Research on the Cultivation of Logistics Engineering Application Talents By the Diversification School-enterprise Cooperation

Zhu Minjie\textsuperscript{a} Zhang Jianwei\textsuperscript{b}, Bao Shenghua\textsuperscript{c}

\textsuperscript{a}Machinery Engineering Institute of Dalian University, Dalian116622, China  
\textsuperscript{b}Architectural Engineering Institute of Dalian University, Dalian 116622, China  
\textsuperscript{c}Machinery Engineering Institute of Dalian University, Dalian116622, China

Abstract

Through the study on the development course and the talents demand characteristic of logistics engineering industry, analysis of the present situation of the logistics engineering education, this paper summarized the existing problems between the professional education and the demand of professional talents from the logistics engineering, and put forward the cultivation model of the diversified school-enterprise cooperation to to train logistics engineering application talents. Based on the analysis of the existing mode of school-enterprise cooperation, this paper proposes the specific pattern how to adapt to the training requirements from logistics engineering talents, considers the establishment of the orientation direction and goal of talents cultivation, and optimizes training plans, eventually to build the cultivation model with strong operability for the application talents of logistics engineering profession by the diversification school-enterprise cooperation.

© 2011 Published by Elsevier Ltd. Selection and/or peer-review under responsibility of [CEIS 2011]

Open access under CC BY-NC-ND license.

Key words: Logistics Engineering Profession; Cultivation of Application Talents; Diversification School-enterprise Cooperation; Research on Cultivation Model

* Corresponding author: Zhu Minjie. Tel: 15998566016.
E-mail address: zmj19971228@163.com
1. Introduction

In China, logistics professional education started late, the rapid development of our high-level logistics education began in 2001. Before that, in our higher education, there is not yet appear to the professional discipline named by “logistics”. In order to adjust to the deep development of theory and practice of logistics, and the booming demand of talented people from all social levels, the education ministry approved the addition of logistics management in 2001 and logistics engineering in 2002. In recent years, with the deepening of the reform of the economic management system and enhanced awareness of the importance of logistics, logistics education has developed very quickly. Currently it has initially formed a education system with the different levels of doctor, master, undergraduate, college, secondary.

Because logistics engineering is a systematic management work including the procurement, transportation, warehousing, packaging, international trade, data exchange, computer and other functions, logistics engineering talent should be a complex, not only need to know the logistics engineering knowledge, but also need to grasp this kind of skilled using ability involved in the other professional skills of the post, he or she should be working on and also possess a broad range of relevant knowledge, including knowledge of international trade and custom clearance, storage and transportation expertise, financial cost management, security management and legal etc.

How to explore the successful and effective logistics training model, according to the growth ability requirements to logistics engineering talents from society? This development form will present the severe challenge inevitably to the current logistics engineering education. Whether the target of logistics engineering training can be achieved, it will be directly related to the realization of the social recognition degree.

2. The Main Problems Existing in the Current Education of Logistics Engineering

2.1 Orientation of the Talent Cultivation Objective Still Need Further Clear

According to the local demand, own superiority and the raised ability requirements of logistics engineering talents from society, further perfect the school orientation with oneself characteristic, Especially local application-oriented university, it need a further discussion on how to develop and form the strategic localization of the dislocation competition between local application-oriented university, the research university and higher vocational colleges.

2.2 The Methods and Means of Teaching Need to Be Further Improved

The current education of logistics engineering is still focus on this kind of education model of emphasized on theory and despised practice, emphasizes theory knowledge to teach in class, the model of the heuristic teaching and case teaching need to be further improved, so that more theoretical concepts and less practical methods will be taught and discussed in class. these problems caused by this kind of passive learning model is bound to present that the ability to analyze and solve problems of the students are weak, especially the comprehensive analysis ability, planning and organization skills, information access ability and knowledge processing capacity. And it will result in the phenomenon of “high knowledge, low ability”.

2.3 Practice Teaching is Weaker than the Theoretical Teaching
Logistics engineering is a special discipline with high practicality and application, which requires students to have the very strong practical ability in order to be competent with logistics work in the future. However, because logistics engineering is a young discipline and the running time is short, so the practice teaching is relatively weak in the education system of logistics engineering. The methods and means of practice teaching are backward, and is lack of scientific guidance and appraisal standards which are all restricting the ability cultivation of students in independent practice.

2.4 The Lag from the Construction of Teachers Team

The overall quantity and quality of teachers team has a gap to the educational needs of logistics in China, so that the construction of teachers team needs to be further strengthen.

3. Cultivation of Logistics Engineering Application Talents by Multiplex School-enterprise Cooperation

As a result of the pure school training, has imprisoned the practical ability of student, we advocate the diversification method of school-enterprise cooperation in the teaching of logistics engineering specialty to train logistics engineering application talents. The model of school-enterprise cooperation is an effective way to train logistics engineering professionals, the joining of the enterprise can lead us to the purpose of training application talents. Its purpose is to further improve the educational quality, and refining school-running characteristics, and to explore the professional construction way of the logistics engineering talents cultivation.

There are basically two kinds of foreign model of school-enterprise cooperation: one is enterprise-oriented cooperation model, such as “dual system” from Germany, “sandwich model” in British and “industry cooperation” in Japan; the other is school-oriented cooperation model, such as “co-education” from USA and “teaching factory model” in Singapore, profiting from the successful experience of these countries, it will make a very important significance undoubtedly on the healthy and continuous development of Chinese education.

The current model of school-enterprise cooperation is essentially kind of model of school-oriented, such as these models of “order training”, “semi-industry cooperation”, the “double-directional student”, “vocational education group”, “enterprises (outside school) training base”, “introducing talents into school”, “introducing enterprises into school”, and so on. But, according to the current number of school-enterprise cooperation, there have been many forms. Many model of school-enterprise cooperation often are not simple, but a combination application of two or more models.

The analysis on the current problem existing in the school-enterprise:

• ① The Limited Deep Cooperation of School-enterprise Caused by the Extent of Cognition

School-enterprise cooperation is aimed to train more talents to meet the needs of enterprises, so the model needs to solve the unsolvable problem areas in the class. However, in university it still remains the teaching model of school or teacher-centered, and there is not forming the target of long-term personnel training and mechanism of the industry-academia cooperation. Therefore, on the aspect of making the education plan of the school-enterprise cooperation, the contribution is given greater attention, rather than the feasible degree of school-enterprise cooperation. This difference of the cognition directly affects the level and depth of school-enterprise cooperation.

• ② The Passive Relation of School-enterprise Cooperation Caused by the Different Goal

Among the formed school-enterprise cooperation currently, most of schools seeked partners to business for the sake of survival and development, and adapt to the market economy. The pursuit of enterprise is
the maximizing profits of production and operation. They usually are affected by short-term benefits, their positivity and the degree of participation on the school-enterprise cooperation in personnel training is not high, so the main task of cultivating students depends on the school itself. This kind of cooperation is a profit-driven cooperation to some extent, there are interests in coordinations and constraints. The characteristic of production and consume from education tell us that the real school-enterprise cooperation should be mutually voluntary, risk sharing, complementary advantages and benefit-sharing. From this point of view, it is far away from the true sense goal of school-enterprise cooperation-- to build a sustainable development and the benign circulation mechanism, to realize the optimum combination of education resources.

- Not Yet Fully Developed the Function of Training Center (base) in the School-enterprise Cooperation

   Training center (base) melts “professional” and “skill” as a whole, is one important content of specialized education for the construction of foundation ability, is also the basis of attracting enterprise, deepening the school-enterprise cooperation.

   Only the school training centre (base) does have production function and technical service connotation, the enterprise will make school processing products, staff training, common research and development. It is not only the premise of whether a company can accept student internships, in certain degree, but also make up for the post internship of inadequate in enterprise. Only if Schools have the ability to solve substantive problem on talent and technology, school-enterprise cooperation can form the long-term mechanism with the effect of reciprocal benefit and win-win to develop in depth. Open training center (base) is the important carrier of school-enterprise cooperation, and is the bridge and link of forming the good cooperation mechanism between businesses and schools. In the segment of practice education, how to fully utilize and improve the conditions of existing training center for the further development of school-enterprise cooperation, it will need further exploration and research.

   According to the above main problems existing in the school-enterprise cooperation, we can focus on the following aspects to strengthen the construction of the school-enterprise cooperation:

- Clear Goals of Orientation and Talents Training

   The target of talents training is the basis of the mode of talent cultivation, when we consider identifying professional training objectives, we must pay great attention to the characteristic from talents demand, based on this, and the two complement each other.

- Optimizing the Talent Training Scheme, Construct the Training Mode of Application-oriented Talents

   In making the talent training scheme, we must insist on three principles of adaptability, difference and practicality, and break through the training mode of traditional subject knowledge talents.

- Construction of the Integration System and Strengthen Link for Practical Teaching

   The so-called integrated system of logistics practice teaching refers to the diversified the school-enterprise cooperation, logistics laboratory, logistics training laboratory as the training platform, based on this, we will divide the practice teaching link of logistics professional into social practice, logistics case teaching, course practice, logistics case simulation experiment, cognition practice and the professional training, logistics design contest, graduate thesis etc, and carry out systematic research and implementation to make it become a kind of the whole process of practice teaching mode with mutual coordination and promotion; not only that, according to the practice teaching content, we will consider to arrange each practice time points of practice teaching reasonably and earnestly, formulate specific implementation plan; therefore, we need to establish the comprehensive standardized evaluation system for practice teaching, according to this evaluation system, the process evaluation and terminating assessment will be combined, the evaluation of practice teaching inside and outside campus will be convergence, the evaluation of practice
teaching activities from program and unplanned will be linked up, eventually, it will form a comprehensive, whole process, three-dimensional evaluation system for practice teaching.

- ④ Exploring the way of talents cultivation by the combination of production and research

We (schools) should make full use of our advantages, closely integrate with the enterprise, and carry out the activities of production and research, as a purpose to improve the students' comprehensive ability and the technical innovation ability, so that our students will learn and understand this professional jobs, working content and the requirements of professional technical personnel ability and quality. Graduation thesis (design) will combine with the demand of the market and enterprise to research and design with pertinence, thus the comprehensive quality of graduates will be once again get exercise and improvement.

4. Conclusion

Logistics engineering is a discipline with the characteristic of comprehensive, systematic, strong applied. The study on diversification school-enterprises cooperation to cultivate logistics engineering application talents, through the practice of the teaching model of school-enterprise cooperation, there have been certain improvement in making the teaching plan of logistics engineering, curriculum offering, the construction of practice teaching base inside and outside of school, and teachers team building, it solve the existing problems, such as the poor practical abilities of students, and the professional skills shortage, and so on. It should achieve the effect of tripartite win-win, among higher education universities, logistics enterprises and students.

Through the study on diversification school-enterprises cooperation to cultivate logistics engineering application talent, we can sort out the characteristics of the logistics engineering application talents and the way how to cultivate them. Also, we can further clarify the teaching orientation and the goal of personnel education, optimize the education program, continue to reform educational concept, build integrated teaching system, strengthen the teachers team construction of logistics engineering professional, and explore the way of cultivating logistics engineering application talents. Currently, the kind of school-enterprise cooperation model of logistics engineering is basically in the shallow cooperation, and school-oriented cooperation is wishful thinking, school-enterprise cooperation teaching model need to be further improved according to above analysis.

References

[1] Lu Ying; Higher Vocational Education “merchandising “ the curriculum reform [J]: Vocational Education Research; 2005 , 02.
[2] Xia Jiangu; Higher Vocational Education model and evaluation [J]: Education research; 2005, 15.
[3] Fuli Ru; Higher Education Logistics Management Education Reform--the employment-oriented skills-based teaching model [J]: Logistics Technology; 2007, 01.
[4] Yan Xiao Hui, Ma Jun, Ma Jie: The logistics work process-oriented teaching and research [J]. the contemporary economy, 2008 (4).
[5] Zhang Zhihui: Briefly Discuss Logistics in Higher Vocational Education “international logistics “ Teaching Reform [J]. Shanxi education, 2007 (7).