



Exploration of Higher Mathematics Teaching Strategies of Vocational Undergraduate Education

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Abstract: The pilots of undergraduate major of higher vocational colleges are the transforms of vocational education to the socio-economic development, which advance sound development for vocational education, in order to response students' acceptance of higher level talent training plan. Under the vocational undergraduate curriculum system, Higher Mathematics as one of the public basic courses, the teaching methods should be adjusted promptly and used to teach students in accordance with their aptitudes, as a fundamental role in Vocational Undergraduate Education. Combining with the teaching characteristics of vocational undergraduate education, this paper applied several teaching strategies of higher mathematics to adjust vocational undergraduate course system.

Keywords: Vocational Undergraduate Education; Higher Mathematics; Teaching Strategies

Vocational undergraduate education is going by a new requirement of the current economic and technological development level for higher vocational talents training level, and it satisfies the development of higher vocational education and the establishment of a perfect application-oriented talent training system. It requires that both theoretical teaching and practical teaching should be paid equal attention in the course teaching, and practical teaching should be highlighted. As a public basic course of vocational undergraduate course system, Higher Mathematics should highlight the "applicability" of Mathematics and cultivate students' application consciousness and ability in the teaching process. Combining with the teaching characteristics of Vocational undergraduate education, this paper put forward the following several higher mathematics teaching strategies.

1. Intensive teaching in concept, simplifying theory, focusing on application.

The research of middle school Mathematics is mainly on limited problems, however, the main contents of Higher Mathematics are calculus, which mainly study infinite problems. In the stage of vocational undergraduate education, students should understand and get used to understand the strict mathematical definitions. On the basis of professional research, the physical background, professional concepts and mathematical modeling model should be added properly; especially understanding of mathematical concepts. theorems can reduce the proof of mathematical theorems and pay attention to the application of Mathematics in practice or specialty. If permitted, we can set up a case bank of applying Mathematics, and put forward case analysis in Mathematics teaching, and use the teaching modes of group discussion by teacher guidance. it may be mixed various teaching modes with cultivating students' awareness and abilities of applying Mathematics effectively.

2. Introduce the history of Mathematics and use multimedia teaching demonstration to break through the teaching difficulties.

In the Higher Mathematics curriculum system, some knowledge of the physical background or the history of mathematical development and mathematicians' are added in it, we can use multimedia demonstration to arouse

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students' interest and love in them. For improper integral, space analytic geometry, multiple integral, curve integral, surface integral and other difficult contents, it should be displayed by using multimedia at the right time, and paid attention to the combination of number and shape, which can not only be intuitive and three-dimensional, but also explain the content clearly and deepen students' understanding of knowledge, effectively enhancing students' interest in learning Mathematics.

3. Taking the application problems as the breakthrough to cultivate students' awareness of using mathematical modeling methods.

We should combine the Higher Mathematics teaching materials which have strong applicability and take the application problems as a breakthrough in the teaching process. We integrate the ideology of mathematical modeling with the problem-solving, taking the modeling as the main "tongs". In Mathematics learning, we should make more use of application problems to enhance students' interest in solving practical problems by using Mathematics, so that students can realize the value of learning Mathematics and regard learning it as an interest. Since the thinking method of mathematical modeling is not easy for students to master in the early stage of Mathematics teaching, the selected examples should be close to the students' major and the reality of life. It cannot be separated from the content of teaching materials.

4. Combining theory with practice, use of modeling experiments, participation in mathematical modeling competitions.

In the process of Higher Mathematics teaching, teachers should carry out thematic modeling activities according to the types of mathematical knowledge step by step, so that students can experience Mathematics in practice, and learn to use mathematics in activities, so as to truly realize the change from traditional teacher-centered to student-centered.

We optimize the original traditional teaching methods, so that they can refine the main mathematical quantitative relationship, ignore the secondary factors in mathematics and build mathematical models independently. On the other hand, students are encouraged to participate in all kinds of mathematical modeling competitions to promote learning and teaching, so that everyone can participate and model. Therefore, Not only the development of students' intelligence is in the class, but also it makes students' thought finding and exploring problems independently. We hope that Mathematics can help students enhancing conciseness of applying it, in order to serve Vocational Undergraduate Education in this way.

In a word, the theory of Higher Mathematics should be integrated with various majors and characteristics of the curriculum according to the construction of a scientific Higher Mathematics curriculum system. We can succeed in enhancing students' awareness of using Mathematics by it.

References

1. HAN Changri, YANG Xiuying, Thinking and Exploration of Vocational Undergraduate Education[J]. Journal of Hainan Normal University (Natural Science) ,2020,33(2).238-242.
2. WU Xian-fu, CHEN Pan, The Connotation and School — running Subject of Professional Undergraduate Education[J]. Journal of Sichuan College of Education, 2011, 27(9).16-19.
3. ZHANG Hai-yan, Teaching and Innovation of Mathematical Modeling in Application-oriented Undergraduate University[J], Journal of Chongqing University of Science and Technology, 2010,12(3).196-198.