

# Build A Multi-Dimensional Collaborative Logistics Talent Training Model –Taking Chengdu University of Information Technology as an example

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**Abstract.** The "Opinions of the Ministry of Education on Accelerating the Construction of High-level Undergraduate Education to Comprehensively Improve the Ability of Talent Training (Jiao Gao [2018] No. 2)" clearly requires that the formation of a high-level undergraduate talent training system should be accelerated around the overall improvement of talent training capabilities. After 18 years of development, the logistics major of our school has made certain achievements in professional construction, teacher team construction, teacher teaching ability construction and experimental teaching guarantee construction, forming a relatively complete **talent** training system, but the social adaptation of talent training Sex still needs to be improved. This paper adheres to the problem orientation, based on the concept of collaborative education, and builds a multi-dimensional collaborative education talent training model from multiple perspectives, such as promoting the integration of production and education, condensing professional characteristics, implementing segmented training and building a capacity improvement system, and comprehensively improving the ability of logistics personnel training.

## 1 Introduction

Chengdu University of Information Technology (hereinafter referred to as CUIT) was established in 1951 and started undergraduate education in 1978. It is a provincial key undergraduate college jointly established by the Sichuan Provincial People's Government and the China Meteorological Administration. It is the national basic capacity building engineering university in the central and western regions of the country, the first batch of pilot universities for the "Excellent Engineer Education and Training Program", and the first batch of "first-class discipline construction" universities in Sichuan Province. Moreover, it is the deputy head unit of the national CDIO engineering education model pilot working group and the only official member of the international CDIO organization in western universities. Chengdu University of Information Technology currently has three logistics undergraduate majors: logistics management, logistics engineering, and supply

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chain management. Together with e-commerce majors, they form a relatively complete logistics professional group. Facing the needs of regional economic development and the development of modern logistics industry, cultivate senior professionals who master logistics development policies, are familiar with international logistics operation rules, and can engage in logistics production and operation management, logistics information technology development and management, modern logistics planning and consulting services, supply chain management and logistics system optimization.

## **2 The current situation of logistics personnel training**

### **2.1 The pace of professional construction is gradually accelerated**

CUIT logistics major has a long history of running a school. At present, there are three undergraduate majors in logistics management, logistics engineering and supply chain management. The logistics management major was the first to run a school. In 2004, it was admitted through the formal examination. In 2020, it was approved as a provincial-level first-class undergraduate major construction site. The logistics engineering major officially started enrolment in 2007, and the school optimized and upgraded the major according to the needs of talent training, and the major has stopped enrolment in 2020. Supply chain management is the second batch of majors in the country and the first batch of enrolment in Sichuan Province. It has been approved and started to recruit students in 2020. At present, more than 1,500 students majoring in logistics have graduated, and they are widely employed in large logistics companies such as JD, Sichuan Airlines Logistics, Maersk and Deppon.

### **2.2 The structure of the teaching team is gradually reasonable**

The logistics major has a total of 30 full-time teachers, and the team has a high academic level and academic level, and the age structure and professional title structure are reasonable. First of all, the structure of professional titles is relatively reasonable, with 4 teachers with senior professional titles, 11 teachers with deputy senior professional titles, and 15 teachers with intermediate professional titles. Secondly, the educational level is high, with 16 doctors and 11 masters. Finally, the age structure is appropriate, mainly young and middle-aged teachers. There are 9 young teachers under the age of 35 and 14 teachers between the ages of 36 and 50. A young and vigorous teaching and research team has been basically formed. After years of construction, the distribution of teachers in the core courses of various majors is relatively balanced, and the distribution of professional titles and academic qualifications of the teachers of each compulsory course is more scientific and reasonable, which provides a good support for the training of talents.

### **2.3 Gradually improve the teaching ability of teachers**

The college improves teachers' teaching ability and level through multiple channels. For new teachers, the college will implement a teacher training system of induction training, regular observation and teaching, and experienced teacher to help young teachers quickly adapt to course teaching. Hold various types of teaching competitions, organize young teachers to observe and study, actively learn from the teaching experience of excellent teachers, and improve classroom teaching efficiency. Through these series of measures, teachers' teaching has been gradually improved, and the teaching effect has gradually improved. Three teachers have won awards in various teaching competitions. The teaching

team actively participates in teaching and research activities, and the teaching reform has achieved remarkable results. In the past three years, it has been approved for 2 undergraduate teaching engineering projects above the provincial level, 13 undergraduate teaching engineering projects, and 2 school-level teaching achievement awards (1 first prize and 1 third prize).

## **2.4 Continuous improvement of experimental teaching conditions**

After years of construction, the logistics major of Chengdu University of Information Technology has gradually formed a practical teaching system with on-campus laboratory construction as the core, off-campus practice bases as supplements, and on-campus-off-campus synergy. The college has a provincial demonstration teaching center - economic and management experimental center, two professional laboratories - logistics professional laboratory and e-commerce professional laboratory (the logistics laboratory was supported by the 2009 central and local financial joint construction project, signed a contract with JD in 2018 to jointly build an e-commerce laboratory), and the college's innovation and open laboratory. The established experimental conditions can better meet the requirements of logistics personnel training objectives.

Accelerate the construction of off-campus practical teaching conditions. Adhere to the combination of government, industry, school and research institutions, and stimulate students' interest and potential in learning by carrying out "learning by doing" education. There are four practical teaching platforms in Chengdu International Railway Port, Shuangliu Free Trade Zone, Wuhou New City, and Qingbaijiang Modern Logistics Research Institute. The college is actively connecting with the resources of the provincial logistics and supply chain management industry associations and establishing a corporate practice training base. It has basically formed a practical teaching system supplemented by more than 30 enterprise practice bases such as JD Logistics, Sichuan Airlines Logistics, Lahuobao Network Technology, Hongtu Logistics, Hanfeng Logistics, Suning Logistics and Sichuan Logistics.

## **3 Problems that need to be solved in the training of logistics talents**

### **3.1 The integration of resources in local colleges is not enough, and the characteristics of talent training are not strong**

The school continuously integrates on-campus and off-campus resources to improve the characteristics of talent training. However, the integration of talent training resources among colleges is not enough, and high-quality teaching resources are scattered in different colleges. The separated management system of colleges formed over the years has led to the inability to fully share high-quality teaching resources within the school, which is not conducive to the improvement of the quality of undergraduate talent training. For a long time, the students of cultural management have formed a theory that emphasizes economic management, but the degree of integration with modern information technology is not enough, which leads to the long-term problems of unreasonable knowledge and ability structure of cultivated talents. How to effectively connect new liberal arts and new engineering, integrate multiple resources, achieve cross-integration, and enhance the characteristics of talent training is an urgent problem to be solved.

### **3.2 Students lack of awareness of innovation and entrepreneurship, and their enthusiasm for learning theoretical courses is not high**

For a long time, logistics management-related majors have mainly accepted liberal arts students, and their awareness of innovation and entrepreneurship is not strong. The first class and the second class cannot be effectively combined, and the positive impact of senior grades on lower grades is insufficient. The scale of logistics-related teaching competitions is not large, and most of the competitions do not have provincial competitions. The competition rules and models of two teams in one school cannot meet the urgent requirements of most students to participate in subject competitions. There is still a lot of room for improvement in teachers' teaching ability. Teachers' scientific research and teaching are separated, and the latest research results and scientific research projects cannot be fully absorbed into the teaching of professional courses. The social adaptability of logistics talent training still needs to be strengthened. Implement CDIO and flipped classroom reforms to adapt to national, industry and professional needs, connect scattered knowledge through project-driven, increase process-based assessment, stimulate students' intrinsic motivation to learn, and improve the breadth and depth of course learning.

### **3.3 Students have poor practical ability and cannot quickly adapt to social needs**

Logistics majors are highly applicable, but most talent training lacks the participation of industry experts, lacks a stable practice base, and collaborative education is imminent. Most teachers have no practical experience in enterprises, research and teaching are disconnected, and they cannot carry out project-based teaching. There is a certain deviation between the theoretical knowledge learned in schools and social reality, which leads to the long-standing problem that students are not strong in practical ability and cannot quickly adapt to the needs of society. How to solve the problem of ability structure from the mechanism of the disconnection between teachers' scientific research and teaching, and the lack of students' practical ability and innovation ability is still an important problem to be solved at present.

## **4 Integrate resources to build a logistics talent training model of multi-dimensional collaborative education**

Taking serving local economic development as the starting point, relying on resources such as Sichuan E-commerce and Modern Logistics Research Center (the provincial key research base for philosophy and social sciences), Qingbaijiang Modern Logistics Research Institute, and the CICE project authorized by the Royal Society of Logistics and Transportation to build a school-enterprise A talent training system with deep integration and coordinated development of production and education.

### **4.1 Adhere to the integration of production and education to improve the social adaptability of talent training**

Adhere to the combination of government, industry, school and research institutions, and stimulate students' interest and potential in learning by carrying out "learning by doing" education. Adhere to the talent training concept of "from industry and service industry", and cultivate senior logistics talents with strong professional skills and international vision. According to the national strategy and regional industrial structure adjustment needs,

industry development needs, enterprise employment standards and job setting requirements, adjust talent training goals and professional curriculum settings, increase the proportion of practical teaching, continue to promote the integration of production and education, and improve correspondence degree of logistics talent training and industry needs.

#### **4.2 Connecting with international and domestic resources to condense the characteristics of logistics talent training**

Adapt to the new pattern of economic and social development in the national major regional strategy, fully integrate resources, and condense the characteristics of logistics talent training. Adhere to the concept of "demand orientation, multi-dimensional integration, school-enterprise cooperation, and collaborative education", integrate international and domestic resources, actively explore new models of multi-dimensional collaborative education, and promote active project cooperation, professional co-construction, and resource sharing between schools and enterprises. Establish a double-qualified teacher team, and improve the talent training teacher guarantee system mainly based on the teachers of the school, governmental leadership, association experts, business executives, and well-known professors at international and domestic.

Integrate on-campus and off-campus resources, create a high-quality characteristic professional course group, and enhance the characteristics of logistics talent training. Deepen cooperation with important international organizations, based on the CICE project and the international joint talent training project of the Bad Homburg University of Applied Sciences in Germany, to innovate and improve the international logistics course group. Promote the integrated development of two first-class undergraduate majors in e-commerce and logistics management, optimize and upgrade the JD class, and create an e-commerce logistics course group with college characteristics. Strengthen and enhance students' international logistics and e-commerce logistics capabilities.

#### **4.3 Promoting the reform of talent training in three-stage training and two-division**

Create a positive atmosphere for the cultivation of logistics talents. Combined with the school's talent training goals, reform the talent training model, gradually promote large-scale enrollment, and divide the four-year university into three stages, and gradually form a progressive "three-stage" talent training model of perceptual cognition (first-year university), simulation deepening (second-year and third-year university), and innovative improvement (four-year university). Combining students' interests, aspirations and strengths, fully respecting students' wishes and taking into account the actual professional development to conduct two diversions(In the middle of the first two periods, at the end of Term 1 and the end of Term 4), and encourage students to develop in multiple ways, stimulate the endogenous power to improve the quality of professional education, and ensure the overall improvement of the quality of logistics personnel training and the sustainable development of discipline and professional construction.

**Table 1.** Basic situation of professional construction

Index	Logistics management	Logistics engineering	Supply chain management
Admissions start time	2002	2008	2020
Enrollment scale (2021)	80	0	80
Type of degree awarded	Bachelor of Management	Bachelor of Engineering	Bachelor of Management
Total credit requirements	160	165	160
The proportion of practical teaching	32.3%	35%	30.9%
Professional construction results	Provincial first-class undergraduate professional construction point	N/A	N/A

#### 4.4 Build a capability improvement system that reflects the characteristics of applied talent training

Put "establish of virtue and cultivate talents" in the first place, organically combine the three of value shaping, knowledge transfer and ability training, and shape the correct world outlook, outlook on life and values. Increase innovation and entrepreneurship courses to enhance college students' awareness of innovation and entrepreneurship; guided by strengthening the ability of practical innovation, give full play to the role of professional competitions, and implement the whole process of innovation and entrepreneurship education.

Combined with the three-stage training requirements, the lower grades mainly improve students' mathematical and professional foundation, improve students' learning ability and organizational ability, and lay a solid foundation for the simulation deepening stage and the innovation promotion stage. Students in the upper grades can combine their professional direction, to enhance professional practical ability and practical innovation ability.

Establish a comprehensive evaluation system combining quality, knowledge, and ability, focusing on examining students' ability to analyze and solve problems, practical ability, innovation and entrepreneurship, and implement external evaluation and open assessment.

**Table 2.** Teaching faculty team

Index	Title structure			Degree structure			Age structure		
	Professor	Associate Professor	Lecturer	Doctor	Master	Bachelor	Under the Age of 35	36 to 50	Over 35 years old
Number of people	4	11	15	16	11	3	9	14	7
Proportion	13.33%	36.67%	50.00%	53.33%	36.67%	10.00%	30.00%	46.67%	23.33%

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