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Application of Collaborative Education in Higher Mathematics

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Abstracts: At present, China is in the period of economic and industrial transformation and upgrading. There is an urgent need for talent inflow from all aspects to help inject new vitality into China's economy and industry. As the main position of talent training, colleges and universities should cultivate new talents to meet the needs of social talents, help students complete employment and change the current situation of unemployment after graduation. Collaborative education is to complete the education and employment of students from the four aspects of government, enterprises, schools and students, and help complete the collaborative education mechanism of innovation and entrepreneurship education in colleges and universities

Keywords: Collaborative Education; Advanced Mathematics; Collaborative Education Application

1. Introduction

In the social environment of advocating comprehensive education, collaborative education is bred. It is the only way for the sustainable development of innovation and entrepreneurship education in Colleges and universities. College mathematics curriculum has specific value on the premise of collaborative education. College higher mathematics has a positive influence on cultivating students' literacy, innovative thinking, innovative ability and practical ability. From the rich content of mathematics curriculum to the combination of mathematical knowledge and value, higher mathematics can cultivate students' tenacity while solving mathematical problems to maximize education.

2. Exploration and analysis on the ideological and political theory of higher mathematics curriculum

The ideological and political research of mathematics curriculum in universities is still in the primary stage. The curriculum content and ideological and political content are combined with each other, so as to tap the ideological and political resources contained in higher mathematics curriculum, combine these ideological and political contents with mathematics teaching curriculum content, and cultivate students' ideological and political ideas. At present, most of the ideological and political situations in college mathematics courses are as follows: 1. Focusing on the construction of higher mathematics ideological and political system. In the Thinking and Practice of College Mathematics "Ideological and Political Curriculum ", Zheng Yi, through the analysis of the particularity of higher mathematics courses, puts forward that college mathematics courses should improve college students' cognition of "ideological and political curriculum", and mathematics teachers should deeply extract the content of "ideological and political curriculum" in higher mathematics teaching, and bring it into the mathematics curriculum system; 2. Focusing on specific case analysis, most university mathematics teachers will start from the micro. For example, Pan Lulu and others put forward the logical framework of science and engineering teachers' practical curriculum ideology and politics in the Logic and Methods of Practical Ideological and Political Curriculum of Science and Engineering Courses -- Taking the Concavity and Convexity of Higher Mathematics Function Curve as An Example, telling Chinese stories and transmitting Chinese voice based on the humanistic results of scientific and technological activities.

3. Curriculum design and application of higher mathematics

3.1 Characteristics and training requirements of college higher mathematics curriculum

College mathematics is a basic compulsory course of higher education. As a discipline, it has high abstraction, strict logic and wide application. Its highly abstract nature makes most college students fear mathematics. Strict logical thinking makes it more difficult for students to understand higher mathematics. However, the wide application of mathematics makes higher mathematics an important course. Through various training of mathematics teaching, college students should be better able to help students learn and use mathematics knowledge to solve practical problems after being trained in good mathematical thinking and mathematical logic.

3.2 Combination of mathematical knowledge and social value

While ensuring the ideological and political content of mathematics curriculum, we should uniformly plan the role of college mathematics in ideological and political theory and ideology, optimize the curriculum of higher mathematics, and put the ideological and political content throughout the teaching of college mathematics, in order to enrich the college mathematics curriculum with the ideological and political content, and promote the construction of the mathematics curriculum system.

Colleges and universities are an important talent hub in society. Young people are in a key stage of life. It is the best time to learn knowledge and skills and accept new knowledge and ideas. The party and the state have high hopes for young people. Young people are full of vitality and study hard. The teaching of colleges and universities should also conform to the vitality of young people and deliver new scientific and technological innovative talents to the society. Colleges and universities should establish the ideological and political curriculum system of higher mathematics for students. The main task of college mathematics classroom is to impart knowledge to college students, but just imparting mathematical knowledge to students is not enough. We should excavate the social values contained in college mathematics teaching content and introduce them into the explanation process of mathematical knowledge. In the mathematics education system, we should stimulate students' autonomous learning ability and interest in mathematics knowledge. For example, when introducing the limit of series, we can introduce the circle cutting technique of Liu Hui, a great mathematician in ancient China, so as to stimulate students' national pride while students lament the charm and magic of ancient mathematical thought; When introducing the element method of definite integral, the definition of definite integral is given through segmentation, approximate summation and taking limit. In this process, students can realize that the research of problems needs careful analysis and in-depth layers, and the solution of any problem needs planning and careful consideration. In the study of mathematics, the firm spirit of seeking knowledge will be moistened into students' hearts like spring breeze and drizzle, so that students can realize that if they want to learn knowledge reliably and have a long-term life. They must settle down to consolidate their own mathematical knowledge and have good ideological and moral character.

3.3 Cultivation of thinking and ability in higher mathematics course

The abstract, logical and extensive nature of college mathematics curriculum leads to the need for students to have a certain mathematical thinking in mathematics learning. When studying the course of higher mathematics, college students should revise their way of thinking and convert their normal way of thinking into mathematical way of thinking. When students study mathematics, they should improve their mathematical logical thinking ability. Its types are as follows: thinking method of induction and analogy, divergent and convergent thinking, reverse thinking and creative thinking. According to the characteristics of different ways of thinking, we can carry out certain mathematical thinking training to help students understand mathematical problems more easily, have an in-depth understanding of mathematical knowledge, and be able to draw inferences from one instance to solve most of the same types of mathematical problems. Such thinking ability training is conducive to improving students' mastery of mathematical knowledge and helping students establish a mathematical knowledge system, and getting a sense of achievement in mathematics learning, so that students love mathematics and learn

mathematics knowledge more.

3.4 Fully tapping students' own advantages and teaching students according to their aptitude

Starting from the three parties of government, enterprise and school, the school should make good use of the advantages of the three parties to realize diversified teaching for students, teach students according to their aptitude, and help students find their own strengths, so as to realize accurate talent positioning for students, stimulate students' potential and help students realize their self-worth. Higher mathematics has different characteristics in various colleges and universities. For example, most students in the software college study the development or application of various computer software. As an important basic discipline, students in the software college should learn more about mathematics and provide basic knowledge for students' software operation, code programming and other technologies. Teaching students in accordance with their aptitude requires mathematics teachers in colleges and universities to "know themselves and the enemy", not only to master the prelude of students' mathematics learning, but also to understand the needs of social enterprises for talents.

3.5 Strengthening responsibility and mission in teaching activities

The inquiry process of mathematics is an important way of higher mathematics learning. In the process of mathematical exploration, middle school students can deeply understand the concept and thinking mode of mathematical knowledge, that is, arouse students' interest in the discovery experience of major mathematical laws, so as to obtain the sense of achievement generated by participating in the progress process of mathematics, that is, test students' mathematical thinking ability, experience the fun of mathematical creation, and cultivate students' mathematical exploration ability and exploration spirit. Therefore, in the teaching of higher mathematics, we can introduce the exploration of the laws of mathematical teaching materials, appreciate the unremitting exploration spirit and innovation spirit of mathematical masters in the process of discovering mathematical laws, and deeply explain the origin of mathematical laws for students, which not only stimulates students' interest in learning mathematics, but also engraves a profound mathematical exploration spirit for students to study mathematics in the future. Through network platforms, online courses and other forms, improve students' interest in higher mathematics learning, integrate mathematicians' spirit of daring to explore new things into the classroom, and unremittingly study mathematics classroom teaching strategies, in order to stimulate students' enthusiasm for mathematics learning, take students as the main body in mathematics teaching activities, and encourage students to explore mathematics knowledge independently. The different dimensions of knowledge and skills, processes and methods, emotional attitudes and values are implemented by mathematical means, so as to effectively make an important change from "taking knowledge structure as the core" to "taking comprehensive education as the core", pay attention to the extensive application of mathematical knowledge in national defense, industry, economy and other fields, and feel the pride of "great country style", which enhance students' sense of social responsibility and mission, and cultivate students' patriotism.

4. Conclusion

As a compulsory course of the university, college mathematics carries out collaborative education of mathematics courses, cultivates students' Ideological and political concepts, and establishes correct social values for college students, which is conducive to students' learning innovative knowledge, helps enterprises cultivate new talents, enterprises' transformation and development, and promotes industrial upgrading. It can provide talents for the society, and solve the current situation of college students' unemployment after graduation, in order to promote colleges and universities to establish an innovative teaching system, improve the quality of social talents and promote social progress as a whole.

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