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Exploration on the construction of innovative mathematics and Applied Mathematics Specialty

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Abstract: *the specialty of mathematics and applied mathematics has a wide range of uses. If you want to learn the specialty well, you need to create a suitable classroom atmosphere to help students improve their innovation ability and make students study efficiently in a relaxed environment. This article focuses on the construction of innovative mathematics and applied mathematics, hoping to provide some reference for relevant education industries.*

Keywords: *innovative; Mathematics and applied mathematics; reflection*

The popularization rate of higher education is constantly improving, but there will be many deficiencies in the teaching form of proofreading Applied Mathematics in some universities and colleges, which will affect the employment opportunities of students. Therefore, college mathematics teachers need to conduct in-depth research and Discussion on the current development of mathematics. Constantly reform their own teaching mode, help students have more knowledge and skills, let the society obtain more comprehensive talents with professional mathematics knowledge, and let students better meet the requirements of social development.

1. Current situation of mathematics and Applied Mathematics

1.1. Inaccurate teaching positioning

The enrollment brochures of Applied Mathematics provided by colleges and universities contain huge contents, and the positioning of the major is not accurate enough. As a result, students need to master a lot of knowledge during their study. The scope of these knowledge is relatively broad, but students' understanding of knowledge is not detailed enough. Although it is good for students to learn more knowledge and understand relevant theories, however, it will also increase the amount of learning of students. At the same time, it is not easy for college students to have an accurate positioning of their major during job hunting, resulting in too vague job hunting. Moreover, some students majoring in mathematics and applied mathematics do not understand the essential attributes of the major, which affects the difficulty of students in finding a job, and it will also make it difficult for students to find a suitable job. Some universities have few teachers and some teachers have poor professional skills. They can only teach professional theory, but can not guide students to carry out professional practice. This teaching method that separates teaching from practice will affect students' practical ability in the process of follow-up practice. Hinder the progress of industry education integration. When some universities set up courses, they did not highlight the advantages and characteristics of their majors, resulting in the duplication of most contents, which increases the workload of teachers, wastes the time of teachers and students, and makes insufficient use of existing teaching resources, affecting the future development of students[1] .

1.2. Students' learning effectiveness is not high

According to the analysis of previous research results, we find that many students majoring in Applied Mathematics will find the same problem after completing certain learning tasks, that is, the time invested by students in learning and the mismatch between the energy consumed by students and the learning effect obtained by students. The effectiveness of students' learning can not be guaranteed. Some universities even offer too many theoretical courses, and when choosing the teaching content, they do not combine with the current social situation, but choose the content that focuses more on examination oriented education, which will lead to the inconsistency between students' development requirements and students' learning content. The content of teachers' knowledge is too old, and the

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teaching methods can not meet the learning progress of existing students. Students' ability to accept teachers' teaching mode is poor, which leads to students' inability to understand the core points of knowledge during learning mathematics knowledge, and students' interest in learning mathematics knowledge will be greatly reduced, resulting in the impact of students' learning effect. It is not conducive to the cultivation of innovation consciousness.

1.3. Practical teaching needs to be optimized

Although many universities focus their teaching on improving students' practical application ability, many teachers do not fully understand this, and do not teach practical courses according to the arrangement of the outline in the daily teaching process, resulting in the improvement of students' learning ability, but students lack practical experience, And some teachers do not pay attention to practical teaching. Their own teaching ability is relatively low, which will also affect the quality of practical teaching, the teaching quality of teachers will be affected, and the teaching efficiency can not meet the expectations. For the talents majoring in Applied Mathematics, only by strengthening their training, highlighting the word "application" in the teaching process[2], so that students' knowledge in books can be applied to the practice process, and helping students master more application skills of mathematical knowledge, can students improve their understanding of book knowledge, It can also lay a good foundation for the future society, improve the role and value of education, and let students have more ability to realize their life value. Some schools cherish themselves and lack motivation to cooperate with other schools and enterprises. Therefore, there will always be various omissions in talent training. If the school's teaching methods are not improved and the talent training mode cannot be innovated, it will affect the integration of production and education of College Mathematics and applied mathematics.

1.4. Too detailed division of disciplines

The setting of some universities is too professional, and the curriculum division of mathematics and applied mathematics is too detailed, which makes it difficult for students to feel the diversity of knowledge structure in the learning process. But the subject characteristics of applied mathematics are also difficult to show. There are too many professional courses and too many compulsory courses in some universities, which is not conducive to broadening students' comprehensive quality and improving students' cognition of mathematical knowledge.

2. Thoughts on constructing innovative mathematics and Applied Mathematics Specialty

Traditional education pays too much attention to the teaching of knowledge. Teachers hope to help students remember relevant theoretical knowledge through their own explanation, and this educational concept also plays a major role in the educational process of University. Most of the educational content of the school is to hope that students can learn from the knowledge heritage left by their predecessors. At present, with the continuous changes of the times and the rapid change of knowledge, the traditional knowledge "depreciates" rapidly, which is difficult to adapt to the future. This requires the school to constantly innovate the training mode for students.

To cultivate college students majoring in mathematics and applied mathematics, we need to help them have innovative consciousness and improve their creative ability through the cultivation of innovative consciousness, so as to better help colleges and universities carry out innovative education. At the same time, schools can also build innovative education system engineering and optimize the process of innovative education. Colleges and universities not only need to let students master basic knowledge, but also need to cultivate students' ability to independently use these knowledge. When educating students, they should transform students into innovative talents, meet the needs of society for talents, broaden their professional caliber and help their college students better adapt to the society.

Schools should take the training of creative talents majoring in mathematics and applied mathematics as the educational goal, develop innovative education, integrate with modern and more advanced education and teaching methods when training students, and improve the traditional duck feeding teaching methods. Teachers should improve the frequency of interactive teaching methods in the teaching process, In class, introduce more problems that can be deeply reflected on, let students have their own thinking time, cultivate students' good habit of independent thinking, and encourage students to innovate boldly in the process of continuous practice and application of mathematics. At the

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same time, teachers should respect the establishment of students' independent spirit in the process of teaching. Help students develop their subjective initiative.

During the study of students majoring in mathematics and applied mathematics, there are many problems that need to be explored by students and school teachers. There are still some deficiencies in the modern training mode of students' innovative ability of mathematics and applied mathematics. The teaching mode of many courses lacks targeted cultivation for students, resulting in that students are only an audience in the classroom, The failure to cultivate students' character during the university will affect the implementation and implementation of the subsequent innovative talent training mode. Therefore, the university should strive to adapt to the current education and teaching form, break away from the examination oriented education mode, actively improve its own teaching methods, change to the direction of quality education, and cultivate compound talents, In order to better serve the society. It should be noted that in the education and teaching of talents, we must remember the word "innovation". Colleges and universities should actively integrate with the times, constantly improve the education system and cultivate more comprehensive talents with the development of science and technology and the needs of social reform. Strengthen the cultivation of human capital and intellectual capital. Only when students have a certain sense of innovation, can they continuously solve problems, improve their ability, promote the professionalism of mathematics and applied mathematics students from multiple directions, and help students' innovation ability step into a new stage[3].

3. Reform and development strategy of mathematics and Applied Mathematics

3.1. Precision positioning specialty

To promote the healthy development of students majoring in mathematics and applied mathematics, the school needs to constantly optimize the teaching process. Teachers need to deepen their understanding of the specialty, have a clearer positioning of the specialty, and help students understand the key points they should learn in the daily teaching process. The school should also give some employment guidance to let students know the overall development in the future and help students understand the occupations that can be engaged in this major. According to the personal characteristics of students, we should train students more concretely and help students give full play to their advantages to the greatest extent in the process of mathematics learning. University teachers should also actively encourage students, let students devote themselves to certain social practice during college, help students exercise their mathematical ability in activities and clarify their advantages. In this way, It can strengthen students' cognition of mathematical knowledge and cultivate the consciousness of using mathematical knowledge. At the same time, accurate positioning of mathematics requires teachers to choose more targeted teaching materials among the teaching materials, and select teaching contents and teaching methods in combination with the current teaching environment, so as to promote the improvement of teachers' overall teaching effect and better protect students' learning results. The precise positioning of applied mathematics can also help universities and colleges move towards professional reform and ensure the smooth implementation of subsequent reform contents.

3.2. Optimize existing curriculum

When students majoring in mathematics study, we can find that the curriculum is closely related to students' achievements. Only a scientific and reasonable curriculum can help universities and schools carry out educational reform. In the past, the content of applied mathematics learning mainly included professional compulsory courses and elective courses. Through the implementation of teaching reform, some universities and colleges turned the traditional compulsory courses into compulsory courses, and transformed those compulsory courses into elective courses through in-depth research and combined with the previous teaching experience of students, Students can learn more personalized, students' learning is also more focused, and teachers' teaching ability has been improved to some extent. Schools can also set up some mathematics courses that can improve students' overall application ability, so as to better start from the teaching effect and improve the teaching quality of schools[4].

The university campus can also cooperate with other enterprises to find enterprises that use mathematical knowledge and establish a joint training base. Students can practice in the enterprise during the university to deepen their understanding of applied mathematical knowledge. Improve their ability to use mathematical knowledge. Through this form of training, students can improve their professionalism, and students can better meet the needs of enterprises after graduation. Schools can

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send mathematics talents to enterprises, and enterprises can also reduce the time for talent training. The school can also select those students who have a deep understanding of mathematics knowledge by setting up an applied mathematics competition, give them some technical guidance and help students broaden their knowledge. If you want to give students more comprehensive guidance, the school can also invite some professional personnel to come to the school to train students in the application methods of Applied Mathematics. Through this form, students' cognition of mathematics and applied mathematics will be clearer and students' cognition will be deepened.

3.3. Guide students to view the learning process correctly

In students' learning career, if you want to improve students' academic performance, you need not only students' own efforts, but also teachers' help. What has the greatest impact on students' learning is their personal learning attitude. Therefore, during university teaching, mathematics teachers need to actively guide students, help students master relevant basic knowledge, so that students have a solid mathematical foundation, and students can solve problems on this basis. In the process of problem solving, teachers can also help students develop a good mathematical thinking mode and let students have more superb problem-solving ability, this way can promote students' subsequent mathematics learning career. Teachers have the responsibility of teaching and educating people. Therefore, in the process of daily teaching, teachers should not only help students master the necessary knowledge, but also give students some help to help students solve their difficulties in life and make students' learning process more efficient, Make students' campus life easier.

3.4. Optimize teaching methods

In today's society, various teaching methods emerge one after another, and the previous cramming classroom has been unable to meet the requirements for contemporary students. Teachers' existing teaching methods should be continuously optimized and in line with the times, learn the most advanced teaching forms, and promote the improvement of teachers' teaching quality. During teachers' teaching, mathematics teachers need to use the teaching methods that inspire the form of discussion to cultivate students through this form. Independent thinking mode can improve students' thinking of solving mathematical problems and help students' thinking Dimension is more divergent, improve students' mathematical literacy, exercise students' mathematical problem-solving ability, help students form a good habit of analyzing and solving problems through mathematics teaching, and stimulate students' enthusiasm to participate in mathematics learning. During lesson preparation, teachers need to design the course content and the questions raised in class to understand their own teaching priorities. Focus on Teaching in the classroom, and teachers can also design teaching links to let students further think and ask questions, let students participate in the process of mathematics learning, and help students continuously improve their problem-solving skills. Change students' inherent cognition of mathematics through teachers' teaching form.

3.5. Pay equal attention to theory teaching and Application Teaching

Teachers need to have a clear understanding of Applied Mathematics. Applied mathematics not only refers to the theory of books, but also affected by the application of theoretical knowledge. Therefore, in the teaching process, teachers need to integrate theoretical knowledge with practice, and pay equal attention to theoretical teaching and practical teaching. First, students need to understand a certain theoretical basis, secondly, apply students' book theory to practice, and highlight the "application" characteristic of applied teaching specialty. Only the application talents with innovative consciousness and certain innovative spirit can improve their social competitiveness and become more smooth in the process of employment in the future. This requires teachers majoring in Applied Mathematics to strengthen practical teaching, pay attention to the cultivation of students' practical application ability, improve students' own innovation ability, and promote the transformation of students majoring in Applied Mathematics towards comprehensive and applied talents[5] .

4. Summary

This article ponders and explores the construction of innovative mathematics and Applied Mathematics Specialty to help you understand the current situation of mathematics and Applied Mathematics Specialty, including the problems of inaccurate teaching positioning, low learning

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effectiveness of students, optimization of practical teaching and too detailed division of specialty, and puts forward the thinking of constructing innovative mathematics and Applied Mathematics Specialty. This paper puts forward the reform and development strategies of mathematics and applied mathematics, including accurate positioning, optimizing the existing curriculum, guiding students to correctly view the learning process, optimizing teaching methods, and paying equal attention to theoretical teaching and applied teaching.

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