On Optimization Design of College Mathematics Extracurricular Teaching for Application Oriented University

Siyuan Chen* and Zongqi Sun

Department of basic courses, Xi'an Siyuan University,Shaanxi Xi'an,China

64179010@qq.com

Keywords: Applied regular college; College mathematics extracurricular teaching; Construction of academic discipline; Tutorial system; Optimization design

Abstract. The optimization design of college mathematics extracurricular teaching is raised, and five subsystems are established to keep the extracurricular teaching functioning efficiently. Constant practice will prompt the extracurricular teaching to mature and efficient operation. It will promote our daily teaching and provide better services to students.

Introduction

In order to become the most attractive high level application oriented university in China, it is necessary to cultivate students' innovative spirit, innovative thinking and ability to meet the needs of social development and national progress. The construction of the second classroom in colleges and universities has created an environment for the cultivation of talents' ability and quality. It is not only a supplement to classroom teaching, but also an important educational link to accomplish the goal of talent training. The preliminary exploration and practice prove that the construction of the second classroom of college mathematics is of great significance to the development of students and the construction of school style of study.

Colleges and universities (including foreign countries) pay more and more attention to the construction of the second classroom on campus. In the literature [1], Professor Li Guiying of Tianjin Commercial University expounds the significance of the second classroom in the construction of harmonious campus, and how to do a good job in the construction of the second classroom under this vision, the guiding ideology is clear and the thinking is clear. It has high reference value. Literature [2] [3] [4] explores the second classroom how to carry out innovative activities in class is discussed. The help of innovative activities to students, the development of teachers and the sustainable development of schools are discussed.In literature [5], Zhang Zhijuan and Nie Dayong elaborate on the necessity and some practical experience of developing the second class of college mathematics, but optimize the design of the form of the second classroom of college mathematics. Assessment methods and other specific practices rarely described in detail. It is rare to discuss the construction of the second class of mathematics in applied universities scientifically.

In view of the poor foundation of application oriented university students, the less time of mathematics class in university, the poor ability of operating mathematical software, the nonstandard competition and the guidance of postgraduate examination, this paper puts forward the optimization design of the second class of mathematics in application oriented university. Five subsystems are specially developed to maintain their efficient operation, so as to alleviate the occurrence of the above phenomena, which will further promote the combination of the second classroom and the first classroom, and provide better service for students.

The Construction of the Second Classroom Platform of Application Oriented University Mathematics

First, mathematics interest training subsystem. Research goal: interest is the best teacher, interest originates from understanding, and students with poor mathematical foundation can not get to the level of understanding of mathematics knowledge, so professional class learning encountered

  DOI: 10.25236/icess.2019.193

obstacles, plus lack of initiative in learning, lack of perseverance, Tend to abandon themselves. The system aims to help students who are interested in mathematics, who have a need to learn relevant mathematics courses and have a weak mathematics foundation. Key issues: how to combine with the first class to improve students' self-confidence and motivation of major learning. Secondly, how to optimize and integrate resources for mathematical modeling Subsystem and postgraduate competition subsystem service.

The second is mathematical modeling subsystem. Research objective: to develop students' ability to solve practical problems by using mathematical knowledge and software. Train contestants for the annual national college student modeling competition and win social reputation. Students trained in this system can be selected to help students in the mathematics interest training subsystem. Key issues: the current system is not perfect, propaganda and management measures need to be improved. Secondly, how to combine with the competition subsystem organically.

Third, the examination of graduate school competition subsystem. Research objectives: in Siyuan University many students in the entrance examination, the second degree, civil servants, the examination of professional skills certificate on the road detours, lack of correct guidance. This sub-system can be used to guide the students and supplement the necessary knowledge, and the excellent students can be selected out for the students in the mathematics interest training subsystem to do their best to guide and answer the questions. As the subject of higher mathematics competition and the degree of difficulty in the examination of mathematics, so also placed in this subsystem. In addition, the subsystem will set up a real-time open answering platform to provide high-quality extracurricular services for students. Key issues: how to compete for the entrance examination How should the answering platform run regularly to improve the efficiency of counseling, and how to reasonably provide the excellent students with the opportunity to exercise as the basis of the poor student answering counseling?

Fourth, mathematics research subsystem. Research objective: to cultivate students' ability to consult literature, find problems, write small papers, and cultivate creative thinking, which also lay the foundation for graduation thesis writing. Key issues: how to motivate and motivate students to carry out this activity effectively.

Fifth, real-time answering platform. A real-time and open answering platform is set up for the four subsystems above to provide high-quality math service for the students.

Optimal Design Scheme of the Second Mathematics Classroom in Application Oriented University

In order to achieve the overall goal, the study is divided into two modules.

Module I: theoretical Research.

1)On the basis of early exploration, a guiding document was formulated.

2)Study the management and activity form of the second classroom.

3)Collect data and build mathematical models to get evaluation criteria.

Module II: Practical Research.

1)Construction of Mathematical interest training Subsystem. Combining with the first class, we can improve the students' self-confidence and the motivation of professional study, and then select the students from the middle to join the mathematics modeling subsystem and the postgraduate examination competition subsystem.

2)The construction of mathematical modeling subsystem, the establishment of reasonable management system and teaching plan, the training of young teachers, and the cultivation of high quality students for the mathematics national mathematical modeling competition.

3)The construction of the sub-system of the postgraduate entrance examination competition. On the one hand, to provide guidance for students who intend to take part in postgraduate studies; on the other hand, to train reservists for participating in higher mathematics competitions in Shaanxi Province and all over the country. Students from the above two platforms can join mathematics innovation research subsystem. These students can exercise and improve themselves by coaching and answering questions for the less-based students.

4)The establishment of mathematical research subsystem. To improve the "tutorial system" and follow the line that accords with the characteristics of private colleges and universities.The two modules interact and complement each other. Through "module one" to practice and perfect "module II", the evaluation standard is used as the bridge to test and improve "module one" through "module two".

The Important Significance of the Optimization Design of the Second Mathematics Classroom in the Application Oriented University

With the compression of mathematics courses in applied undergraduate colleges, many teaching methods can not produce very good results, such as flipping the classroom [6], which reverses the traditional classroom and brings vitality and motivation to the college classroom. Let the students have a stage to show themselves, can exchange their own views, which changed the relationship between teachers and students, creating a harmonious atmosphere between teachers and students; However, the limited class hours and students' lack of guidance make the teaching method of flipping classroom unfit. The support of the second class can make the flip class, cooperative learning and other good methods play a greater role.

In addition, the optimization design of the second mathematics classroom in application oriented university will make important contributions to the cultivation of innovative ability, high quality applied talents and student management: (1) according to the characteristics of mathematics enlightening thinking, Tamp students' mathematical foundation and optimize their thinking quality; To emphasize the application of mathematics, to cultivate students' ability of software operation, to enhance their creativity, and to improve the quality of teaching; (2) provide the necessary knowledge reserve for mathematics modeling competition, advanced mathematics competition and graduate entrance examination, and use this part of students to drive the construction of study style, and rely on them to win the social reputation for the school. (3) integrate and optimize. (4) improving the campus learning atmosphere, driving innovation and innovation with outstanding students, laying the foundation for the writing of graduation thesis and scientific research paper. (5) laying a theoretical foundation for the establishment of characteristic second classroom activities. To promote the construction of school spirit, to build a harmonious campus to make efforts; (6) build online learning and answering platform with school, provide high quality service for students and establish good reputation for school.

References

[1] G.Y. Li. Construct the second classroom of university under the view of harmonious university campus. Educational exploration [J]. 2008 (7). 110-112.

[2] W.N. Huang et al. Strengthen the second classroom construction, actively carry out extracurricular science and technology activities. Journal of South China University of Technology (Natural Science Edition) [J]. 1996 (11). 163-166.

[3] Y.C. Huang, et al. The independent college develops the student second classroom innovation activity exploration. Journal of higher correspondence (philosophy and Social Sciences Edition) [J]. 2009 (10). 83-85.

[4] Q.Y. Peng. The principles and ways of setting up the second Class activity course in Colleges and Universities. School Party Construction and ideological Education [J] .2010364.

[5] Z.J. Zhang and Z.Y. Nie. The application practice and thinking of the second classroom auxiliary teaching in college mathematics. Education and Teaching Forum [J]. 2015 (3). 191-194.

[6] Y.M. Han, Bai Baosteel and Y. Zhang. A study on the Application of "Network classroom" flipping University Teaching Model [J]. University education. 2016 (10)