training mode of innovative talents

3.1 Make fine-tuning of teaching content, pay attention to basic theoretical knowledge and students' calculation ability

The phenomenon of "emphasizing theory and neglecting practice" in traditional teaching is more serious. In teaching, there are many advanced mathematics knowledge that are slightly beyond the comprehension ability of students. This content not only takes too long in the teaching process, but also from the feedback of students, The actual learning situation of students is not ideal, because this part of the content does not have a great impact on students' future postgraduate entrance examinations and work. After comprehensive analysis and consideration, teachers should appropriately adjust the proportion of difficult knowledge in teaching, and shift the teaching focus to improving students' mastery of basic knowledge and training of students' basic calculation ability, so as to enhance students' innovative thinking ability, To prevent students from falling into the quagmire of learning advanced math problems.

3.2 Pay attention to the connection of various knowledge points in teaching

After systematic content adjustment, teachers need to organically connect the theoretical knowledge in mathematical analysis according to the professional content of the students, and reconstruct a complete mathematical knowledge theory system, so that students can quickly know the entire mathematical analysis subject The main and side branches in the middle school help students build clear learning goals. In addition, the close connection between the knowledge points of teaching theory can help students learn by analogy in the learning process, deepen their understanding of each knowledge point, and help students consolidate their basic mathematical knowledge. Finally, in the daily teaching process, teachers should also encourage students to continuously discover, analyze and solve problems during the learning process, fully mobilize students' subjective initiative in learning, cultivate students' correct approach to mathematics problems, and let students learn mathematics. Thinking more flexible.

4. Conclusion

In the traditional teaching of "mathematical analysis" in colleges and universities, there is a teaching problem of "emphasizing theory and neglecting application". The too rigid teaching method obliterates the innovative thinking ability of students. Therefore, in order to enhance students' innovative ability, teachers should combine the training model of innovative talents, make appropriate adjustments to the teaching content and teaching methods according to the actual learning needs of students, construct a complete theoretical framework of mathematical knowledge, and deepen the connection between various theories, In order to enhance students' interest in learning, maximize their subjective initiative in learning, and cultivate more outstanding mathematical talents with innovative abilities.

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