



A Study on the Training Model of Logistics Management Professional Talents Based on “Four Party Collaboration, Integration of Courses and Certificates, and Stereoscopic Evaluation”

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Abstract

Over the past 40 years of reform and opening up, China's logistics industry has developed rapidly, resulting in a shortage of high-quality skilled logistics professionals such as warehouse management, distribution management, and transportation management. In the context of dual high education, rapidly and effectively improving the high-quality training of logistics talents in vocational colleges is an effective guarantee for the rapid and sustainable development of China's logistics industry. This article proposes the construction of a "four-party collaboration" logistics talent education mechanism for deep integration of schools and enterprises, integrating job practice training, course learning, skill competitions, and 1+X certificate acquisition. It constructs an integrated education model of "job course competition certificate" guided by job requirements, constructs a multi-dimensional talent training evaluation system for politics, schools, and enterprises, and creates a high-quality "double teacher" teacher team recognized by the industry and mutually hired by schools and enterprises. Through the complementary advantages of schools and enterprises, measures such as forming a mutually beneficial and win-win cooperative education pattern can promote the development of logistics talents in vocational colleges.

Keywords

On-the-job course competition certification, dual teacher, four-party collaboration, evaluation

1. Introduction

With the continuous growth of the supply chain and blockchain scale, the layout of intelligent warehouses is becoming increasingly reasonable, and the guarantee conditions are becoming increasingly perfect. In 2021, the total amount of social logistics remained above 300 trillion yuan, and the total revenue of the logistics industry exceeded 11 trillion yuan. The overall operation of logistics was stable and progressing. In 2022, under the impact of the epidemic in the 21st century, the transformation of the century will accelerate, and the global industrial chain supply chain will continue to adjust. China's economic development will face triple pressures of shrinking demand, Supply shock, and expected weakening, which will put a severe test on the development of modern logistics and supply chains.

The 20 Rules of Vocational Education clearly points out that "as China enters a new stage of development,

industrial upgrading and Economic restructuring are accelerating, the demand for technical and skilled personnel in all walks of life is becoming more and more urgent, and the important position and role of vocational education is becoming increasingly prominent." The Opinions of the Ministry of Education and the Ministry of Finance on the Implementation of High-level Vocational Schools and Specialty Construction Plan with Chinese Characteristics (Jiao Zhi Cheng, 2019) pointed out that, The level of education, service capabilities, and international influence of vocational schools and professional groups included in the plan have significantly improved, playing a demonstration and leading role in the reform and development of vocational education and the cultivation of tens of millions of high-quality technical and skilled talents. In the context of dual high education, rapidly and effectively improving the high-quality training of logistics talents in vocational colleges is an effective guarantee for the rapid and sustainable development of China's logistics industry.

2. Theoretical basis

2.1 Theory of "Collaborative Education"

Synergetics originated in physics and are now widely used in natural and social sciences. The application of systems or elements in a certain field to the education system generates connections and synergistic effects and affects the functionality and effectiveness of the education system. This teaching method is called collaborative education, and the collaborative teaching relationship between universities and enterprises is called school-enterprise collaboration.

2.1.1 Synergistic effects

Synergistic effect is a fundamental concept in the theory of synergetics, which refers to the overall or collective effects generated by the interaction of a large number of subsystems in a complex open system. In a system, each subsystem has complementary relationships that, under the influence of self-organizing internal or external forces, transform from disorder to order, resulting in overall synergistic effects. Any complex system, under the influence of external energy or when the aggregation state of matter reaches a certain critical value, will generate a synergistic effect between subsystems. This synergistic effect can cause the system to undergo a qualitative change at the critical point and produce a synergistic effect, making the system from disordered to ordered, and generating a stable structure from chaos.

2.1.2 Collaborative Innovation

Collaborative innovation is the diffusion and application of synergetic theory in the field of scientific and technological innovation. It constructs different innovative elements into a dynamic operating survival system, establishes resource sharing and optimized allocation among each element, and ultimately generates synergistic effects in the field of innovation. In general, collaborative innovation refers to a resource integration model established between the government, schools, enterprise research institutes, intermediary agencies, and consumers, with the goal of talent cultivation and utilization, technological research and development, and knowledge appreciation. Collaborative innovation is a more complex organizational form of innovation, and its key is to form a multi-subject collaborative interaction model with universities, enterprises, and research institutions as core elements, government, financial institutions, intermediary organizations, innovation platforms, non-profit organizations, and other auxiliary elements.

2.1.3 Collaborative Education

Collaborative education is one of the core concepts in the concept system of collaborative innovation. Under the leadership of the government, collaborative innovation between schools, enterprises, industries, intermediaries, and research institutions has two objectives: talent cultivation and utilization, and technology research and development and knowledge appreciation. These two objectives are closely related and cannot be separated. If they are separated, it will be difficult for various elements of the system to interact and generate synergistic effects effectively. For universities, talent cultivation must be open, which inevitably involves the issue of building a talent cultivation community with relevant resources. If universities limit education to educational activities on campus, it is impossible to cultivate the talents needed by society.

2.1.4 The relationship between collaborative innovation and collaborative education

Collaborative innovation is the integration of various innovation elements and the unobstructed flow of innovation

resources within the system. Collaborative education refers to the effective interaction between various educational entities, with the aim of talent cultivation and utilization, to share resources and accumulate energy within the system. Collaborative innovation is the fundamental concept of collaborative education, covering collaborative education; Collaborative education is a collaborative innovation model in which schools, as the initiative of System integration, take talent training as the core purpose. The essential pursuit of collaborative education and collaborative innovation is consistent, both of which aim to achieve the optimal development of various collaborative elements by pursuing the overall optimization of the collaborative entity; Collaborative education and collaborative innovation are also consistent in their driving mechanisms, both driven by internal and external factors, as well as market and cultural factors. Collaborative education and collaborative innovation interact, and collaborative education enriches the connotation of collaborative innovation at the micro level.

2.2 Theories related to school-enterprise cooperation

School enterprise cooperation refers to a cooperative model established between schools and enterprises. The current social competition is fierce, including in the education industry, vocational education institutions such as universities and vocational colleges, in order to seek their own development, improve the quality of education, adopt a cooperative approach with enterprises, and cultivate talents for enterprises in a targeted manner, emphasizing the practicality and effectiveness of talents. School enterprise cooperation is a "win-win" model that emphasizes the quality of training, school learning and enterprise practice, and the sharing of resources and information between schools and enterprises. The school-enterprise cooperation has achieved a new concept of meeting the needs of society, aligning with the market, cooperating with enterprises, and combining practice with theory, bringing spring to the development of the education industry.

2.2.1 The Theory of Modern Apprenticeship

The "modern apprenticeship system" education is a new educational system created by combining the long-standing apprenticeship system with the modern educational system, taking advantage of the advantages of the traditional apprenticeship system, combining the characteristics of modern education and the needs of enterprises. In essence, modern apprenticeship education emphasizes the guidance of teachers to students and the combination of learning and action in the learning process.

2.2.2 Theory of "Integration of Engineering and Learning"

The combination of engineering and learning has better guiding significance for vocational education in China. The "combination of engineering and learning" education model has a long history, which can be traced back to the "sandwich" education model implemented by the Engineering Department and the Civil Engineering Department of the Sandland Institute of Technology in the UK in 1903. In 1906, the University of Cincinnati in Ohio, USA, began implementing a basically identical model of integrated engineering and learning education as in the UK, known as "cooperative education". The World Cooperative Education Association was established in the United States in 1983. In 2000, the Council of the Association decided through discussion to change cooperative education to "learning combined with work", in order to further highlight the basic characteristics of the combination of work and learning from the name and facilitate understanding.

3. Current situation

Through research and interviews on the modern logistics management major of Binzhou Vocational College, a typical vocational college in Shandong Province, it was found that there are several prominent problems in the talent cultivation process of modern logistics management majors in vocational colleges.

3.1 Mismatch between talent cultivation and enterprise needs

In recent years, the quality of vocational education talents has lagged behind the technological transformation of high-end industries, and the structural imbalance between the technological revolution, industrial transformation, and the education system has become the main problem that troubles the development of vocational education. Currently, the training goals and ideas of modern logistics management talents in higher vocational colleges are not clear enough, and the structural contradiction of "some people without jobs, and some people without jobs" in student employment is very prominent, these talents cultivated by schools cannot be used by enterprises, and must be transitioned through

pre-job training, which has long cycles, high costs, and poor benefits.

3.2 Insufficient support from government, administration, and enterprise for talent cultivation

At present, most vocational colleges adhere to the "open door" educational philosophy in their education. However, there are still shortcomings in educating students together with the government, industry associations, and cooperative enterprises. Firstly, they face insufficient policy and funding support from government departments; Secondly, insufficient guidance and resource coordination from industry associations; There are many agreements signed between schools and enterprises, but effective cooperation is limited, and cooperation becomes mere formality; Third, cooperation between schools and enterprises is fragmented, with poor connection, unclear cooperation goals, insufficient collaboration, and difficulty in supporting talent cultivation.

3.3 Imperfect talent cultivation evaluation and guarantee system

In terms of the design of the evaluation system, there are still a series of problems in the training of modern logistics management professionals in vocational colleges, such as formality, inconsistent standards, single evaluation methods, single content, single subject, and lack of continuous improvement mechanisms. At the same time, the construction concept of the quality assurance system for logistics talent cultivation is not new. In the evaluation, the professional monitoring is not complete and the coverage is not comprehensive, especially the evaluation of the value-added of logistics talents is insufficient, which cannot effectively ensure the quality of talent cultivation.

4. Effective Measures

4.1 Constructing a logistics talent education mechanism for deep collaboration between schools and enterprises

In response to the issue of insufficient support for talent cultivation by government agencies and enterprises, we will explore a talent cultivation mechanism that includes government regulatory departments providing policy and funding support, industry associations formulating standards, four-party division of labor and responsibility, and each performing their respective duties. We will establish a "four-party collaborative" education mechanism that includes "government guidance, school leadership, industry guidance, and enterprise participation", optimize the existing talent cultivation mode for logistics management professionals, and implement plan sharing and outline sharing through schools and enterprises. Course co-construction, task sharing, student co-management, personnel co-employment, resource sharing, and problem-solving, forming a cooperative education pattern of complementary advantages and mutual benefits.

Through more than 20 industry associations such as the China Logistics Association and the Shandong Workers' Education Association, we have joined forces with Zhongyu Food Co., Ltd. to establish Zhongyu Industrial College and establish a school and college council. We will take multiple measures to actively integrate into the industry, connect with industries, and serve enterprises, continuously strengthen communication and exchange with logistics enterprises and institutions, and continuously enhance industry and social influence.

4.2 Constructing an integrated education model of "job course competition certificate" guided by job requirements

In response to the issue of mismatch between logistics talent cultivation and the demand for talent in enterprise positions, the cultivation concept of "matching professional construction with industry standards, and matching academic education with job skills" is integrated throughout the entire process of talent cultivation. By comparing the professional standards of China's logistics industry (warehousing, distribution, transportation, etc.) with the national professional skills standards (logistics service engineers, logistics engineers, logistics professional managers, etc.), and combining with the talent needs of the logistics industry, Integrate the "1+X" vocational skill level standard and achieve the joint determination of training standards by government, school, and enterprise.

Determine course standards and evaluation standards according to the requirements of the job qualification certificate, and integrate the knowledge content and skill requirements of the job position into the professional course system according to modules; Establish a "four in" mechanism, implement the integration of enterprise equipment into schools, enterprise logistics engineers into classrooms, enterprise case studies into courses, and enterprise culture

into classrooms, establish "order classes", reform the teaching methods of "integrating theory with practice" and "alternating engineering with learning", organically integrate course ideology and industry style, and achieve effective connection between course positions and seamless integration of talent supply and demand between schools and enterprises.

We have constructed a "134" practical teaching system, with vocational ability cultivation as the "mainline", utilizing three platforms of internship training, scientific research innovation, and industry qualifications to cultivate students' practical abilities through four stages of foundation, major, profession, and innovation. Industry standards and job requirements run through the entire process of theoretical and practical teaching, integrating job practice exercises, course learning, skill competitions, and obtaining 1+X vocational skill level certificates. A "job course competition certificate" integrated training model for logistics talents is constructed to ensure the effective integration of academic education and vocational qualification training and the effective implementation of the "1+X" certificate system.

4.3 Establishing a multi-dimensional talent training evaluation system for government schools, enterprises, and enterprises

In response to the issue of incomplete talent cultivation evaluation and guarantee system, with the fundamental principle of cultivating talents required by enterprises and industries, we explore ways for schools and enterprises to jointly formulate training standards and evaluation systems, construct a practical and feasible evaluation system for logistics management majors in vocational colleges, and formulate corresponding evaluation standards. At the same time, explore the introduction of an annual comprehensive literacy assessment, professional ability radar chart, and score change curve chart based on students' learning situation, comprehensively analyze students' learning situation and progress level, promote teaching method reform and students' self-reflection and self-correction in learning.

Carry out the construction of a quality assurance system for the cultivation of multi-dimensional logistics professionals in government, school, and enterprise under the excellent performance model. Covering the entire stages of student enrollment, university learning, enterprise practice, and job employment through "system guarantee, process monitoring, evaluation feedback, and continuous improvement", it runs through the entire process of talent cultivation, effectively ensuring the quality of talent cultivation.

4.4 Build a high-quality "dual teacher" teacher team recognized by the industry and mutually hired by schools and enterprises

Exploring a teacher team building model of "internal training and external introduction, combined with specialized and part-time teaching", improving teachers' scientific research and practical abilities through visiting for further education and joint research on enterprise technology, enhancing teachers' international perspective through overseas training, and improving theoretical teachers' practical level through professional training and on-the-job training; Logistics enterprises improve their theoretical level through experts entering the classroom, managing students, concurrently managing, serving as professional construction leaders, and part-time professors.

Integrate the construction of teacher ethics and professional conduct into industry style, closely integrate party building, teacher ethics, and logistics curriculum ideological and political education, create a "party building red" leading "logistics green" teacher construction brand, cultivate excellent course teams and excellent teaching and research rooms, and build a high-level "double teacher" teacher team that combines full-time and part-time work, school-enterprise mutual employment, and famous teacher guidance, providing strong support for talent cultivation.

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