Asia-SAME Transactions on Engineering Sciences, ISSN: 2377-8970
ISBN: 978-1-948012-15-7 https://doi.org/10.7508/aste.01.2020.185.189

Mathematical Modeling in Higher Vocational Colleges to Optimize Economic Questions

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From 2020 International Conference on Engineering Research, Beijing, China. 12-14 April 2020, Organized by University of Science and Technology Beijing and International Association of Management Science and Engineering Technology (IAMSET).

Abstract: With the rapid development of our country's economy, the society now requires more and more talents, which puts forward stricter demands for education. As an important bridge between mathematics and reality, mathematical modeling has the ability to widely cultivate students' mathematical application, and optimization problem occupies a pivotal position in the process of mathematical modeling. With the rapid development of science and technology, people pay more and more attention to the application of mathematics, which makes the basic education of mathematics face great challenges. Traditional mathematics education only emphasizes the study of theory and knowledge, but neglects the ability of students to solve practical problems by using mathematics knowledge. With the continuous change of market demand, the relationship between the supply and demand of various resources and the change of price is changing rapidly, so it is difficult to find the economic law. The mathematical modeling method can be said to solve the practical application problems and economic problems in the current high number, which is much less difficult than the traditional method.

Keywords: Mathematical modeling, higher vocational mathematics, economics.

Introduction

Mathematical modeling has become an important breakthrough and core content in the development of modern applied mathematics. Economic questions account for a considerable proportion in higher vocational mathematical modeling [1]. Mathematics comes from life and will eventually be applied to life. Mathematical modeling can be programmed into the category of applied mathematics. It usually solves practical problems directly derived from various fields of life after preliminary simplification and processing. The main idea is to solve complicated problems in real life by establishing mathematical models [2]. In the past, the teaching of advanced mathematics was boring. Students only learned relevant theorems and proofs mechanically, but their cognition of its concrete meaning was abstract. The

mathematical modeling method can be said to be much less difficult than the traditional method to solve the practical application problems and new question types in high numbers. Higher mathematics, which is the basis of all science and engineering calculations, is a good starting point for educational reform aimed at training new talents [4]. In order to adapt to the development of the times and scientific progress, the mathematics education in middle schools needs to be reformed and must be reformed. Mathematics modeling is precisely under this kind of educational background, in order to bring fresh blood to modern mathematics education, a curriculum form and mathematics teaching mode developed gradually has been established [5]. According to the development of the times, the school's education model for students is also changing. It is very meaningful for students to continuously learn new methods for improving students' creativity and developing students' innovative ability [6]. With the development of modern technology, mathematical modeling ideas and corresponding software have gradually entered the public's field of vision.

Mathematical modeling methods and analysis

Mathematical models mainly use theoretical knowledge and methods in mathematics and mathematical language to solve practical problems often encountered in mathematics, that is, mathematical modeling method is to transform problems encountered in practice into mathematical problems. Higher mathematics is the most basic and important course for science and engineering students to learn in their higher education. All basic operations of science and engineering have the shadow of higher mathematics. We can find out whether it is suitable for mathematical modeling in college, postgraduate or middle school. The application of mathematical modeling method is equivalent to injecting fresh blood into mathematical problem-solving methods, making the solutions to some problems in higher vocational mathematics more flexible and practical, encouraging students to solve problems in mathematics independently, and stimulating students' creativity [7]. Even if some students are backward, they have raised their confidence in learning higher mathematics. However, self-study of higher mathematics is even more boring, which results in students who are motivated to advance gradually giving up the study of higher mathematics. How to abstract practical problems into mathematical models is an important part of mathematical modeling and the key to the smooth development of mathematical modeling activities. Without this step, mathematical modeling cannot be carried out.

The modeling methods mainly involved in the process of model establishment include relational analysis, image analysis, quantitative relation, mathematical induction, schematic diagram analysis, etc., and then parameters are calculated by using undetermined coefficient method. Through mathematical modeling and mathematical experiments, students can more vividly understand what they have learned, at the same time reduce the difficulty of learning knowledge, so that students can relatively easily

understand and master these knowledge, and the boring classroom becomes vivid. Model is the framework for people to know something, and it is the representation form of things and processes. It can be the imitation and simulation of real objects, and it is the real objects that exist. Through mathematical modeling, abstract mathematical concepts can be displayed in a novel way by using mathematical software as a medium, so that students can generate novelty, thus enabling students to actively use these methods to explore and make students feel the fun of learning mathematics. The application of mathematical modeling method in solving mathematical problems in higher vocational colleges has concretized and visualized the written definition, improved the speed and accuracy of solving mathematical problems, provided theoretical basis for some practical mathematical problems in life, concretized some abstract mathematical problems, and solved some difficult mathematical problems.

Ideas and strategies for optimizing question types of economic issues

As one of the key subjects, mathematics not only occupies an important position in the learning of higher vocational knowledge, but also plays a very important role in solving practical problems. Many concepts and theorems in advanced mathematics cannot be fully understood by students through explanation. Since the competition results depend on the choices of all players, each player tries to predict the possible choices of others to determine his best countermeasures. As more and more practical problems are converted into mathematical problems and added to higher vocational mathematics textbooks, some traditional mathematical problems can no longer deal with these problems. The application of mathematical modeling methods not only improves the traditional problem-solving ideas, improves the speed and accuracy of problem-solving, but also increases students' learning pleasure in mathematics [8]. In higher mathematics, the proportion of case teaching should not be too large, otherwise it will affect the normal teaching order, so it is necessary to reasonably consider the distribution of case teaching. With the continuous changes in market demand, the relationship between the supply and demand of various resources and the changes in prices is changing rapidly. Economic laws are difficult to find, economic risks are great, and economic benefits cannot be improved. Probability and statistics have solved this problem to a great extent.

Judging from the development of mathematical modeling in secondary schools, both schools and teachers do not pay enough attention to the application of mathematical modeling and the development of students. Schools should regularly train teachers in mathematical modeling, so that teachers can have a correct understanding of the connotation of mathematical modeling, the application of mathematical modeling and mathematical modeling methods, and master the whole process of mathematical modeling activities and the steps of solving problems by mathematical modeling methods [9]. Mathematical modeling methods have

not only been used to solve the dead knowledge points in higher vocational mathematics textbooks, but also have been widely used in practical applications. Through the analysis and research of various economic data, we can constantly sum up the laws and constantly adjust the scheme to change the mode, thus achieving greater economic benefits and adapting to market demand. When the teacher explained the definition and geometric meaning of definite integral, according to the traditional method, it is to solve the area of trapezoid with curved edges, and then to repeat it repeatedly with the methods of division, substitution, summation and limit, approaching infinity, and finally to give the definition of definite integral [10]. Applying the methods of mathematical modeling and mathematical experiments to the teaching of higher mathematics will make the difficulty of this problem drop by times. In the process of continuous improvement of education, it is of great significance to strengthen the research of mathematical modeling methods in solving mathematical problems in higher vocational colleges to improve the teaching level of mathematics teachers and the ability of students to solve problems.

Conclusion

The convenience and accuracy brought by mathematical modeling in solving problems in mathematics, and the application of mathematical modeling in solving mathematical problems is still deepening and refining under the condition of the continuous development of education and the increasing attention of the state to education. At present, there are more and more calls for compound talents. Under this background, the teaching reform of higher mathematics is imperative. With the continuous changes in market demand, the relationship between the supply and demand of various resources and the changes in prices is changing rapidly. Economic laws are difficult to find, economic risks are great, and economic benefits cannot be improved. Mathematical models play the functions of information processing, solving calculation, problem analysis and problem solving in the economic field. How to abstract practical problems into mathematical models is an important part of mathematical modeling and the key to the smooth development of mathematical modeling activities. Without this step, mathematical modeling cannot be carried out. The application of mathematical modeling method in solving mathematical problems in Higher Vocational Colleges makes the written definitions concrete and visualized, improves the speed and accuracy of understanding problems, and provides theoretical basis for some practical mathematical problems in life. Teachers should take the initiative to change the responsibility of innovation, through the mathematical modeling and mathematical experiments into the teaching of higher mathematics, and strive to cultivate the compound talents in the new era.

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