

## Exploration of Establishment Plans Based on Laboratories for Economic Management Related Subjects in Colleges and Universities

ZHANG Zheng<sup>[a]</sup>; WANG Yu<sup>[b],\*</sup>

<sup>[a]</sup>Northeast Petroleum University at Qinhuangdao, Qinhuangdao, China.

<sup>[b]</sup>Environmental Management College of China, Qinhuangdao, China.

\*Corresponding author.

Received 18 November 2014; accepted 9 January 2015

Published online 26 February 2015

### Abstract

The laboratories in institutions of higher learning are “source for knowledge innovation and base of personnel cultivation”, and the laboratories are also the base of quality-oriented education and significant places for experimental teaching. It is essential to make further improvements in experimental condition for basic teaching in institutions of higher learning along with modernization construction and market economic development in China as well as increasing demands for reform in the establishment of a laboratory for economic management majors. Based on a comprehensive summary and analysis of past laboratory teaching experience and lessons, the experimental teaching concept is proposed to “base on basic ability training with comprehensive quality cultivation as the core and innovation spirit as the principal line. In particular, there is a further increasing demand by society for versatile talented personnel good at economy and management in 21<sup>st</sup> century. Besides, the Ministry of Education has brought up new demands of “broader specialized direction, profound knowledge basis, and emphasis on practice” for higher education on economy and management subjects, demanding combination of classroom teaching with experiment teaching in teaching practice of subjects of economic management in order to promote accessible mutual penetration and integration by means of experimental environment. This is an important way to carry out the educational innovation system projects and also the requirements by development of the subject of economic management. In this thesis, there is research and analysis of current problems existing in the establishment and

management of laboratory for economic management-related subjects. Besides, there are also, in consideration of requirements for laboratory establishment determined by the features of the subject of economic management, discussions over necessity to establish experiment center for subjects related to economic management in colleges and universities and suggestions on specific solutions to establishment and management of laboratories for subjects related to economic management.

**Key words:** Economic management; Laboratory; Establishment and management

Zhang, Z., & Wang, Y. (2015). Exploration of Establishment Plans Based on Laboratories for Economic Management Related Subjects in Colleges and Universities. *Higher Education of Social Science*, 8(2), 19-24. Available from: URL: <http://www.cscanada.net/index.php/hess/article/view/6526> DOI: <http://dx.doi.org/10.3968/6526>

### INTRODUCTION

Practical teaching is part and parcel of education and teaching in institutions of higher learning; besides, the enhancement of experiment teaching serves as a significant step for cultivation of students’ practice and innovation capabilities, and it is also an important way to strengthen students’ professional quality and employment competitiveness. It is from the middle and later periods of 1990s that laboratories for subjects related to economic management have been established gradually in colleges and universities in China due to historical and conceptual reasons. Upon entering the 21<sup>st</sup> century, there is a period of vigorous development of laboratories for subjects related to economic management along with rapid progresses of computer technology. In particular, efforts have been made, in recent years, by many colleges and universities to establish laboratories for economic management-related subjects with good experience being

accumulated for improving experimental teaching quality for those subjects. There are both specialties of liberal arts and specialties of sciences concerning economic management-related subjects, and each specialty has its contents, properties and forms in conducting experiments. By virtue of background of experiment teaching of science and engineering subjects, there is simulation of enterprise environment and specific operating post realized by establishment of economic management-related laboratories with construction of scientific and reasonable experiment teaching system as the core, computer as the carrier and teaching software as the tools in order that students will have real command of various kinds of skills required by economic management-related subjects and will translate professional knowledge acquired into practical work abilities. However, there are problems existed. Under the background of advocacy of teaching reform today, it is urgent and necessary to gain certain understanding of current status quo of laboratories for economic management related subjects in China's colleges and universities and to develop future prospects in this regard.

## 1. CHARACTERISTICS OF LABORATORIES FOR SUBJECTS RELATED TO ECONOMIC MANAGEMENT

### 1.1 Multiple-Discipline, Multiple-Specialty and Multiple-Level Sharing Platform

Different from laboratories for subjects of sciences, the experiments of subjects related to economic management will be conducted mainly by means of professional simulation software. Through several years of constant exploration, improvement and innovation, the experimental teaching has been conducted by using computer software simulation to apply situational and interactive methods to highlight the very features of economic management related subjects. The economic management-related subjects including such undergraduate subjects as information management, enterprise management, international economics and trade, market selling, logistics management, finance and tourism and such postgraduate and doctoral subjects as enterprise management, quantitative economics and tourism management will share the experimental platform for economic management-related subjects in terms of experiment teaching, students' second classroom, interdisciplinary comprehensive training and independent study.

### 1.2 Highlighting Individuality With Emphasis on Generality

There are particular demands for various professional subjects related to economic management; thus, such

experimental courses with professional characteristics as Accounting Simulation Training, Bank Simulation, International Business Planning and Business Negotiation should be included in laboratories for economic management related subjects in order to meet the characteristics of these subjects. Besides, there are some common basic courses for various subjects related to economic management including Eviews, SPSS, SAS, management information system and E-commerce. Therefore, it is essential that laboratories for economic management related courses play the role of sharing platform to meet requirements of those basic courses related to economic management so as to develop a special teaching entity with both professional courses and platform.

### 1.3 Diversified Experiment Teaching

The experimental courses related to economic management have been taught from using past verification-typed experiments to apply diversified methods including design-typed, situational and interactive teaching at present. Besides, students will have real experience of various working posts in enterprises with such practical courses as Business Negotiation, Professional Sand Table Practice and International Business Planning, and they will also have practice outside the campus in the society with such courses as Summer Social Practice and Graduation Practice. As to teaching means and methods, the traditional multi-media teaching methods have been improved with digitized electronic whiteboard teaching being realized.

### 1.4 All-Day Access to Laboratories

Apart from meeting requirements by normal teaching, the laboratories for economic management -related subjects should also be used for part of second classroom activities and be opened to students for self-learning all day long. For instance, the "Challenge-Cup" business plan competition, extracurricular academic technical works competition and simulated stock operation competition have been held in the laboratories which are opened to meet various requirements for teaching activities with large number of students users, long open time and continuous open at weekends.

## 2. FUNCTIONS OF LABORATORIES FOR SUBJECTS RELATED TO ECONOMIC MANAGEMENT

Many local undergraduate colleges have determined to run their schools as teaching-typed and application-typed regular undergraduate institutions and to train students as "advanced application-oriented personnel with solid professional foundation, strong practical capability, good comprehensive quality as

well as innovative spirit and social adaptability to meet requirements by regional, economic and social development". It is a topic of significant practical significance to discover ways to better train students as innovative and application-oriented talented personnel.

As to subjects related to economic management, it is essential that instructors are capable of innovation and practice so that they can train and cultivate students' innovative and practical capabilities. It is unlikely to train talented personnel with innovative and practical capabilities if continuing the original teaching method of "lecture with one pen and one book and finishing class after telling all contents" and the learning and evaluation method of "one series of examination papers for one course which will be passed with score above 60 points". Therefore, it is significant that instructors, apart from reforming their teaching methods in terms of theoretical teaching, pay particular attention to introducing rich and vivid knowledge in economic and social practice into experimental teaching practice by opening up high-quality economic experiment courses in schools to combine theory with practice. In this way, students will be trained to strengthen their capabilities of operation, thinking and practice while deepening their understanding of theoretical knowledge. Above all, it is a crucially groundwork for cultivation of innovative personnel by establishing high-quality laboratories for economic management related subjects in a century advocating high-quality experimental modes.

### **3. THE NECESSITY OF ESTABLISHMENT OF LABORATORIES FOR SUBJECTS RELATED TO ECONOMIC MANAGEMENT**

#### **3.1 Experimental Teaching as Important Component of Training System of Talented Personnel Majoring in Economic Management in Colleges and Universities**

Various specialties in the subject related to economic management are interdisciplinary ones with extensive designs as well as strong practicability and applicability. Besides, it is required that the teaching of many courses has to be conducted by means of simulation experiment; thus, it is difficult to ensure positive teaching effects without practical training students. As a result, there will be a long period before graduates adapting themselves to their work since they find it hard to act as a worker in a rapid way with poor adaptability. This will be a serious detriment to cultivation of efficient personnel majoring in economic management. It is basic practical capacity required of college students by colleges and universities at present to practice various kinds of work

by means of experiment simulation so that those colleges and universities will train and cultivate innovation application-oriented talented personnel meeting social demands and will build a bridge connecting theory with practice, students with society, and learning with employment. Therefore, it is part and parcel of economic management personnel cultivation system in colleges and universities to make exploration into management mode and operation mechanism of laboratories centering on the teaching objective of cultivation of application-oriented personnel and to integrate various kinds of resources to establish an integrated, multi-level and interdisciplinary experimental curriculum system. In this way, there will be simulation of operational environment in the operation and management department to establish a learning environment for students to have personal experience so as to the cultivate their practical capabilities.

#### **3.2 Establishment of Laboratories for Subjects Related to Economic Management as Inevitable Results of Development and Application of Modern Educational Technology**

The rapid development of information technology has exerted a huge impact on China's education industry. To cultivate versatile talents with practical and innovative capabilities who will meet the demands in the 21<sup>st</sup> century, there is the era of electronic classroom featured as multi-media, networking and informatization and represented technically by network education media, software teaching and simulation. Under such a historical background, various kinds of experimental simulation technology have been applied in experimental teaching of subjects related to economic management in institutions of higher learning. In view of characteristics of occupational environment faced by students majoring in economic management, laboratories for subjects related to economic management, starting from cultivation of students' practical capability, have opened up such simulation experiment courses as accounting practice, marketing simulation, statistical analysis software, bank simulation, international trade simulation and ERP simulation game and have also introduced into actual economic information by establishing real and dynamic economic simulation environment. Through simulation of fierce competition in the real world, students will be trained to think over such aspects as production, finance and marketing. By virtue of complementary advantages and resource sharing to ensure specialty combination, highlight characteristics of the practical teaching and strengthen the teaching objective of educating the students through practice, students will be trained and cultivated to acquire capability of comprehensive analysis and decision-making so as to prepare themselves fully for thre future competition.

## **4. PROBLEMS IN ESTABLISHMENT OF LABORATORIES FOR SUBJECTS RELATED TO ECONOMIC MANAGEMENT**

### **4.1 Unbalanced Development of Laboratories for Economic Management Related Subjects in Colleges and Universities**

There is a great gap between development of colleges and universities in Eastern and Western China. In those developed regions in Eastern China, schools enjoy powerful economic strength to establish laboratories with large scale, advanced facilities and complete functions. Besides, those schools are economically powerful enough to hire experienced and skilled managerial and teaching staff so as to develop in the front rank in terms of both management and teaching. In Western China, however, laboratories established by colleges and universities with limited funds can hardly play its role with poor equipment, shortage of staff and unsound management. At present in particular, most colleges and universities in Western China are still in the initial stage of establishing laboratories for subjects related to economic management; thus, they are confronted with such problems as short of finance and playground, which will exert a direct impact on smooth progresses of follow-up constructions.

### **4.2 Not Clear Orientation in Establishment of Laboratories**

Laboratories serve as the main platforms for college students to strengthen their capability of practice and operations. Thus, many colleges and universities have paid particular attention to the establishment of laboratories; however, the laboratories have been gradually expanded into experimental centers by some colleges and universities which have relatively low-level of understanding on the establishment of experiment centers. In the opinions of institutions of higher learning, it is inevitable to improve experiment centers to cater to demands by various specialties and subjects. In this way, experimental teaching has always been playing a subordinate role in colleges and universities to simply serve current theoretical teaching. In addition, the curriculum will include more theory courses with less practice courses. Therefore, those institutions of higher learning which have opened courses on economic management have had no clear orientation on the establishment of laboratories for economic management related subjects. There is no correct perception on class hours by those institutions although they have invested in materials and funds for purchase of teaching and experimental equipment. It is true to say that the experimental equipment and teaching conditions in some higher vocational colleges are still outdated as viewed on the whole.

### **4.3 Contradiction Between Experimental Equipment and Experimental Requirements**

Laboratories for economic management-related subjects are established to meet requirements by professional teaching; thus, it is necessary to equip those laboratories with simulation software relevant to economic management. In the process of management of experimental equipment in those laboratories, it is mostly the practice to apply the method of system recovery in management of software in the laboratories in order to guard the simulation software system and certain procedures from virus to finally ensure smooth experimental teaching. It is much convenience in terms of management by adopting such a method, but there are certain problems. For instance, it is impossible to save the experiment contents last time concerning some relaying experiments; as a result, it is difficult to complete the next experiment smoothly. The only way is to save the contents in hard disks not restored, but it will take a long time to input contents of previous class when conducting the next experiment. It is really a troublesome process.

### **4.4 Not High Quality of Teaching Staff for in Laboratories**

Judging from current situation, there is the phenomenon of “few professionals, low education, single knowledge structure, few opportunities of training as well as low enthusiasm in work” concerning teaching staff in laboratories. Part of instructors teaching economic management, as influenced by several decades of traditional teaching method and mode with emphasis on theory teaching, performs not well in practice and operations especially by means of computer although they have a good knowledge. Besides, there is a lack of understanding on experimental teaching among those instructors. Moreover, there is the wrong perception in colleges and universities that experimental teachers are “inferior to” other teachers so much so that there is certain difference in terms of their professional title appraisal and assignment of workload. As a result, the experimental teachers grow, to certain degree, less enthusiastic on their teaching, which will consequently exert negative impact on quality of experimental teaching and on cultivation of students’ capabilities.

### **4.5 Disconnection Between Laboratories Establishment and Scientific Researches**

As the software used in experimental teaching is not easily accessible or developed by colleges and universities themselves with inadequate competence, the contents, approaches and methods of experimental teaching are relatively outdated to break themselves away from modern information technology and subject construction. Besides, there is no research or innovative experiments conducted in the experiment computer rooms for economic management related subjects



already established which are mostly opened to students for learning of basic computer knowledge and search for information online.

#### **4.6 Contradiction Between Hardware and Software Construction in Laboratories**

The laboratories for subjects related to economic management will usually have relatively undiversified demands on hardware by requiring mainly for computer, network equipment, server and teaching-assisted equipment. Apart from the basic operating system of software, it is essential to equip with various professional software especially simulation software. By simulation of management activities, students will gain a comprehensive and systematic understanding and knowledge on economic management. The hardware of laboratories serves as an important factor in measurement of establishment level of the laboratories, and the software of laboratories will exert a direct influence on experimental teaching results.

It is a priority for most colleges and universities to increase the operation rate of experimental equipment in laboratories. As a result, most colleges and universities have installed multiple professional software in one experiment computer, leading to reduced operating efficiency of a computer system or even mutual interference among various software. Additionally, part of the software or part of functions of one software will fail to operate normally so much so that the experimental teaching will be interrupted to finally affect teaching results and quality in a negative way. Positive teaching results will be ensured if professional laboratories are established separately for specialized subject; nevertheless, it is unpractical to most colleges and universities and the operation rate of experimental equipment will be reduced in this way.

---

### **5. SOLUTIONS FOR IMPROVING ESTABLISHMENT OF LABORATORIES FOR SUBJECTS RELATED TO ECONOMIC MANAGEMENT**

---

#### **5.1 Increasing Investments in Laboratories for Subjects Related to Economic Management**

Funds are the most important issue concerning the establishment of laboratories, and the increase of investments will help gradually improve construction environment of laboratories and to provide high-quality scientific research service for national economic development. On one hand, high and new technology knowledge is applied to help enrich and update teaching contents and to guide students to have an understanding of the latest modern science and technology with mastery of more and better skills in the service of society. On the

other, the laboratories will be more vibrant and teaching staff in laboratories will be better educated through scientific research and update of experimental equipment so as to better cater to the national economy and to exert a direct impact on economic development by school teaching.

#### **5.2 Perfecting Management Systems**

It is important that school leaders and functional management of laboratories gain a certain understanding of the big difference between laboratories for subjects related to economic management and for science and engineering by adopting unique management methods. As to ideological understanding, they have to be clear that laboratories for economic management-related subjects are something newborn and their constant development will depend on continuous innovation. Attention should be paid to the management system of laboratories in order to realize the modernization objectives with healthy and sound development. Moreover, innovative designs are required in the process of system design and implementation, and there should be innovative attempts of new teaching experiment.

#### **5.3 Emphasis on Professional Experiment Teaching**

As to sound establishment of laboratories for economic management-related subjects, it is key to transform traditional teaching viewpoint of “emphasizing on theory with few attention on practice” and to change past curriculum by subordinating various experiment courses to theoretical courses and breaking experiment and practical teaching away from economic and social development. As to experimental teaching, it is aimed at helping students consolidate and apply theoretical knowledge by means of practice of basic experiment skills and principles and at helping students give full play of their initiative and creativity through such positive thinking activities as comparison, abstraction, generalization and conclusion so as to enhance students’ capability of observation, analysis and problem-solving.

#### **5.4 Strengthening Team Construction in Laboratories and Enhancing Overall Quality of Working Staff in Laboratories**

Laboratory working staff is an important team composed of experimental teachers, technical staff and administrative staff, and they will help accomplish the construction objective of laboratories in colleges and universities in the 21<sup>st</sup> century. Thus, attention should be paid to cultivation of laboratories teaching staff by selecting high-quality and capable instructors with enthusiasm in experimental teaching for training, seminars, exchanges and field study so as to help them enhance their professional skills. Second, it is also important to balance the relationship between teaching and scientific research by making it a priority to cultivate and select academic leaders and

backbone teachers in laboratories. Third, it is necessary to strengthen management of experimental teaching and technology to ensure constant improvement of teaching quality and to promote cultivation of innovative talented personnel. Last but not the least, there should be preferential policies to experimental instructors in terms of professional title appraisal, subsidies issuance and professional development; besides, it is preferably that the professional title of senior experimental instructor will no longer be the highest rank in appraisal of teaching instructors' professional titles by the government.

### 5.5 Integrating Laboratory Resources to Increase the Utilization Rate of Laboratories

It is essential to break the "high wall" of laboratories brought about by division of colleges (departments) and professional teaching and research offices and also to conduct re-integration and optimal allocation of laboratory resources. Apart from meeting requirements for professional experimental teaching, the laboratories can also be used for scientific research by teachers and students so that the teachers will enhance their capability to apply professional knowledge in real practice to change unreasonable structure of knowledge instruction in their teaching. In this way, the teaching in colleges and universities will adapt to development of the market economy so as to increase the utilization rate of laboratories and to expand the scale benefits of laboratories.

### 5.6 Optimal Allocation of Hardware and Software

Laboratories for subjects related to economic management will usually include specialized software and such hardware as computer, network and various relevant auxiliary equipment. Judging from the structure of professional software, there is software with stand-alone structure, C/S and B/S structure which has the same requirements for stability, physical storage and operating rate of the hardware system in spite of their various demands for environmental configuration. As a result, such hardware facilities in laboratories as computer, switch and other auxiliary equipment should have relatively strong compatibility and exchangeability. Besides, there should be the best and optimal hardware configuration so as to design a network environment in a reasonable way, to optimize network server resources and to strengthen network security construction to finally meet requirements by various professional software configuration. The optimal allocation of hardware and software will serve as the very foundation for normal

operations of laboratories and also the basic conditions for increase in utilization rate of equipment.

## CONCLUSION

Along with rapid development of modern economy and information technology, the traditional cramming method of teaching has failed to meet the requirements for cultivation of talented personnel excelling in modern economic management. Thus, it is necessary to adopt a visual mode of teaching with real object operations to guide students in professional practice, which has demanded for professional laboratories on economic management as support. During the process of establishment of laboratories for subjects' related to economic management, it is essential to recognize the necessity of laboratories establishment and to make plans on establishment orientation and objectives. Moreover, special attention should be paid to guarantee of laboratories places, investment and introduction of professional application software and device hardware as well as cultivation of experimental teaching staff so as to ensure an orderly laboratories establishment environment to consequently train and cultivate talented personnel excelling in economic management who will adapt themselves to social demands.

## REFERENCES

- Gong, L., & Guo, Q. Y. (2014). Practice and exploration of establishment of laboratories for subjected related to economic management in institutions of higher learning. *Higher Agricultural Education*, (8).
- Li, Z. (2010). Brief analysis of establishment of laboratories for subjects related to economic management in institutions of higher learning. *Journal of Tongling Vocational & Technical College*, (2).
- Li, S. F. (2011). Research on status quo of establishment of laboratories for subjects related to economic management in independent colleges. *Equipment Management*, (26).
- Liu, Y. H. (2013). Development situation and solutions studies on laboratories for subjects related to economic management. *Business*, (50).
- Zhou, J., & Mao, C. (2013). Exploration and analysis of problems in establishment of laboratories for subjects related to economic management. *Discovering Value*, (23).
- Zhuo, X. W. (2012). Reflection on establishment of laboratories for subjects related to economic management in institutions of higher learning. *Channel Science*, (2).