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ORIGINAL ARTICLE

Exploration of the Teaching Reform of "Advanced Algebra" Based on the Training of Applied Talents

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Abstract: Advanced algebra is a very important basic subject in mathematics majors in major universities. It is mainly characterized by abstract content and various concepts. This is why students generally report that it is difficult to get started with advanced algebra. Based on the core of training applied talents, universities and mathematics teachers are actively discussing the curriculum reform of advanced algebra. Based on the current situation of higher algebra teaching in colleges and universities, this article analyzes and discusses some measures of the reform of higher algebra teaching for the cultivation of applied talents in detail, in order to provide some new ideas for the reform of higher algebra courses.

Keywords: Application-oriented Talent Training; College Education; Advanced Algebra; Teaching Reform

With the rapid improvement of my country's overall strength, my country's higher education has gradually developed from elite education to popularized talents, with application-oriented talent training as the main educational goal. In this environment, major universities and various majors have Actively seeking teaching reform. Combining many years of advanced algebra teaching experience, the author first elaborates the current situation of advanced algebra teaching, and then explores the reform of advanced algebra teaching in colleges and universities based on the training goals of applied talents, hoping to train more applied mathematics professionals for the society and the country.

1. The current situation of higher algebra teaching in colleges and universities

1.1 Teaching objectives and teaching methods are relatively outdated

Because the content of higher algebra is complicated and abstract, students' learning pressure is relatively high. Teachers are influenced by traditional test-oriented education concepts. They tend to be conservative in the setting of teaching goals and teaching methods. This ignores the correctness to a certain extent. The exercise of students' innovative thinking mode has made it difficult for students to improve their learning efficiency. In addition, due to the limitations of specific hours and the expansion of school enrollment in recent years, advanced algebra is difficult to meet the requirements of modern teaching concepts in the actual teaching process. The overall classroom teaching atmosphere is too rigid and it is difficult for students to be in class. To truly feel the charm of advanced algebra, the enthusiasm for learning advanced algebra is naturally not very high.

1.2 Higher algebra teaching mode is relatively single

Judging from the analysis of the existing teaching situation, the traditional higher algebra teaching emphasizes the derivation of formula theorems and ignores the problems of the application of specific theoretical knowledge. The specific teaching mode appears to be relatively single, which causes the students to think slightly stiff and solve the problem. Ability is lacking. The main characteristic of the traditional higher algebra teaching model is that it pays attention to the calculation

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and proof of formula theorems, pays attention to the teaching of calculation skills and theoretical knowledge, but ignores the cultivation of students' innovative thinking ability. In addition, in the process of teaching advanced algebra, teachers' overall teaching methods are relatively backward, teachers have not jumped out of the original textbook content framework system, and the teaching process has not placed students in their due teaching subject status, personalized There is no way to talk about teaching methods.

1.3 The specific assessment method is not reasonable enough

With the development and renewal of educational concepts, many teachers have carried out some innovative reforms and attempts to the assessment methods of higher algebra. The more typical one is to increase the comprehensive assessment of students' usual grades and daily performance, but the specific assessment focus remains It is mainly based on the final examination questions, and the basic examination questions are just copies or repetitions of the textbook example questions. Although it can effectively examine the students' basic knowledge mastery, they cannot further assess the students' creative thinking ability and the flexibility of specific theoretical knowledge. Use ability. Therefore, this assessment method is more like a change in test-oriented education. It has not fundamentally changed and improved, and it has lost the essence of learning advanced algebra.

2. Effective measures for training applied talents in higher algebra teaching reform

2.1 Improve the teaching methods and teaching methods of advanced algebra

First of all, understand the actual situation of students in detail, starting from applied talent training strategies, combined with the current teaching situation, cultivate students' ability to use advanced algebra knowledge to solve practical problems, and enhance students' enthusiasm for learning through the combination of practice and theory. Secondly, in the actual teaching process, the content of textbooks and teaching materials should be intensively explained to improve the professional level of teachers. In the boring theoretical teaching, use interesting content that matches the teaching content to increase the classroom teaching atmosphere, so that students can go deep without knowing it. Understand the relationship between various theoretical theorems and deepen students' ability of knowledge theory. Finally, teachers should adhere to the teaching methods of inquiry, heuristic and discussion, return the main body of teaching to students, and leave enough time for students to think, summarize, and discuss, and guide students to think independently and solve problems. The ability to combine innovative teaching methods with traditional teaching methods, and comprehensively improve the efficiency of advanced algebra teaching.

2.2 Add teaching experiment courses to enhance students' innovative and practical ability

The standard for training applied talents is to flexibly apply the knowledge they have learned to solve practical problems. This requires the initiative to create a practical environment in the teaching process to enhance students' practical ability. Therefore, adding teaching experiment courses to traditional teaching methods is a very effective way. There are various specific implementation methods, and the following characteristics should be followed. First, increase the application of computer software and other modern educational methods, and use mathematical software and mathematical models to increase the effectiveness of teaching experiment courses. Second, select experimental topics of appropriate difficulty, and select topics based on students' learning progress and learning foundation to ensure the effectiveness of teaching experimental courses. Third, the teaching experiment courses should be separated from the traditional teaching, and independent courses should be established to increase the experiment hours.

3. Conclusion

With the development of society and the renewal of educational concepts, major colleges and universities and related teachers are actively discussing the curriculum reform of higher algebra. Teachers should change the traditional teaching concepts and teaching methods, increase the teaching content of experimental courses, improve students' knowledge application ability, and further improve the assessment methods so that students can clarify their learning goals and cultivate more applied professional mathematics talents for the country and society.

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