

Developing Stratified Teaching to Improve Teaching Quality

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Abstract: At present, China's higher education has entered the stage of popularization, and students' mathematical foundations vary greatly, which brings many objective problems to the teaching work. To carry out the stratified teaching in mathematics education, students can be taught in accordance with their aptitude. This paper discusses the means and methods of the stratified teaching in mathematics education, and has achieved good results. The stratified teaching can improve the teaching of mathematics at present, and it is an effective way to increase the quality of teaching.

1. Introduction

Advanced Mathematics is one of the basic courses in engineering colleges and universities, and plays an important role in the cultivation of talents. Therefore, the teaching effect of advanced mathematics course is directly related to the teaching quality of our school. With the reform of the education system, the higher education of our country is from elite education to the mass education. Concomitantly, the size and structure of the students enrolled in our school has changed a lot, students gradually widened the gap, these changes have brought many objective problems to teaching and learning^[1,2,3].

2. Necessity of Stratified Teaching

2.1. Social Demand for Education

In the rapid development of science and technology age, the society needs the technical personnel that both can quickly accept new knowledge and technology and application in the professional engineering, also need the scientific research talents that can study in-depth theoretical research. Therefore, the colleges and universities should not only have the popularization of education, but also the elite education, which also led to the mathematical basis of personnel requirements are different. At present, the required mathematical quality for the students of different majors has been diversified and multi-level development trend.

2.2. Students' Demand for Education

With the college enrollment increases year after year, resulting in uneven level of students enrolled in mathematics and also college students learning objectives is to the professional oriented, often to the "useful" and "useless" to the theory, coupled with the personal interest of mathematics are not the same, these factors together makes students the internal demand of advanced Mathematics education formed a natural stratification. Because the student learning based and interest in learning more and more different, they concentrated in a large class, it is bound to teaching brings many contradictions.

In the teaching process, no matter what kind of teaching method teachers adopt, they can't satisfy every need, care for this and lose that. Either the students with good foundation "can't eat enough", or the students with poor foundation "can't eat out", the teachers can't take care of every levels students. Now, the students who "can't eat enough" hope that the school can provide them with more learning opportunities and lay a solid foundation for their further study in the future. At the same time, the students who "can't eat out" hope that the school will create good conditions for them to meet the basic requirements of teaching and pass the examination smoothly.

In order to solve these problems, many colleges and universities have begun to try the teaching of stratified teaching in the course of mathematics, and have made some achievements.

According to the actual situation of our school, we think that is necessary for implementation of the stratified teaching freshmen, in order to achieve on different students with different teaching methods and teaching requirements, so as to achieve the basic good and willing to learn the students to learn more, and the foundation is not very good students can also promote the meet the requirements of the basic teaching, to ensure that the training of qualified personnel.

3. Principle of Stratified Teaching

Stratified teaching is a teaching model for people-oriented, can teach the students in accordance with their aptitude. All students with the difference of foundation and abilities can get the ideal education and gain achievement in learning. Through different teaching methods, so that the students with poor foundations "finish eating" and ultimately achieve the basic requirements of teaching, and make the students with good foundation "eating well" and lay a solid foundation for their further study. Therefore, stratified teaching is not to give up the basis of poor students, and on the contrary, it is to take care of their learning, so that they can successfully meet the standards of personnel training.

Building a good learning platform for students to grow up is a purpose of the stratified teaching. Therefore, the implementation of stratified teaching should take all factors into account, not only to meet the needs of teachers, but also to consider the needs of students.

In the process of stratification, considering various factors, and taking into account the following principles.

3.1. Conducive to Teaching

Teaching includes two aspects of teaching and learning. In order to better carry out stratified teaching, the first to divide students into different classes. We can refer to the new entrance examination scores and college entrance examination scores, high school mathematics competition results and other factors, arranged students with a similar mathematical basis to a teaching class. This is conducive to the teachers to carry out teaching, can give full play to the guiding role of teachers in teaching, reduce care for this and lose that.

3.2. Conducive to Personal Development

Stratified teaching should fully take into account the interests of students, it is very important for students to learn. Due to the students' interests, hobbies and skills, so that they can get a better personality development; some students can be of interest into learning motivation, improve their learning achievement, while other students can put more energy into other aspects of development, to meet the personalized needs of students.

3.3. Conducive to Professional Requirements

In addition to the above principles, we should make appropriate adjustments in accordance with the requirements of the mathematics foundation, so that students should have to meet the minimum requirements of their professional level. Otherwise, it is not the purpose of the course.

4. Scheme of Stratified Teaching

The stratified teaching is not only the level of teaching classes, but also pay attention to the various levels of teaching, including teaching materials, teaching content, teaching methods, and so on. At present, the teaching class is generally adopted in three levels, namely, A-layer, B-layer and C-layer.

A-layer. According to the level of the students have a good mathematical foundation, and willing to engage in scientific research and technological characteristics of such development, we in the completion of undergraduate teaching content based on, and further broaden, deepen some mathematical content, to enable students to deeply grasp certain mathematical method and teaching thinking. A-layer mainly uses heuristic, problem discovery type teaching method, pay attention to inspire thinking, develop ability, appropriate to increase the content of self-study. A-layer teaching content rich and full, to cultivate a high mathematical quality of talent, to meet the needs of

professional and student personality needs, but also for the students to lay a solid foundation for further study.

B-layer. The students of this level occupy the main body of the students. B-layer teaching in the teaching of engineering students based on the syllabus, the use of a more unified teaching arrangements, and lay a solid foundation for the students to lay a solid foundation for further development in the future to create strength. B-layer teaching methods focus on improving the quality of classroom teaching, so that students learn to firmly grasp the knowledge.

C-layer. The level of students' mathematical foundation weak, in order to improve the quality of teaching to arrange to have rich experience in teaching the teacher to teach, also equipped with corresponding assistant teacher guidance and answering questions, and exercises of class work done, and to appropriately increase the teaching hours. Teaching students with the necessary mathematical basis for the pointer, the aim is to cultivate a faster acceptance of new technology, new knowledge, and application of the students with the professional. C-layer teaching method emphatically and basic content of explain, using "from easy to difficult", "more than training" method, strengthen the practice of typical exercises, ensure that the mastery of the core knowledge of mathematics, and pay more attention to the cultivation of the students' learning methods.

According to the current situation of students and the teaching effectiveness of advanced mathematics of the first three years, about 20% of the students are excellent, 60% of the students are middle and 20% of the students are not qualified. Therefore, the advanced mathematics in our university can be divided into three levels according to the ratio of 2:6:2 to carry out stratified teaching. In this way, the teaching requirements of A layer, B layer and C layer are basically the same, so as to achieve good teaching purposes.

In addition, in stratified teaching, there is a certain incentive mechanism, take the rolling dynamic hierarchical management, in the first grade in the second half of the semester, according to their usual learning differences, master degree of the knowledge to re stratification under the principle of good and bad. In this way, each student has a fair chance to compete, greatly enhance the students' sense of competition and the sense of crisis, the pressure into motivation to stimulate the enthusiasm of the students' learning.

5. Management Guarantee of Stratified Teaching

The stratified teaching is one aspect of education and teaching reform in colleges and universities, it is under the condition of original teachers and students' level, through the adjustment of teaching mode, optimize allocation of teaching, in order to achieve the purpose of improving the quality of teaching. The stratified teaching is a new teaching mode, which is bound to the traditional teaching management bring a lot of conflicts, so this reform requires not only to mobilize teachers' enthusiasm and initiative of, also requires the joint efforts of school parties. As the teaching management is the necessary guarantee of the teaching, it is the first to bear the brunt of the impact on teaching management. In order to achieve the stratified teaching, take to expected results, teaching management to make corresponding adjustments, such as registered student status management, different levels of credit records, the examination results, assessment of scholarship and appraised policy and relevant attendance and discipline and the corresponding teaching management policy, and so on to meet need to change the way of teaching, to ensure that the stratified teaching to achieve the expected effect.

6. Conclusion

In the stage of popular education, improving the quality of teaching and meeting the needs of different talents is an important subject of education and teaching reform. Stratified teaching and classified training is a talent training mode based on student-centered and satisfying the personalization of talents. It plays a positive role in training the comprehensive ability of talents and is a beneficial exploration. However, there are still many shortcomings in our stratified teaching

program, which need to be further improved and improved.

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