Excellent Ability Cultivation System for Students Majoring in Logistics

Yong GU\textsuperscript{a,*}, Yuanyi YUAN\textsuperscript{b} and Zhangqiong WANG\textsuperscript{c}
Wuhan University of Technology, Wuhan, Hubei, China
\textsuperscript{a}guyong@whut.edu.cn, \textsuperscript{b}460915419@qq.com, \textsuperscript{c}wulius@sina.com

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Abstract. As a typical interdisciplinary subject, logistics has its unique characteristics and high demand for talents. The training system centered on the development of excellent ability should be established and improved to meet the needs of the logistics industry. By analyzing the academic discipline characteristics of logistics and the demands for talent of logistics industry, the paper defines the connotation of excellent ability for logistics major students, which is composed of the innovative ability and the adaptability, and puts forward the goal and framework of excellent ability cultivation system for logistics students, including mainly two systems: professional quality training system and practical quality training system. Aiming at the problems existing in the two systems, mainly including insufficient attention to logistics discipline, incomplete curriculum system and teaching content, unreasonable student training plan and poor conditions of practical teaching, some suggestions to improve excellent ability training system for logistics major students are proposed.

Introduction

With economic transformation and industrial restructuring, logistics industry plays an increasingly important role in the development of national economy. At the beginning of this century, Chinese universities started to recruit logistics major students. After more than ten years of innovation and development, the training system for logistics professionals has taken shape initially. Excellent ability is the basic goal of modern university education and the aim of talent cultivation in our university. Logistics has its unique discipline characteristics and high demand for talents. From the perspective of improving the excellent ability training system for logistics major talents, the paper summarizes the experience and shortcomings of the existing teaching and training system, and discusses the training objectives and system framework.

Discipline Characteristics and Talents Demands of Logistics

As a new academic discipline, logistics has the characteristics of interdisciplinary, marginal and strong application background. Training system of logistics talents involves management, engineering, machinery, transportation, economy, automation and other disciplines, so it’s a typical interdisciplinary subject. The undergraduate major of logistics management and engineering (No. 1206) is set up in the Catalogue of Undergraduate Specialties of General Colleges and Universities by the Ministry of Education of China. In the disciplinary system, there is no first-level discipline in logistics. The cultivation of postgraduates majoring in logistics is mainly affiliated with other first-level disciplines, and the phenomenon of marginalization is obvious. However, the development of various industries is inseparable from the support of the logistics industry. From rural logistics to urban logistics, from agricultural logistics to industrial logistics, from enterprise logistics to social logistics, from e-commerce logistics to cold chain logistics, from logistics finance to logistics real estate, logistics discipline has a wide and far-reaching application background.

Therefore, there is a large demand for talents in logistics industry, which has the characteristics of multi-level, multi-industry combination and dynamic. According to the nature of work and job responsibilities of logistics professionals, the demand for talents can be divided into four levels: decision-making type, research type, management type and operation type [1]. For decision-making and management type logistics talents, their education background generally requires bachelor degree or above, and a lot of middle or senior management experience are also required. For those
who are engaged in logistics research, academic requirements are generally for master's or doctoral degree. For operational type talents, having a college degree or above is deemed. Simultaneously, it can be seen from the extensive application background of logistics that many industries are related to logistics businesses and require professionals engaged in logistics job, who not only master the rules of logistics management and operation, but also is familiar with the professional knowledge of the industry. At present, China's economic development is facing adjustment and transformation. New business and new economic models are emerging continuously. Smart +, Internet + and Industry 4.0 are developing rapidly. The logistics industry with the characteristics of basic service industry and supporting many industries is facing new situations. The demand for logistics talents is more dynamic, and practitioners have to update their knowledge and capabilities constantly.

Cultivation System of Excellent Ability for Logistics Major Students

Connotation of Excellent Ability for Logistics Major Students

The proposal of excellent ability comes from the Education and Training Plan for Excellence Engineers (hereafter referred to as the Excellence Plan). The Excellence Plan is a major reform project for the Ministry of Education of China to implement the Outline of the National Medium-and Long-term Education Reform and Development Plan (2010-2020) and the Outline of the National Medium-and Long-term Talent Development Plan (2010-2020). It aims at cultivating a large number of high-quality engineering and technical personnel with high innovation ability and adapt to the needs of economic and social development [2]. It can be seen that the core of excellent ability is innovation ability and adaptability.

The constituent elements of college students' innovative ability mainly include innovative thinking ability, non-intellectual factors and innovative practical ability [3]. Logistics major students' innovative ability refers to their ability to develop innovative thinking and practice in their study and work in the field of logistics. Innovation ability means they have insight, understanding and execution on new methods, new technologies, new products, new models and other new things, and can adapt to, or even lead the rapid development of the logistics industry.

The adaptability enables logistics major students to adapt to the changes of learning and working environment at different stages in terms of physical and psychological qualities, behavior habits, performance and interpersonal relationships [4]. In addition, they should adapt to the characteristics of logistics business in different industries. For example, the business and professional background of the procurement and supply logistics are different between equipment manufacturing enterprises and construction enterprises. Moreover, as equipment manufacturing enterprises, the logistics business of automobile manufacturer, construction machinery manufacturer and IT equipment manufacturer are different.

Cultivation Objectives of Excellent Ability for Logistics Major Students

The cultivation objectives of logistics major students' excellent ability can be summarized as follows: having theoretical knowledge and professional skills of logistics, adapting to the needs of the development of logistics industry, having innovative thinking and practical ability, and ability to work independently in decision-making, research, management or operation, as shown in Fig. 1.

Framework of Excellent Ability Cultivation System for Logistics Major Students

The framework of logistics students' excellent ability cultivation system is shown in Fig. 2. Cultivation of innovative ability for logistics major students should be carried out from two aspects: innovative thinking and innovative practice. Cultivation of adaptability requires students to adapt to the needs of logistics discipline and social development.

According to the ability, quality and knowledge structure required in logistics job positions, the corresponding curriculum set-up should be integrated with knowledge, ability and quality. Based on the talent training chain composed of basic courses, professional courses, experimental courses,
curriculum design and graduation design, the professional quality training system for logistics major students can be constructed.

Through innovative practice and understanding the development of logistics industry, the practical quality training system for logistics major students can be build, which involves cognitive practice, professional internship, graduation internship, social practice, college students' innovation and entrepreneurship projects, and discipline competitions.

![Figure 1. Cultivation Objectives of Excellent Ability for Logistics Major Students.](image)

Problems in the Cultivation System of Excellent Ability for Logistics Major Students

Problems in the Professional Quality Training System

Firstly, there is less attention to logistics discipline. In most colleges and universities, logistics as a new discipline cannot be compared with other disciplines in terms of personnel scale, scientific research strength or alumni resources. Therefore, there are some disadvantages in the allocation of cultivation resources and the construction of practical conditions.

Secondly, students lack confidence and enthusiasm on their logistics major. The courses for logistics major students involve many subjects and fields, and their learning content is complex but not in depth. It is easy to cause confusion and misunderstanding for students. They cannot distinguish their career orientation. As they say, "everything can be learned, nothing can be done". The difficulties they encountered in employment cause students' confidence and enthusiasm in their major to be reduced. This is reflected in the fact that the number of students transferred to the logistics major is small and the number of students transferred to other major from logistics is large.

Thirdly, the curriculum system and teaching content need to be improved. At present, there is a homogeneous trend in the curriculum system and teaching content of logistics major in many universities. The characteristic of the curriculum is not prominent, and its connections and directions to the logistics industry is not well. The combination of curriculum and practice is not

![Figure 2. Framework of Excellent Ability Cultivation System for Logistics Major Students.](image)
close enough, and there is a certain deviation from the needs of employers [5]. Besides, the teaching content of some courses overlaps.

**Problems in the Practical Quality Training System**

Firstly, there is less practical teaching hours in the cultivation plan. Constrained by the rules and regulations of the training plan, the practical teaching hours are relatively less, and the space left for students to freely choose a professional course is very small. There are not many opportunities for students to practice learning, and the effect of theoretical teaching is also affected.

Secondly, the conditions of practical teaching need to be strengthened. Practical teaching conditions are inadequate. Many universities have set up logistics major for undergraduates, but some colleges' practical teaching conditions cannot meet the requirements of training qualified personnel, resulting in poor quality of graduates. Moreover, the investment in practical teaching conditions is not enough. Compared with the large amount of funds invested in the construction of teaching facilities, the investment in the construction of training bases and other practical teaching conditions is relatively small. Due to the insufficient investment in training base and hardware, lots of logistics practical teaching relies on software to simulate, and students have insufficient knowledge of the actual operation and facilities of logistics.

Thirdly, there are some difficulties in the arrangement of off-campus practical teaching. The demand of practical companies often conflicts with the requirement of practical teaching regulations. For example, many practical companies hope that students participating in the internship can work for more than three weeks, or even two or three months, while the practical teaching arrangement is usually only three to four weeks. On the other hand, because of the managerial slack of practical teaching and the low self-consciousness of some students, the practice becomes a visiting or a quick tour, and the internship students have nothing to do resulting in internship effects were not good.

**Suggestions on Improving the Cultivation System of Excellent Ability for Logistics Students**

**Figure the Thought of Logistics Professional Construction**

It is necessary to clear the thought of logistics specialty construction. The major of logistics is oriented to the logistics field of multiple levels, training logistics talents with equal emphasis on knowledge and skills, ability and quality [6]. It is important to combine with the characteristics of logistics, highlight the cultivation of excellent ability and comprehensive quality, integrate the development trend of modern logistics theory and practice, and constantly provide students with learning contents of new technologies and skills. The cultivation system should not only cultivate logistics students' practical ability in work, but also the quality of students' further study. The training plan should combine the training of logistics practical skills with learning ability.

**Strengthen the Construction of Course System**

The curriculum system of logistics major should be constructed according to the requirements of job position and the objective of improving students' abilities, starting from the training mode: wide scope, strong foundation, strong ability and high quality [7]. The corresponding courses should be set up on the basis of the main structure of knowledge, ability and quality required by logistics professional jobs [8]. It should lay stress on the cultivation of students' practical ability, the combination of knowledge and technology, and the improvement of students' comprehensive quality. It needs to change the traditional teaching ideas and emphasis the characteristics of logistics discipline. The content of the course should be adjusted by the knowledge required in the logistics business process, so as to meet the needs of the logistics practical activities. As for the selection of teaching materials, it is better to select those textbooks with strong specialty and practical application [9].
Reform Teaching Methods and Means

The teaching methods and means should be combined with the characteristics of logistics discipline and students, which contributes to students mastering knowledge, cultivating innovative spirit, improving comprehensive quality, and exerting their potential. Making full use of online course resources and flexible use of mixed and heuristic teaching methods can stimulate students’ initiative and enthusiasm in classroom learning, encourage students to think independently, and train their scientific thinking and innovative spirit [10]. In the teaching process, various advanced teaching methods can be used to improve students’ professional quality and operational skills, such as multimedia teaching, virtual simulation experiment teaching, physical teaching, demonstration teaching, enterprise real case analysis.

Innovate Practice Teaching Pattern

The practical teaching system should determine the main contents of practical teaching according to the training objectives of the logistics major and the ability requirements of logistics talents, rationally arrange the time points of practical teaching activities, and formulate the implementation plan for practical teaching [11]. The main contents of practical teaching include: experiment of professional courses, comprehensive experiment of business simulation, innovation and entrepreneurship training, competition of logistics disciplines, social practice, cognitive practice, professional practice, graduation design and so on. The undergraduate tutor system is implemented, which every student has a tutor severed by logistics professional teachers after they entering the university. The tutors regularly conduct professional guidance, answer students’ questions and direct their innovative practice activities [12]. It is necessary to organize students to visit logistics enterprises, distribution centers of commercial chain enterprises or logistics management departments of large state-owned enterprises and practice, so that students get an intuitive understanding of the logistics industry. In addition, inviting logistics enterprise managers to campus to conduct reports or seminars, and to communicate with students can help students to love the logistics major and formulate their own career development plans rationally. Those students who participate in logistics academic competitions or research projects should be encouraged. Scientific research and social practice should be organically combined to provide students with the opportunity to contact logistics enterprises and experts, improving students' practical ability and comprehensive quality, and participating in research competitions and social practice can be recognized as extra-curricular credits.

Conclusion

According to the academic discipline characteristics of logistics and the demand for talents of logistics industry, we discuss the problems existing in the cultivation system of excellent ability for logistics major students from two aspects: professional quality training system and practical quality training system. Furthermore, we propose some specific suggestions to improve excellent ability training system for logistics major students, including figuring the thought of logistics professional construction, strengthening the construction of curriculum system, reforming teaching methods and means and innovating practice teaching pattern.

The motto of Wuhan University of Technology is "Honest virtue, erudite knowledge and pursuit of excellence". It is the relentless pursuit of logistics major teachers to cultivate talents with excellent abilities. We have done some valuable job on the objectives, approaches, modes, teaching reforms of the logistics major students’ excellent ability training system, and achieved some good results. We have successively won honorary titles or awards such as the famous teachers' studio of Hubei province, the excellent grass-roots teaching organizations of Hubei province, the first prize for teaching achievements of universities in Hubei province, and supply chain talent training demonstration base.
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