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Original Paper

A Study on The Influence of the Development of Intelligent Logistics Industry on the Training of Modern Logistics Talents

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Abstract

Under the impetus of China's intelligent logistics industry development, logistics education in higher vocational colleges has achieved remarkable results. However, the demands of enterprises for modern logistics talent are undergoing significant changes, posing substantial challenges to the cultivation of professionals in vocational institutions. This paper mainly takes modern logistics management major as an example to explore how higher vocational colleges can cultivate skilled professionals that meet the job requirements of modern logistics enterprises under the background of intelligent logistics development how to incorporate the concept and the technologies of the intelligent logistics industry into the modern logistics vocational education to enhance the adaptability and train-ability of talent.

Keywords

Smart logistics, Talent cultivation, Higher vocational education

1. Introduction

The modern logistics industry is the field with the most active application and innovation ,of new information technologies such as artificial intelligence and big data，and the new round of AI wave triggered by DeepSeek will further accelerate the integrated development of artificial intelligence and the logistics industry. The cultivation of modern logistics talents in higher vocational colleges should promptly adjust teaching mode to keep up with industry demands, and strive to cultivate high-quality talents with modern and international logistics management and logistics engineering knowledge. Under the mode of industry-education integration, higher vocational colleges can closely cooperate with industry enterprises to combine practice with theory, enabling students to apply what they have learned in actual work and improve their vocational skills. In this case, enterprises can provide the latest industry development trends and technologies for the reform of the talent cultivation mechanism, teachers optimize the curriculum and teaching content, promote the transformation of scientific and

technological achievements, the enterprises and colleges jointly build a higher-level training base with both hands and expand international cooperation and exchanges. This paper explores the inspiration of the development of the intelligent logistics industry on the modern logistics talent training model. It combines the industry-education integration model to establish a new logistics talent training strategy, cultivating smart logistics talents that fit the development trend of modern logistics. The cultivation of intelligent logistics talents is not only the transmission of technology but also the shaping of comprehensive abilities.

2. Overview of the Development of the Intelligent Logistics Industry

2.1 Intelligent Logistics

Intelligent logistics refers to a modern logistics model that using Internet of Things (Io T), big data, artificial intelligence (AI), cloud computing, Block-chain, 5G communications and other new-generation information technologies to intelligently upgrade the transportation, warehousing, distribution, management and other aspects of the logistics system, achieving efficient collaboration, optimal allocation of resources and automated decision-making throughout the entire process of logistics.Its core goal is to improve efficiency, reduce costs, optimize user experience, and promote the development of the logistics industry in digitization, networking and intelligence. The upstream of the intelligent logistics industry chain is the hardware that including AS warehouse and various robots and the software such as MES; the midstream is the infrastructure and logistics transshipment links, and the downstream is the field of intelligent logistics services. Scholars generally believe that high-quality development of the logistics industry in smart logistics is an inevitable trend.

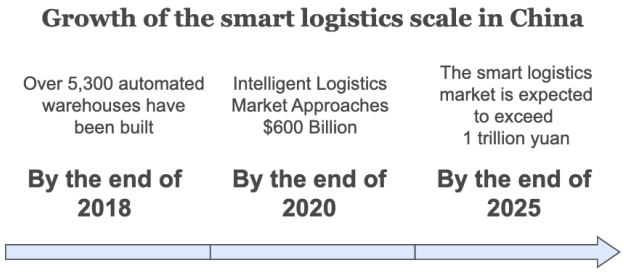

Figure 1. Growth of the Smart Logistics Scale in China

2.2 Trends of Intelligent Logistics Industry Development

2.2.1 Technology Innovation Drives Comprehensive Intelligent Logistics

Intelligent logistics integrated with Internet technology is driving continuous industry upgrades，Intelligent logistics operating systems based on Internet of Things (IoT) technology have begun to be implemented and propel comprehensive innovation and upgrades. Artificial Intelligence (AI) technology will extend along the Io T network to the entire logistics service chain, driving technological innovation in areas such as intelligent planning, digital routing, intelligent scheduling,

intelligent warehousing, intelligent allocation, and intelligent control. Big data analysis will be used to predict demand, optimize inventory and transportation routes, achieving the concept of letting data move instead of goods, thereby reducing redundant processes. Big data in E-commerce will enhance the efficiency of logistics delivery, with information of all the order being delivered in real-time to the company's distribution warehouses. Intelligent warehousing will be able to quickly search for the nearest warehousing center location based on the buyer's address, implementing the nearest delivery strategy.

2.2.2 Technological Upgrades Lead the Way for Customized Green Services

The widespread adoption of new energy logistics equipment will reduce carbon emissions and lower energy consumption. Using big data technology to analyze the actual conditions of logistics operations can achieve significant reductions in the time cost of material allocation, which in turn reduces environmental pollution and aligns with the requirements for green and sustainable development. Through intelligent service systems, the diverse and growing needs of consumers can be met, and the customer service experience can be enhanced.

2.2.3 Development of Trade Drives the Digitization of International Logistics

The increasing tension in the international situation and the rise in transportation costs have both accelerated the digital transformation process of international logistics companies. Using digital means, these companies can enhance their logistics service capabilities and, through digital transformation, make the entire logistics supply chain more resilient. More and more shipping companies are utilizing information technologies such as the Internet, block chain, and e-commerce to improve their maritime service capabilities. Port companies and border checkpoints are relying on digital technologies to gradually implement the construction of smart ports and smart checkpoints. Third-party logistics companies are using digital technology as a tool to enhance their own logistics service levels, achieve rational allocation of logistics resources, and create new logistics solutions that integrate online and offline connectivity, offering customers a brand-new experience.

3. Explore the Enlightenment of the Development of Intelligent Logistics Industry on the Training Mode of Modern Logistics Talents

3.1 Challenges Faced in Talent Cultivation for the Smart Logistics Industry

As a comprehensive discipline involving logistics, information technology, data analysis and other fields, the professional course setting of smart logistics is relatively complex. This requires that when colleges and universities formulate talent training programs, they need to take into account the knowledge of various fields. The rapid development of smart logistics has led to the continuous emergence of related knowledge and technologies. There is a gap between the construction of the talent training system and the actual demand. This requires higher vocational colleges to seek more flexible and open teaching models to adapt to the rapid development of the smart logistics industry.

The rapid development of the intelligent logistics industry is constantly increasing the requirements for the cultivation of logistics talents. In the current era, we need to cultivate the digital capabilities of intelligent logistics talents, as shown in Figure 2.

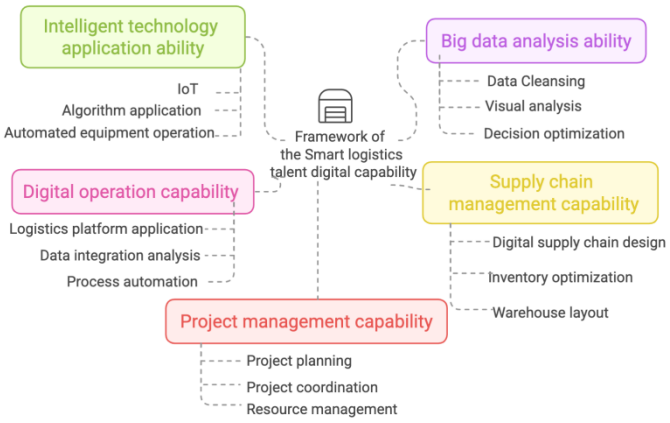

Figure 2. Framework of Smart Logistics Talent Digital Capability

- With the development of intelligent technology applications, students need to master capabilities such as the operation and maintenance management of the Internet of Things, algorithms, and automated equipment.
- As the complexity of supply chains increases, professionals in related fields are required to possess excellent supply chain management skills, being capable of coordinating and managing all aspects of logistics operations to enhance operational efficiency and reduce costs.
- With the emergence of new business processes for enterprises, students need to acquire digital operation capabilities, which can enhance efficiency, reduce costs, and achieve better business outcomes and customer experience.
- With the advent of the era of big data, students need to master the ability of data analysis, which means extracting new added value from massive logistics data, including data and information involved in logistics links such as transportation, warehousing, handling and loading/unloading, packaging, and circulation processing. Through big data analysis, transportation and distribution efficiency can be improved, logistics costs can be reduced, and customer service requirements can be met more effectively.
- With the increase of smart logistics projects, students need to master the ability of project management. Through efficient project management, they can effectively control the risks in the logistics implementation process and enhance the efficiency of logistics operations.

Intelligent logistics also demand high standards of comprehensive qualities from talents. Besides having solid professional knowledge, they are also required to possess good innovation ability and practical skills.

3.2 Inspiring Suggestions on the Cultivation of Talent Patterns for the Development of Smart Logistics

- Optimize the curriculum system

Teaching should keep pace with the development of smart logistics and update educational content in a timely manner. It should provide students with cutting-edge and practical education, emphasizing the cultivation of practical combat capabilities. The curriculum design should cover related fields such as logistics management, supply chain management, and information system application, and strengthen the teaching of core courses such as logistics software and hardware knowledge, big data analysis, and Internet of Things application. Case teaching should be strengthened to cultivate students' comprehensive application abilities through practical problems; a composite curriculum system should be constructed, combining the talent cultivation system of "job, course, competition, certificate" and the requirements of smart logistics talents centered on job capabilities, to restructure a smart logistics professional curriculum system that meets diversified needs. In addition, vocational colleges should pay attention to the cultivation of students' soft skills, such as teamwork ability, communication ability, and the ability to solve complex problems. These non-technical abilities are often very crucial in practical work and can help students better adapt to the working environment and solve practical problems.

- Attach great importance to the construction of the teaching team

Higher vocational colleges should actively cultivate "dual-qualified" teachers to enhance the overall quality of teaching staff. Besides regular teaching, they should organize more training courses for teachers to expand their capabilities. They should also encourage teachers to go deep into enterprises and communicate academically with experienced logistics experts to improve their practical abilities and knowledge. They should also make use of favorable policies and welfare benefits to attract professional logistics talents from relevant enterprises to serve as practical instructors for students. The mentors both inside and outside the school should negotiate together to formulate the professional curriculum system for students and determine their career development plans, in order to cultivate high-quality applied talents for the smart logistics industry.

- Introduce the mode of industry-university-research cooperation and enhance the integration of practice and teaching

In practical teaching education, it is necessary to introduce the model of industry-university-research cooperation to combine education with practice, strengthen cooperation with logistics enterprises, provide students with more internship and training opportunities, and establish incentive mechanisms such as scholarships to encourage students to carry out innovative practical activities. Smart logistics enterprises should recognize that technology is the fundamental for progress, increase investment in research funds, and enable logistics enterprises to achieve both internal and external balance, making progress in both service and technology fields. Smart logistics enterprises can establish an industry-university-research cooperation mechanism with research institutions or vocational colleges to cultivate high-quality professionals with strong expertise for the development of the logistics industry.

Strengthen the construction of smart logistics training laboratories in schools, simulate the construction of logistics simulation information training laboratories, informationized warehousing bases, and networked goods distribution centers, etc., to achieve automation, visualization, controllability, intelligence, and networking of logistics, and provide good conditions for the implementation of training courses in the school; introduce the project-based teaching model, let students participate in actual smart logistics projects, and focus on strengthening the on-site problem-solving ability of smart logistics talents.

- Implement personalized training and education

Colleges and universities should design personalized learning paths for students, allowing them to choose corresponding courses based on their personal interests and career goals. This will enhance students' learning enthusiasm and encourage them to focus more on career development. Colleges and universities can gain a deeper understanding of students' skills and interests in the field of smart logistics through questionnaires and one-on-one consultations, and assist students in planning their future career paths. Through school-enterprise cooperation, they can provide students with rich resources for career development, including professional lectures in the industry, career planning guidance, and job recommendations, giving students multiple choices, which is conducive to their future career planning.

- Keep pace with the government's policies and with the help of the government's strength to strengthen the talent cultivation model

By formulating and implementing relevant policies, the government has provided clear directions and goals for the cultivation of talents in the smart logistics industry. These policies have served as the basis for universities and vocational colleges to adjust their professional settings and optimize their curriculum systems, enabling them to better cultivate professional talents that meet the development needs of smart logistics. The government encourages universities to collaborate with enterprises to jointly carry out talent cultivation projects; it also promotes vocational colleges to jointly build training bases and industrial colleges with enterprises, providing students with practical operation platforms. The government's support can enhance the social recognition and career attractiveness of smart logistics talents. Through policy guidance and publicity promotion, the government can increase public attention and emphasis on the smart logistics industry, making people realize the importance and development potential of this industry.

4. Conclusion

The development of an industry cannot leave out the cultivation of talents. The actual demands of the industry are the starting point for us to formulate the talent training plans. We should deeply understand and study the business processes, technical applications and industry characteristics of smart logistics to ensure the practicality and pertinence of talent cultivation. At the same time, the training methods and approaches of higher vocational colleges also need to be innovated and adjusted along with the

development of the industry. We should make full use of modern educational technologies, strengthen practical teaching, and improve students' practical ability and innovation ability. In summary, building and improving the talent training model for smart logistics requires comprehensive consideration of industry demands, educational methods and academic research, and adopting a comprehensive, systematic and innovative approach. We should continuously optimize educational content and teaching methods to enhance educational quality and educational effect. We hope to create an efficient, practical and advanced talent training system for smart logistics, providing strong talent support for the development of the smart logistics industry, and thus promoting the healthy and prosperous development of China's smart logistics cause.

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