

# Innovative thinking on the training mode of logistics management talents in higher vocational colleges based on supply chain management thought

*Jiaying Shen*

Anhui Technical College of Industry and Economy, Anhui Hefei230051

**Abstract:** With the adjustment and upgrading of China's economic structure and industrial structure, the demand for applied logistics management talents trained by higher vocational education is increasing. In order to adapt to this change and improve the training quality of logistics management talents in higher vocational colleges, this paper introduces supply chain management theory into the training system of logistics management talents in higher vocational colleges, analyzes the supply chain structure of logistics management talents training in higher vocational colleges, compares the relationship between logistics management talents training mode and supply chain management theory, constructs the training model of logistics management talents in higher vocational colleges, and finally puts forward innovative thinking on the training model of logistics management talents in higher vocational colleges.

**Key words:** Supply chain management; Personnel training mode; innovation

The Ministry of Education pointed out in the summary report on the reform of curriculum system in 2000: "Talent training mode is the sum of education and teaching mode, management system, evaluation method and its implementation process for different types of professionals under the guidance of certain educational theories and educational ideas, according to specific training objectives and specifications, and based on relatively stable teaching content and curriculum system." It can also be said that the so-called talent training mode is the organizational structure style and special operation mode of cultivating talents. There is no unified mode of talent training. As far as colleges and universities are concerned, different colleges and universities have different characteristics and operation modes. In this paper, the supply chain management theory is introduced into the training system of logistics management talents in higher vocational colleges, and the supply chain model of applied logistics management talents in higher vocational colleges is constructed to realize the seamless connection between students, higher vocational colleges and employment units. From the perspective of supply chain, the following thoughts are made on the training model of applied logistics management talents in higher vocational colleges.

## 1. Training high quality applied logistics manager is not only the urgent requirement of the adjustment and upgrading of economic structure and industrial structure, but also the need of the development of logistics management specialty in higher vocational colleges

Higher vocational colleges mainly undertake the task of cultivating applied and skilled (operational) talents, focusing on the integration of theory and practice. From the experience of industrialized and modernized development of developed countries. The demand for talents in economic and social development is mainly applied talents with certain knowledge and skills. At present, China is in a period of transformation from traditional industrialization to new industrialization, and the traditional labor-intensive production mode is gradually changing to technology-intensive production mode. The transformation of production mode promotes the continuous growth of the demand for applied talents in economic activities and management activities. The logistics industry has an important strategic position in the national economy, and it is a combination of labor-intensive and technology-intensive industries. With the development of economy and technology, the logistics industry has gradually changed from labor-intensive production mode to technology-intensive production mode. Therefore, the development of logistics industry needs a large number of applied logistics management talents, and the orientation of talent training for logistics management major in higher vocational colleges is to cultivate applied logistics management talents. Cultivating high-quality applied logistics management talents has become the development goal of logistics management specialty in higher vocational colleges.

## 2. Overview of supply chain related theories

### 2.1 Supply chain and supply chain management

Supply chain refers to the core enterprises, through the control of information flow, logistics and capital flow, starting from purchasing raw materials, making intermediate products and final products, and finally sending products to consumers by sales network. It is a functional network chain model that connects suppliers, manufacturers, distributors, retailers and end users as a whole.

### 2.2 Pull supply chain

Pull supply chain is based on accurate customer demand, even after receiving customer orders, and products are delivered across warehouses in the distribution center, reducing transit time and delivering products to consumers as quickly as possible. Pull supply chain can greatly reduce inventory, thus greatly reducing inventory cost and occupation cost, and eliminating inventory risk. The advantages of pull supply chain are also reflected in providing tailor-made products and services to customers; Its disadvantage lies in the high cost of responding to customization requirements.

### 2.3 "Bullwhip Effect" in Supply Chain

"Bullwhip effect" refers to a phenomenon of demand variation and amplification in the supply chain. When information flow is transmitted from downstream enterprises to upstream enterprises in the supply chain, due to the lack of information sharing, the information transmission is distorted and amplified step by step, which leads to a great deviation between the information obtained by upstream suppliers and the customer demand information in the actual consumer market, thus leading to the upstream enterprises of upstream suppliers in

the supply chain to maintain a higher inventory level. The main reason is that suppliers at all levels in the supply chain only make supply decisions based on the demand information from their neighboring downstream enterprises, and the untrue demand information will go upstream along the supply chain, resulting in the phenomenon of gradual amplification.

2.4 Effective customer response (ECR)

Effective Customer Response (ECR) is a supply chain management system in which suppliers, manufacturers, wholesalers, retailers and other supply chain node enterprises coordinate and cooperate with each other to meet the needs of consumers at a lower cost. A flexible supply chain management model that can organically integrate information technology, organizational innovation technology, computer technology, advanced management model and various management ideas to meet the changing market demand. Among them, the delayed manufacturing strategy is an effective customer response, that is, when enterprises are faced with multi-variety and small-batch customer needs, they are no longer storing products, but storing various production factors. When customers make demands, they can extract production factors in time and assemble them to provide the required products or services. It can not only eliminate the risk of product inventory, but also accurately meet the needs of customers.

**3. Construction of Higher Vocational Logistics Management Talents Training Mode Based on Supply Chain Management Thought**

According to the theory of supply chain, the supply chain is an interlocking and seamless chain from the procurement, production and distribution of raw materials to the final delivery to consumers. The member enterprises of supply chain nodes should trust each other, share information, complement each other's advantages, share risks and win-win profits, and finally realize the situation of core competence integration and strong cooperation. The cooperation among its members is the key to the success or failure of supply chain operation. The future competition is no longer the competition between enterprises, but the competition between supply chain and supply chain. The key of supply chain management is to realize the synchronous operation of supply chain member enterprises, coordinate with each other, seamlessly connect upstream and downstream businesses, share information by using information technology and advanced management concepts, realize JIT procurement, JIT production and JIT sales, and truly realize the complete synchronization between upstream and downstream. Finally, the system optimization and cost minimization of the whole supply chain are realized, and the personalized needs of customers are met in time and accurately. If higher vocational colleges are regarded as service enterprises, students who enter higher vocational colleges from high schools are "raw materials", qualified graduates trained by schools are "products", high schools are suppliers, higher vocational colleges are production enterprises and employers are final customers, so a talent supply chain is formed. This paper introduces the idea of supply chain management into higher vocational logistics management education, and discusses the innovation of higher vocational logistics management personnel training mode.

3.1 Composition of talent supply chain in higher education

The composition of enterprise supply chain is generally "supplier - producer - distributor - customer". The production process and the process of higher vocational education are compared to find their similarities. The supply chain of higher vocational logistics management education can be described as "enrollment - vocational logistics professional education - employment", which constitutes a supply chain of vocational logistics management talent training. The upstream is the student source provider (high school or technical secondary school), and the downstream is the employment unit or the undergraduate college accepting the upgrade. Specifically, the talent supply chain composition of logistics management education in higher vocational colleges should be like this. That is, student source providers (such as families, organizations, individuals) -- college enrollment selection (raw material procurement) -- comprehensive education on students' knowledge, skills training and professional ethics (product production process) -- employment department's employment mechanism (product sales) -- employers (customers). As shown in Figure 1.

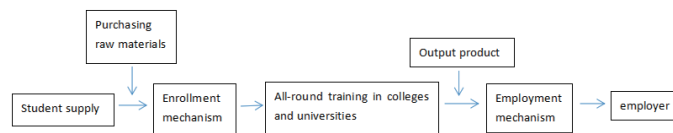


figure 1. Higher vocational logistics management talent supply chain

3.2 Construction of Supply Chain Model for Training Logistics Management Talents in Higher Vocational Colleges

Higher vocational colleges, like most enterprises, have the contradiction between supply and demand in the supply market and the consumption market. The three main bodies and two supply and demand relationships of enterprises are the supply-demand relationship of raw materials between suppliers and producers and the supply-demand relationship of products between producers and customers, and the three main bodies and two supply and demand relationships of higher vocational colleges are the supply-demand relationship of students' families or student organizations-higher vocational colleges and the supply-demand relationship of graduates from colleges and employment units. In order to solve the bullwhip effect in the supply chain of logistics management talents training in higher vocational colleges, we can use the theory of customer relationship management (CRM) to solve the bullwhip effect, just like enterprises. On the one hand, colleges and universities should accurately grasp the demand for logistics talents in the market. Colleges and universities can set up special departments to strengthen information communication with employers, or establish a platform for school-enterprise cooperation to collect and process the demand information of employers and give full play to the docking between colleges and employers. On the other hand, colleges and universities should regard the demand of logistics talents of employers as the driving source of the operation of knowledge flow, service flow and capital flow in the supply chain of logistics management professionals in schools. This is a typical pull supply chain. In order to meet the demand of logistics talents market and adapt to its changes, the training of logistics management talents in higher vocational colleges should be a dynamic management process. Colleges and

universities should strengthen cooperation between internal supply chain departments and external supply chain members in the whole process from enrollment to employment, so as to realize synchronous operation, coordinated and seamless docking among members and smooth transfer of knowledge flow, information flow, service flow and capital flow. Only in this way can the supply chain of logistics management talents training in higher vocational colleges meet the demand of logistics talent market in real time and improve the satisfaction of employers.

#### **4. Innovative Suggestions on Training Mode of Logistics Management Talents in Higher Vocational Colleges Based on Supply Chain Management Thought**

4.1 The overall optimization of supply chain and win-win cooperation in the training of logistics management talents in higher vocational colleges

The enterprise supply chain pursues the system optimization and cost minimization of the whole supply chain on the premise of meeting the individual needs of customers in time and accurately, and finally realizes the mutual benefit and win-win situation of the node members of the whole supply chain. The same is true for the supply chain of logistics management talents training in higher vocational colleges. Talent cultivation in higher vocational colleges is a systematic project, which requires multi-party participation and cooperation. Driven by the employer's demand for logistics talents, we will conduct in-depth market research and forecast, optimize the entire logistics management talent training supply chain and rationally allocate resources. Supply chain members should share information, work together and operate synchronously, realize seamless connection between upstream and downstream, optimize the whole talent supply chain, and finally achieve a logistics management talent training model that students, schools, employment units and graduates are completely satisfied with.

4.2 Based on core business, enhance core competitiveness

Teaching management is the core work of logistics management personnel training. In order to ensure the quality of logistics management personnel training, teaching management should be strengthened from three aspects: teaching content, curriculum system and teaching methods.

4.2.1 Teaching content

According to the supply chain goal of logistics management talents in higher vocational colleges and the needs of employers, the teaching content of logistics management in higher vocational colleges should be designed. Through the investigation of the needs of logistics talents by employers, the teaching content design should integrate attitude, knowledge and skills into the teaching content. First, the cultivation of students' attitude should be integrated into teaching. Educate students to have a certain degree of resistance and courage to stick to the end, to have a sense of responsibility, and to have good professional ethics and humanistic quality. Finally, students will be trained to be self-confident, strong, honest and practical professionals. Secondly, in terms of knowledge, considering the bullwhip effect, we should strengthen communication with employers, have a transparent information transmission mechanism, and integrate the feedback information from employers into teaching. It is considered to introduce the concept of delayed manufacturing into teaching, decompose knowledge into knowledge modules, carry out modular education, and extract knowledge modules in time when customers demand them, so as to meet the needs of different employers. Strengthen the design of basic knowledge content and general knowledge, and delay the personalized knowledge required by employers as far as possible. Because of the long periodicity of talent training, on the one hand, it is necessary to accurately predict the future market demand, on the other hand, it is necessary to update the teaching content in real time and dynamically. Only in this way can the supply chain of logistics management talents be flexible, so that students can smoothly realize the transition from school to employer and realize the seamless connection of talent supply chain. Thirdly, in terms of skills training, according to the idea of supply chain management, schools and employers have reached a supply chain partnership and shared resources. Hire experts from the employer as part-time lecturers to teach. At the same time, school professional teachers are sent to lead students to practice in the production line of the employer, so as to cultivate students' skill level and improve their practical ability.

4.2.2 Curriculum system

Curriculum system is the guarantee of the quality of logistics talents training. According to the training goal of logistics management talents in higher vocational colleges, the curriculum system should include four aspects, namely, professional teaching plan, quality development plan, innovation ability training plan and practical skills training plan. First, the professional teaching plan. It should include basic theory courses, core professional courses, featured elective courses and professional analysis tools courses. At the same time, it is necessary to introduce advanced ideas and concepts of professional frontiers and high-tech knowledge. Second, the quality development plan. The second class is set up to improve the core quality of students majoring in logistics management, and to strengthen the cultivation of four modules: ideological and moral, traditional culture, professional quality and physical and mental quality. Third, the innovation ability training plan. Offering innovation and entrepreneurship courses, organizing various forms of off-campus activities, organizing various student associations, holding on-campus skill competitions, and actively participating in association competitions, industry competitions, provincial competitions and national competitions. So as to cultivate students' comprehensive ability. Fourth, practice the skills training plan. Build an appropriate training base on campus, and design a training week for special training in teaching. At the same time, strengthen cooperation with employers and consider the "2+1" mode of talent training, that is, students learn skills in enterprises in the last year.

In the whole process of talent training, the combination of theoretical education and practical exercise, on-campus education and off-campus education will comprehensively cultivate applied logistics management talents with comprehensive quality.

4.2.3 Teaching methods

The training of logistics management talents in higher vocational colleges should focus on promoting students' initiative and consciousness in learning and adopt heuristic teaching. The teacher's job in class should be to guide and instruct, assign learning tasks, and drive students' learning with tasks. Actively apply information-based teaching tools to actively assist teaching, such as superstar learning

pass and cloud classroom. Assigning tasks, sharing materials and online assessment on the teaching information platform. Make students have pressure and motivation to study. In addition, teach students the methods of self-study, such as Feynman learning method, mind mapping, pomodoro technique, etc. At present, the teaching methods advocated by higher vocational logistics management education are: project teaching method, situational teaching method and case teaching method, which are all good attempts.

#### 4.3 Promote the total quality management of logistics management personnel training

Improving the quality of logistics management personnel training involves many aspects, such as the quality of students, the construction of teaching staff, the construction of practical training bases and so on, which are also the guarantee conditions of logistics management personnel training mode.

##### 4.3.1 Keep the quality of students close

Enterprises introduce total quality management (TQM) to ensure product quality, among which the quality of raw materials is the basis of product quality, and the important goal of purchasing department is to ensure the quality of raw materials. Similarly, in order to ensure the quality of logistics management personnel training, the control of student quality becomes the key. Therefore, the admission department has a great responsibility and should study and research the relevant theories and skills of admission. Consider the following points. First, extensive publicity, expand the coverage of information. To enhance the visibility of the logistics management major of the school by brightening the enrollment publicity materials, enriching the network publicity carrier and strengthening the on-site publicity effect. Second, reform policies to enrich the source of students. Make good use of Anhui Province's classified enrollment policy, design scientific and reasonable examination questions, find and recruit excellent candidates, and strive to get the world to teach them. In addition, higher vocational colleges can make use of alumni relations and business contacts between high schools and technical secondary schools to establish student base, formulate relevant policies to strengthen the construction of student base, and recruit more high-quality students on the basis of mutual benefit. Third, improve the service level, stable candidates. Specifically for the candidates to provide relevant services, is professional and patient to answer candidates' inquiries and questions, so that candidates feel completely satisfied. Vocational colleges should select responsible, skilled, clear thinking, good communication staff to provide candidates with on-site, telephone, email, fax and other ways of consultation activities, stable candidates' voluntary filling.

##### 4.3.2 Construction of applied logistics management teaching staff in higher vocational colleges

The quality of logistics teachers is the guarantee of the training quality of logistics management talents, and a team of teachers with excellent comprehensive quality and up-to-standard professional ability should be built. First, to enhance teachers' motivation, colleges and universities should enhance teachers' sense of belonging and responsibility. Teachers' professional ability is of course important, but the sense of responsibility of teaching and educating people and the strong willingness to contribute to the school are more important. The design of professional title system and reward mechanism in colleges and universities should be scientific and reasonable. Second, strengthen the construction of "double-qualified" logistics management professional teachers, cultivate teachers who combine teaching theory with practical ability, encourage and support teachers to go deep into enterprise practice and take temporary training, bring enterprise practical experience back to teaching, and enhance the vividness and practicality of classroom teaching. Third, encourage and support teachers' teaching and research. Higher vocational logistics management teachers should communicate with enterprises more, strive for the horizontal topics of enterprises and participate in the consulting activities of enterprises. Fourth, integrate external resources to solve the shortage of compound teachers. Use the partner enterprises in the supply chain of logistics management talents, hire enterprise technical experts as visiting professors or part-time lecturers, and establish a part-time teacher team with practical experience.

## 5. Concluding remarks

Higher vocational logistics manager is the society in urgent need of talents. Higher vocational colleges should constantly explore the logistics management talent training innovation, only in this way, to adapt to the constantly changing logistics talent market demand, find their own development direction and positioning. This paper introduces the theory of supply chain management into the training mode of logistics management personnel in higher vocational colleges and compares the supply chain of enterprise supply chain and the supply chain of logistics management personnel training in higher vocational colleges. From the perspective of system engineering, the author analyzes the training of logistics management talents in higher vocational colleges, improves the total quality management of talents, optimizes the communication mechanism between the source of students, higher vocational colleges and individual units, improves the original supply and demand relationship, realizes their seamless connection, and finally realizes the satisfaction of the source of students, colleges and universities, employers, student groups and society.

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**About the author:** Shen jiaxing(1982,12—),male, born in Yanjin County, Henan Province,Anhui Technical College of Industry and Economy lecturer,The research direction is supply chain management.