Research on the Construction of Cold Chain Logistics Specialty in Transitional Universities in Jilin Province from the Perspective of Low Carbon Economy Development

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Abstract. The traditional cold chain logistics hinders the development of low-carbon economy in Jilin Province. At the same time, China's cold chain logistics talents are scarce, while cold chain logistics education is relatively lagging, education resources are scarce, and the supply and supply of cold chain logistics talents cannot meet market demand, leading to the development of cold chain logistics. Has been stagnant. Based on the perspective of low-carbon economy, the analysis considers that it restricts the bottleneck of low-carbon cold chain logistics development in Jilin Province. At the same time, after exploring the training model of cold chain logistics talents in the transitional undergraduate colleges in Jilin Province, this paper puts forward some solutions to the problems existing in the training of cold chain logistics talents.

1. Introduction
In recent years, low-carbon logistics, which is characterized by low energy consumption, low emissions, low pollution and high efficiency, has become an inevitable trend in the development of the logistics industry. It helps to promote economic restructuring and industrial upgrading to improve the level of logistics development. In the low-carbon economic development environment, cold chain logistics as a huge industry, its effective implementation will help reduce energy demand and carbon emissions, optimize logistics combination methods and processes, rationally allocate transportation resources, reduce transportation costs, and increase environmental benefits. In turn, the steady and sustainable development of agricultural cold chain logistics is realized. However, despite the strong comparative advantage of agricultural production in Jilin Province, due to the lagging development of cold chain, most of the exports are primary products and lack competitiveness in the international market. In particular, with the continuous improvement of import standards for imported agricultural products by the developed countries such as the European Union, Japan, and the United States, relevant quality, technology, and green barriers have become important obstacles restricting the export of agricultural products in Jilin Province. The transformation of agricultural product export mode and the adjustment of export structure in Jilin Province put forward higher requirements for the development of cold chain logistics of agricultural products. Accelerating the development of cold chain logistics of agricultural products is an important measure to improve the quality of export agricultural products, break through
trade barriers and enhance international competitiveness. These backgrounds place high demands on the professional competence level of cold chain logistics management talents in Jilin Province.

2. Cold chain logistics talent ability requirements
Based on the characteristics of the cold chain logistics industry, cultivating professionals who are capable of meeting the needs of the post is crucial to the healthy development of the cold chain logistics industry. According to the "Training Requirements for Cold Chain Logistics Employees" issued by the China Federation of Logistics and Purchasing (T/CFLP0005-2017) [1], cold chain logistics personnel can be divided into logistics personnel, assistant logistics personnel, intermediate logistics personnel and senior logistics personnel. The core knowledge and skills required for the four types of cold chain logistics talents are shown in Table 1.

| Post              | Core knowledge and skill requirements                                                                 |
|-------------------|--------------------------------------------------------------------------------------------------------|
| Logger            | 1. Familiar with the basic operation process of cold chain logistics;                                     |
|                   | 2. It can perform the processing, packaging, loading and unloading, distribution, storage and other operations of cold chain logistics products; |
|                   | 3. The ability to use refrigeration, insulation equipment and systems to ensure the safety and quality of cold chain cargo. |
| Assistant logistics man | 1. Familiar with laws and regulations related to cold chain logistics operations;                        |
|                   | 2. It is able to formulate implementation plans for cold chain cargo circulation processing, packaging, handling, distribution, storage, and the use and maintenance of facilities and equipment; |
|                   | 3. Ability to manage, supervise, direct, control, improve and evaluate cold chain operations;            |
|                   | 4. Ability to respond to accidents, pre-treatment, etc.                                                |
| Intermediate logistics staff | 1. With industry cognition and environmental change awareness, master the development of the cold chain logistics industry; |
|                   | 2. Ability to analyze the cold chain market and write an analysis report                                  |
|                   | 3. It is able to formulate management processes, quality control and evaluation for all aspects of cold chain logistics. |
| Senior logistics man | 1. Be able to clearly understand the development status and development trends of the cold chain logistics industry and related laws and regulations, and be familiar with the strategic goals and implementation plans of the company; |
|                   | 2. Ability to analyze the cold chain logistics macro market, industry development, customers, partners, competitors, industry frontiers, etc., write analysis reports, and develop enterprises |
|                   | Market development planning and business response strategies;                                           |
|                   | 3. Ability to plan, develop implementation plans, perform performance evaluations, etc. on facilities and equipment, information systems, etc. |
|                   | 4. Ability to conduct cold chain logistics strategic management and supply chain management.            |

3. The main problems in the training of cold chain logistics talents in colleges and universities

3.1. Cold chain logistics personnel training is the same as traditional talent training mode
At present, the training of cold chain logistics talents in colleges and universities in China still adopts traditional training methods. Most of the time, they learn theoretical knowledge in schools and lack practical experience. Due to the lack of funds and corresponding infrastructure, undergraduate colleges are also caught in this training mode of qualitative thinking, which seriously hinders the development
of China's cold chain logistics. Jilin Province's colleges are in the same mistake, and urgently need to go from the mistakes. Come out.

3.2. Cold chain logistics education theory lags behind practice
China's cold chain logistics started in the 1990s, although it started late, but the development is very rapid. A research report recently issued by the Center for Prediction and Research of the Chinese Academy of Sciences pointed out that the characteristics of the professional development of China's logistics industry in 2007 are more obvious, and will further strengthen the logistics system with strong professionalism such as cold chain logistics, dangerous goods logistics and emergency logistics [2]. People's production and life are safe. The practice of cold chain logistics has received the attention of governments at all levels and many enterprises. In contrast, the research on cold chain logistics is still in its infancy, the logistics theory foundation is weak, and the cold chain logistics education theory lags behind logistics practice.

3.3. Cold chain logistics talent training lacks school-enterprise cooperation
At present, most colleges and universities have established cold chain logistics talents based on their own schools. Students spend three-quarters of their time in school. What's more, students spend all of their four years studying basic theories, which is completely out of the logistics professional training talents. The requirements for undergraduate institutions must go beyond this wrong path in order to compete with ordinary undergraduate institutions. More importantly, only in this way can we cultivate useful talents for the society.

3.4. Lack of qualified teachers in line with modern cold chain logistics management
The cold chain logistics management profession is a new specialty in China, and the cold chain logistics management education is still in the exploration stage. Most professional logistics teachers in China have been transformed from management, accounting, international trade and other professions. They lack understanding of the cold chain logistics laws and rarely form their own theories. This will greatly affect the students' systematic knowledge of logistics. Therefore, the establishment of an appropriate number of well-structured, well-structured, cold-chain logistics faculty is the key to developing China's cold-chain logistics education and logistics.

3.5. Students are biased towards the acquisition of theoretical certificates
Most students in colleges and universities only pay attention to the acquisition of diplomas and degree certificates, and do not pay attention to the practice certificates. The results are obvious. Students learn all theories and have no practical knowledge.

4. Establishment of the training mode of cold chain logistics professionals in Jilin Province

4.1. Defining the goal of cold chain logistics talent training
The determination of the training objectives of cold chain logistics personnel. It is necessary to fully consider the industry and product characteristics of agricultural product logistics, focusing on the operation management of cold chain logistics enterprises and the needs of various links, and combining logistics represented by e-commerce, ERP and Internet of Things. The development trend of informatization is formed on the basis of integrating the above requirements. Therefore, this paper defines the goal of cold chain logistics personnel training as: the application of cold chain logistics integrated management talents as the direction, solid foundation, adaptable, emphasize application skills, highlight the characteristics of cold chain logistics, reflect the development of information north Basic requirements, cultivate a solid theoretical foundation of economics and management, master the general knowledge and skills of logistics operation management of production enterprises and circulation enterprises, familiar with the basic theory of cold chain logistics management, business operation procedures, specifications and related facilities and equipment, and Proficiency in the use of modern...
information management tools for enterprise cold chain logistics planning and design, project organization management, application-oriented logistics integrated management personnel for specific business operations.

4.2. Low-carbon economy cold chain logistics professional talent training mode

The low-carbon economy cold chain logistics professional talent training mode emphasizes the integrated project teaching. It is necessary to construct a 1-5-level decomposed teaching project system that is compatible with the curriculum system. Through reasonable teaching organization, students can be professionally basic knowledge and individuals. The four levels of ability, interpersonal team ability and system utilization ability achieve the predetermined training objectives. Therefore, based on this concept, in the construction of the cold chain logistics talent training mode of colleges and universities, it is necessary to consider two systems that are relatively independent in form and interrelated and complementary in operation, namely the professional knowledge module system and the teaching project system [3]. The relationship between the two is shown in Figure 1. In this system, the primary project is a comprehensive project that includes the main core curriculum and competency requirements of the cold chain logistics profession. Focus on cultivating students' core competencies; the second-level project is a multi-curricular curriculum, which includes a set of professional core curriculum competency requirements; the third-level project is designed to enhance the ability of the curriculum within a single course. The course project; the four-level project and the five-level project are unit group projects and unit projects based on a certain course of the major. Because the fourth and fifth grade projects need to be refined in combination with specific courses, only the third-level projects are discussed in the cold chain logistics talent training model constructed in this paper.

![Figure 1. Relationship between professional knowledge modules and teaching projects](image)

4.3. Based on the non-hierarchical cold chain logistics professional curriculum construction

Practice teaching is the deepening and development of theoretical teaching, and it is also an important platform for the development of cold chain logistics management professionals. Traditional undergraduate education has the disadvantages of the disconnection between theory and practice, the disconnection between school and society, the disconnection between unity and individuality. The practice teaching is attached to the curriculum teaching needs and professional teaching requirements.
The existing teaching objectives are single, the content is shallow, and the links are scattered. According to the characteristics of undergraduate education in cold chain logistics management, the establishment of an open practice education system is to incorporate all practical teaching links and other activities that students participate in beyond the theoretical teaching into the practical education, so that students can participate in all practical aspects of the school. And the extracurricular activities become an organic education system. In this open practice education system, it includes not only traditional experiments, training, internships, but also various discipline competitions, club activities, cultural and sports activities, and ideological and political education, as shown in Figure 2. This open practice education system mainly includes five supporting platforms:

Figure 2. Framework diagram of the practical teaching system of the transformational cold chain logistics management profession

1) Open experimental teaching platform
   It mainly includes practical teaching links such as basic experiments, simulation training, comprehensive experiments and design experiments. It can integrate experiments, training programs in finance, accounting, finance, auditing, marketing, finance, taxation, industry and commerce, logistics, human resources management, international trade, etc., and open interdisciplinary and cross-border financial investment, ERP, and e-commerce. Professional and cross-curricular comprehensive experiments guide students to apply multidisciplinary knowledge to solve problems in experimental training. In the teaching organization management, students should be oriented to the cold chain logistics management students, all projects, open all day, change the traditional experimental teaching organization mode of fixed time, fixed group, fixed instructors, take the appointment method, the students independently arrange the experiment time, The project not only increases the students' autonomy in the experiment, but also the interest of non-professional students.

2) Reciprocal school-enterprise cooperation platform
   Adhere to the principle of "deep cooperation, school-enterprise win-win", and establish close cooperative relations with enterprises and institutions, with school-enterprise joint construction bases, targeted talent training, "double-skilled" teacher team construction, and industry-university-research cooperation projects as the main content [4]. On the basis of building an internship base with the school, the company undertakes the responsibility of arranging student employment, arranging practical experts and technical experts to provide part-time teaching work, and providing positions for teachers to exercise
on the ground. At the same time, the school cultivates cold chain logistics management talents for enterprises, and has the obligation to cooperate with cold chain logistics enterprises in scientific research projects and provide expert consultation for enterprises. This platform can benefit schools, enterprises and students, and is an important platform for cultivating high-quality applied talents.

(3) Diversity social practice platform
That is to build a social practice platform of multiple forms and multi-person participation, with professional internships, graduation internships, social surveys, and holiday social practice as the main forms.

(4) Exploratory research activity platform
It is the main way for students to independently declare scientific research topics, teachers to absorb students to participate in research projects, students to complete graduation thesis (design) and students to complete scientific research papers independently.

(5) Design discipline competition platform
Including national and provincial subject competitions, inter-school competitions, school-sponsored academic competitions, various science and technology activities organized by schools and student associations, guiding students to participate in various competitions, improving students' ability to analyze and solve problems, and cultivating students Innovation and entrepreneurship.

5. Jilin Province college cold chain logistics professional advice

5.1. Encourage the establishment of cold chain logistics technology and management profession to meet the needs of economic development
It is necessary to strongly encourage vocational schools to set up cold chain logistics technology and management majors according to their own schooling characteristics and school-running needs, aiming at cultivating post-qualified graduates and achieving the scale training and output of cold chain logistics talents. Relevant departments of education, finance, personnel, etc., should provide support, preferential policies, funds, personnel and other aspects to the institutions that provide cold chain logistics technology and management, reduce the resistance of professional development, and work together to solve the shortage of cold chain logistics talents.

5.2. Employing a "scholar-type, expert-type" cold chain logistics professional teacher
The "double-type" teacher is a special requirement for professional teachers. It contains two aspects of quality and ability: one is professional theoretical knowledge; the other is professional practical skills. For the application-oriented private undergraduate colleges, although the dual-teacher training has received some attention, there are still many problems and urgent needs for improvement. We can train double-skilled personnel by means of domestic and foreign expert guidance, joint discussion with enterprise expert studios, and interviewing engineers to enterprises.

5.3. Establish a "dual-type" cold chain logistics talent training model
The application-oriented undergraduate colleges vigorously promote the combination of work-study training mode, which is an important direction of education reform under the new situation and the fundamental way to accelerate the development of education. Therefore, for private undergraduate colleges, a mechanism should be established for enterprises and schools, teachers and enterprises to jointly develop students. Students also have dual identities, aiming to maximize the use of the conditions and advantages of schools and enterprises, and strengthen theory and practice. In combination, an educational system that trains high-quality technical personnel with professional theoretical knowledge, professional skills and skills, and the ability to solve practical problems in the profession is cultivated.

6. Conclusion
The cultivation of cold chain logistics talents in colleges and universities is a relatively new field that needs further research and exploration. This paper introduces and draws on the low carbon economy
development concept and the objective requirements of professional knowledge and application skills in the cold chain logistics personnel training goal, and proposes the cold chain logistics constructed by the "five knowledge module system" and the "five-level teaching project system". The talent training model has both theoretical and operational operability.

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