Research on the Construction of Economics Laboratory Courses Under the Background of Mass Entrepreneurship and Innovation

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Abstract. Under the background of innovation and entrepreneurship, the innovative and entrepreneurial ability has been incorporated into talent training programs. Relevant specialized courses have to be set up. Based on this principle, considering the construction of economics laboratory courses, this paper analyzes the current situation of entrepreneurship and innovation in terms of experimental courses, teaching staff and management. It puts forward the training methods to build an experimental course system, which is better for the teaching of innovation and entrepreneurship and the implementation of undergraduate training programs.

1. Introduction

In 21st century, with the development of knowledge economy and globalization, China entered into an era of continuous innovation, creation and entrepreneurship. With the steady and rapid development of China’s economy, the deepening of market economy and the further integration with the world economy after WTO, the situation of innovation and entrepreneurship is becoming more and more serious. As an important part of the undergraduate talent training programs, the teaching of innovation and entrepreneurship should not only be reflected in the curriculum, but also in the construction and management of laboratory courses. This paper puts forward some ideas on the construction of economics laboratory courses under the background of mass entrepreneurship and innovation.

2. Current situation of economics and management laboratory

There is an Economic Science Laboratory and a Computer-aided Investigation Laboratory in the School of Economics, where the experimental teaching is conducted for undergraduates majoring in economics. The courses are further extended from econometrics, statistics and SSPS to big data economic statistics, e-commerce, data mining, social network analysis, recommendation system, cloud computing, 3D visualization and Internet of Things, etc. It is greatly helpful for students to apply modern information technology to the theory and practice in their specialties, thus initially achieving the teaching goal of combining theoretical knowledge and information technology to solve practical problems. However, as the teaching of innovation and entrepreneurship becomes an important part of undergraduate talent training programs, there are still many problems to deal with about how to conduct innovative and entrepreneurial experiments for economic majors after finishing the specialized course experiments in laboratories.
3. Existing Course Analysis of Economics and Management Laboratory

3.1 Highly specialized courses

There are a great number of highly specialized courses through which students can get professional training, such as big data economic statistics, e-commerce, data mining, social network analysis, recommendation system, cloud computing, 3D visualization and Internet of Things, etc. However, there is a shortage of the innovation and entrepreneurship teaching.

3.2 Inefficiency in laboratory management

Laboratory managers have not been valued due to their inadequacy and unreasonable structure and others’ traditional prejudice towards them. They cannot take the initiative to set up courses for entrepreneurship and innovation. Besides, their consciousness of equipment management is not strong enough in that laboratory is just viewed as a teaching aid, resulting in poor quality of laboratory staff. Meanwhile, there is no corresponding reward and punishment, so that the initiative and activeness of management staff cannot be fully mobilized. Moreover, for less training, they cannot carry out innovation and entrepreneurship education in time with their old knowledge.

4. Discussion on the Construction of Economics Laboratory Courses

According to the new requirements of mass entrepreneurship and innovation, the course construction should aim at cultivating students’ awareness and ability of innovation and entrepreneurship through integrating entrepreneurship teaching and professional teaching, building the cross-discipline training system, and establishing Maker Union and so on [2], thus improving the service for students’ entrepreneurship as well as their competitiveness in society. Below are the specific methods:

4.1 Strengthening classified assessment of experimental courses

Entrepreneurial awareness refers to the powerful inner driving force for people to engage in creative activities. It is the individual factor that plays an active role in entrepreneurship, including the needs, motivation, interests and ideals, etc. Entrepreneurial quality refers to the basic quality that entrepreneurs need to give full play to their innovative ability in the process of starting a business, which includes four parts: physical quality, psychological quality, moral quality and the thinking mode.

In terms of experimental courses, it has to make an assessment of entrepreneurial practice ability which is used to determine whether this course fosters entrepreneurial awareness and quality. The assessment mainly involves the experimental course design, from the case study which will stimulate students’ innovative and entrepreneurial thinking, to business model which will broaden their horizons. And 17 courses have been assessed.

4.2 Improving experimental teaching methods

After the assessment, it is necessary to classify teaching methods and to study the popularity of these courses for students, so as to form an integrated professional teaching system of innovation and entrepreneurship.

We have adopted case-based teaching method, situational teaching method, project-based teaching method and integrated teaching method, in which case-based teaching is open and interactive [3]. Specifically, teachers should focus on the specific teaching points and introduce the corresponding cases to help students to think, discuss and analyze, so as to get some enlightenment. Through situational teaching, the ability training of innovation and entrepreneurship is integrated into the teaching process to guide students to learn independently, so as to eventually enhance their abilities to analyze and solve practical problems. During teaching, students can be allowed to act as multiple identities to deepen their understanding of what they have learned. As for project-based teaching, based on a specific project, all students build up a team to come up with creative ideas and
finish the project. And integrated teaching contains those three kinds of teaching methods discussed above.

4.3 Offering extensive opening learning

Considering the fixed opening hours in traditional laboratories, it is inconvenient for students to learn for a whole day. Three types of opening hours for experiments have been taken, namely, reserved opening, fixed opening and unlimited opening. For the first type, students have to apply in advance and then they are permitted to the laboratory according to their numbers. The second type is restrained by the quantity of equipment and capacity. For example, Big Data Laboratory undertakes the teaching task of five professional experimental courses in the School of Economics and the School of Information Engineering. Coupled with financial constraints, it is more difficult to make a full opening. Therefore, according to the teaching arrangements, the laboratory is opened at fixed time. The last type is used for some network experiments, such as SSPS experiment, which is free from the limitations of time and content. Students can do experiments at any time through the internet.

What’s more, we can set up an innovative experiment group by means of students’ voluntary registration based on their interests. 10-15 people are selected into the group, instructed by experienced teachers. The innovative experiments designed by teachers are comprehensive and research-based, covering the basic knowledge of economic statistics and some advanced information. Then it is necessary to choose some innovative experiment projects which are suitable for different students and shows the latest scientific and technological achievements. By doing this, the experiments will be closely related to discipline research and the experimental teaching will be more advanced and innovative.

In addition, the course design has to be innovated. After finishing the experiments required within teaching plans each semester, students are encouraged to do 10 integrative, design-based experiments which are selected by teachers in accordance with the course requirements and students’ theoretical knowledge and experimental skills [4]. In this teaching mode, students can choose the experiment project according to their own interests, then independently complete the design of the experimental program and finally pass the examination.

Last but not least, we should encourage students to do research and participate in open experiments. This is designed mainly for senior undergraduates. Over the years, teachers in teaching and research departments have been fostered to select outstanding students to take part in their scientific research in the laboratory. Under the guidance of teachers, students’ innovative thinking and research ability have been cultivated through searching for information, collecting data, making experimental plans and conducting high-level research.

4.4 Improving teaching staff of experimental courses

Teachers for experimental courses have to combine entrepreneurship with practical teaching of professional courses. They are fostered to have part-time training in enterprises to increase their practical skills. The school-enterprise cooperation has to be carried out, building 22 training bases such as Nanjing Bank, Nanjing Municipal Bureau of Commerce, Bureau of Statistics, Huatai Securities and so on. Through the enterprise practice and school training, a team of academic-practical teachers with rich experience is initially established, so that the professional education as well as innovation and entrepreneurship teaching can be well implemented.

5. Conclusion

Through the measures discussed above, the teaching system of innovation and entrepreneurship can be established. And the experimental teaching should center on independent experiments, professional simulation experiments, interdisciplinary experiments, and vocational practice courses and so on. So there will be a better experimental teaching system and more open projects, which can greatly develop students’ ability of comprehensive analysis, application, innovation and entrepreneurship, thus increasing their recognition towards their majors. Students are inspired to
learn, successively obtaining excellent achievements in “Challenge Cup” National College Student Academic Science and Technology Works Competition, National Statistical Contest in Modeling, National College Student Market Research and Analysis Contest, National Mathematical Contest in Modeling, and Innovation and Entrepreneurship Training Program in Jiangsu. It reflects a great success of laboratory course construction in our university under the background of mass innovation and entrepreneurship.

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References


