

The Discussion on the Mode of Undergraduate Tutorial System for Financial Mathematics Students of Local Universities

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Abstract: With the decreasing in the number of college students, the students quality of local university is also decreasing. This paper proposes the mode of tutor system for financial mathematics students of local universities. And it is analysis the necessity and the importance of tutor system for teaching, employment, etc.. We also propose some suggestions on how to execute tutor system.

Key words: Local universities; Financial mathematics; Tutor system; Personnel training mode

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1. INTRODUCTION

Tutorial system (Tutorial System) originated in Britain in Fourteenth Century at University of Oxford, the University of Oxford system to become the world's elite

students yearn for, be known to all the world in its history culture the 46 Nobel Prize winners as well as a large number of political leaders, to follow the system of the United States of America's University also is great achievements again and again, because of this, students tutorial system in Colleges and universities in the whole world can be widely popularized. In the late nineteen, along with our country to implement the credit system in universities is increasing, the corresponding drove the development of undergraduate tutorial system. Because the national condition and the social environment to the different background, in the implementation of undergraduate tutorial system, can not engage in "to take creed", but be able to draw lessons from foreign education system reflects teach students in accordance with their aptitude and personalized training philosophy, established in the tutorial system characteristics.

(1) Pay attention to the cultivation of students' scientific research consciousness and research ability. In large class teaching education mode, most of the students lack of independent scientific research ability and practical training, students are difficult to have creative idea and train of thought put into research and practice. Students under the guidance of a mentor has measure ground to undertake scientific research, can achieve a multiplier effect. Tutor fully and deeply understand the personality of students interests and expertise, varies from person to person making the study plan, encourage and guide the students to participate in scientific research activities, so that students in the process of practice, the combination of knowledge, and continuously improve the ability of scientific research and innovation. In scientific research, students find new problems, analyze and solve these problems, in the discovery and settlement process, thinking of the students got the training, and cultivate students' consciousness of scientific research.

(2) Pay attention to personality education. Teachers interact with students are relatively frequent, with the implementation of individualized education effective complement the insufficient education group. In the era of mass higher education, students in Higher Education from different targets, to meet the different needs of the popularization of higher education, must provide personalized learning, uniform talent cultivation mode is backward, cannot satisfy the need of normal students. Teaching needs to teach students in accordance with their aptitude, students need to independent study, based on student interest in learning, training students' innovation ability and problem solving ability. Students need to have more specific goals, needs more professional learning, life guidance.

(3) Working with continuity through the undergraduate tutorial system, help students to establish a correct outlook on life, values, world view, formulate scientific and professional learning plan, make clear the direction of the professional development. During four years at school, in addition to conventional education, students also receive instruction from people have graduated from teachers, moral learning, from research to the employment of each link, the whole process of individual guidance.

2. THE CURRENT SITUATION OF UNDERGRADUATE TUTORIAL SYSTEM

With the development of economy and the reform of financial system in China, especially in order to conform with international financial, traditional cultivation of financial talents are not competent for management of such a large and rapidly

changing financial markets. At present, there are many mathematics and applied mathematics undergraduate of domestic colleges and universities have implemented the new personnel training mode, and have cultivated a large number of financial talents who mastered quantitative analysis technology talent. In 1996, the National Natural Science Fund Committee treated “financial mathematics, financial project and financial management” as a national “Nine Five” major research project. After that, some famous universities such as Chinese Academy of Sciences, Peking University, Shandong University, Nankai University, carried out the financial mathematics academic and applied research. It can be said that financial mathematics has become the fastest developing branch of applied mathematics, also is one of the active frontier subjects [1]. Although these famous university financial mathematics majors are very successful [2], it can not meet the market strong demand. Relatively speaking, the objective conditions of local universities are inferior to the famous universities, especially with the decreasing in the number of college students, the students quality of local university is also decreasing. But local colleges shoulder for the local economic construction and social development to cultivate compound mathematical talents. How to culture higher accomplishment and to better meet the needs of society students? It needs a series of reform. In October 2002, as a experimentation, Peking University first opened in the undergraduate comprehensive tutorial system, subsequently, some other universities have also begun to explore and try. Undergraduate tutorial system is different from the graduate level to implement tutorial system, which does not aim to improve students’ ability and level of scientific research. Undergraduate tutorial system duty mainly has the following several aspects: firstly, it is responsible for guiding the students to form the correct ideas; secondly, it proposes the suggestions of students’ professional learning; thirdly, it could train students’ innovative consciousness and innovative ability [3]. This paper will discuss how to implement the financial mathematics undergraduate tutorial system according to our own teaching experience.

3. THE NECESSITY OF IMPLEMENTING TUTORIAL SYSTEM OF UNDERGRADUATES

University study and life are very different from the high school. In high school, students are used to doing exercises in the teacher’s monitoring, and obeying the teacher arrangement, but University learning is flexible. College students do not only need to study professional knowledge, but also to improve comprehensive ability. It is very important. The learning method is also of diversity. Classroom learning is just one part of university studies, students should be widely involved in extra-curricular activities, to use library learning efficiency.

Because the university study is relatively less pressure, it should have more time to do the things they like to do, digging out the potential of each students. But in fact, some of the students suddenly feel relaxed after entering the university. In addition to that high school teachers and parents comforted the students that university is good, and you can relax, which gives students a feeling that university is the terminal. So there are some phenomena that some of the topics in what high school students can do, while in university what they can not do. Many students have psychological hint, thinking that University study is indifferent. It gradually formed a vicious spiral. Learning is a kind of habit, a way to temper the will of students. In the process of learning, they should overcome a lot of difficulties by

themselves. If a student can be easily controlled by inertia, he can also use the same way to handle things later in life. So learning is also a kind of ability. According to our graduates tracking survey, when asked "If time can turn the clock back, you will ()": A. Study hard. Not absent. Don't be late. B. Take part in extracurricular activities. C. Keep the same. D. Dislike study. Don't want to go back to the past. A total of 55 people, 43 people chose B, 9 of people choose A. It also shows that the students did not make full use of extra-curricular time during the school. The answer to another problem displays that it is helpful for their employment to fully make use of extra-curricular time .

We find that most of the students, especially freshman, are confused in the university period, they do not know what to do, so they need a good guide. The teacher can give the students some positive suggestions to help students gain a meaningful university life. It is of important significance to establish a tutorial system for undergraduate students. The system can help the students to establish a correct outlook on life, values and world view, formulate scientific and professional learning plan, make clearly the direction of the professional development. Specially, for Financial Mathematics, which is closely associated with occupation characteristics to actual, carrying out the tutor system could allow instructors to help students in the completion of admission to graduate from the school.

4. THE SUGGESTIONS ON UNDERGRADUATE TUTORIAL SYSTEM IMPLEMENTATION

The conditions of local colleges should not be compared with those of famous universities. The tutorial system in famous university is focus on the students' scientific research ability. Under the situation of the decreased students' source quality, the tutorial system of local universities should be focus on helping students to foster correct learning methods, to develop good study habits, and to lay the foundation for employment. So, we propose the following suggestions:

(1) Formulate rigorous practical tutorial system. A complete scientific system is the guarantee of implementing tutorial system of Undergraduates, including tutor selection, supervision, examination, etc.. Clear the tutor and student responsibility, rights and obligations, fully mobilize the enthusiasm and initiative of the tutors and students, and do not let the system a mere formality.

(2) Tutor selection. Undergraduate tutorial system is a kind of auxiliary form of helping students. In principle, tutor should be generated on the basis of voluntary declaration it should not be arranged with task form. Voluntary teachers can accord to their own actual conditions to determine the guided students. The teacher can apply for directing interested students to do scientific research, related to their subjects, who can help to complete task, at the same time, to provide opportunities for students to apply what they have learnt. For example, the teacher can abstract model from their subjects, let the students participate in programming to solve the problems. The tutors can also discuss with students about the thinking of scientific research, listening to students' views. It could also improve the students' study interest in the problem. Especially for students who want to take part in the exam of the graduate-study admission, it is necessary for them to early contact with scientific research. Some tutors are willing to guide students to participate in extracurricular activities, such as challenge cup, mathematical modelling, etc.. Instructors and students can establish contact from the first grade of university,

planning of the whole university life. Especially for financial mathematics students, a wealth of actual experience tutor will give them great help. Of course, tutors are not necessarily selected from teachers, we can make full use of the local resources of enterprises. Enterprises qualified industry background technician can also serve as a tutor. In fact, if we can establish contact of the enterprise mentors and mathematical finance students, it will be significant on the students' professional quality improvement. Tutor selection is as far as possible to meet the students' individual all-round development. The different needs of the tutor with the same needs of students will produce the maximum chord.

(3) Emphasizing guidance continuity. Undergraduate tutorial system is not the same as master's tutor system, it has relatively long cycle. Theoretically, if teachers and students can get along for four years, they can establish a profound feeling. Halves will only lead to waste all the previous efforts of consequences, which is disadvantage for the development of the tutorial system. Although some special circumstances will lead to the replacement of teachers or students, encourage mentoring to students, even to track situation of students after graduation, is also helpful for collecting of graduate information. Now the only-child students are more and more. They are alone at home. Instructors can serve as mentors for friend at school, they can communicate well, make the relationship between teachers and students into the thick of the family relationship.

(4) Examination method of tutor system. Because that undergraduate tutorial system is different from master's tutor systems, some teachers may serve as several or even a dozen students' tutor. In principle, as long as the two sides reach an agreement, the number is not restricted. It may appear in the exchange of tutor in the coaching process, so it can take a variety of ways on the teacher evaluation. For example, tutor self-examination, guided students evaluation. For the teacher whose guidance do not really effective, can cancel their qualification. Undergraduate tutorial system is designed to give students the correct guidance. Examination is only one hand, in fact, a mentor harvest do not only receive modest subsidies, but more of a student's trust, with their own personality charm influence a student, this is the biggest harvest as a tutor.

At present, the domestic implementation of the undergraduate tutorial system is not wide. There are also some schools try to make relevant reform. Undergraduate tutorial system is a relatively long cycle of training mode, it needs the complexes of teacher and guidance to finish smoothly and achieve the desired results. But there is little doubt that this mode is worth to be popularized, especially occupational and professional for financial mathematics major in local universities, more need to accumulate relevant practical experience, with strong guidance tutors. Students will obtain great progress, so as to lay a solid foundation for the community. Therefore, the major tutor system of financial mathematics in the local universities is very meaningful.

In short, this guide system is originated from England, about ten years ago, it raised in China, and it was a newly emerging thing. There is a process of localization. In promoting the comprehensive development of students, using the new educational concept and idea has obviously advantages. On the perfection of system in the course of the problem which we should actively face, and solve through continuous practice and innovation, to make it better and promote the development of higher education in our country. Undergraduate tutorial system is a new mechanism for imparting knowledge and educating people, the students and instructor

pilot are well combined, fully mobilize students learning enthusiasm and initiative, give full play to the role of the internal and external causes, in line with the law of higher education. In English major undergraduate tutorial system, forming a new type of relationship between teachers and students. The students of English major education and ideological education are well combined, cultivate noble moral, strong overall quality of talent, make teaching falls to real point truly, implementation of “education for all” effect. Undergraduate tutorial system is to make the students individual and potential to obtain the full development of talent way, its implementation and fully embodies the people-oriented, teach students in accordance with their aptitude in the teaching purpose, fully respect the students’ individual character, make each student’s personality and potential to obtain the full excavation and release, make students better, adult talent. The research of students participating in the experiment investigation and data analysis also shows that the teaching mode for training the positive role. Of course, the undergraduate tutorial system implementation process, schools, colleges, teachers should further improve the tutor system, fully mobilize the enthusiasm of each respect, the undergraduate tutorial system to play a greater advantages in teaching, so that more students can benefit from.

Innovative education is to improve the quality of talents as its main content and the aim of education. The importance of quality education should be the ideas of quality education into professional education, throughout the whole process of personnel training. Quality education should pay attention to the training of ability, especially the creativity and innovation consciousness, respect for human personality, and strive to open exhibition based on the difference of personality education. Therefore, how to find the quality education and professional education combination of points, how to “further improve moral education methods, moral education in the teaching of all subjects.” is that many colleges and universities are hard. In the tutorial system, the sharing of a resource information, complementary advantages of favorable environment between teachers and students, can promote students’ initiative and creativity. The harmonious and friendly atmosphere between them is not only conducive to students’ learning and growth, but also to tutor their learning and development. Mentors have an advantage in theoretical knowledge, related research and in practice together with the academic authority, however, there exists a “recent development area” between mentors and their students in teaching and academic level. The area beyond is mainly in the interaction between teachers and students at last. Tutorial system can enhance the tutor’s own “recently development area” understanding, strengthen teacher’s self development and self improvement of consciousness. In order to guide the students from learning the knowledge into the ability of insight, such as generalization, abstraction, as well as a personal sight on the problem of world outlook and methodology. This way of thinking is not innate, but is obtained through practicing and training during the whole life, especially the training of thinking and ability of transformation the knowledge into students. Undergraduate tutorial system is the faculty selection for the professional teachers, which needs them to be of political ideology, high level of professionalism and strong professional quality. By the guiding of a mentor, the student can have a personnel training system and mode about the student’ moral, professional learning, comprehensive quality, personality development, occupation career planning and other aspects of individual guidance. Undergraduate tutorial system is very helpful for students, is worthy of promotion and application.

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