Research on the Countermeasure of Training Applied Intelligent Logistics Talents Based on the Integration of Industry and Education

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Abstract. The transformation and upgrading development of logistics industry put forward higher requirements for intelligent logistics talents. However, the current training effect of intelligent logistics talents is not satisfactory, and corporate satisfaction is not high. Therefore, based on the integration of industry and education, the author establishes a "three-dimensional" teaching staff; establishes a curriculum system of intelligent logistics based on social needs; innovates classroom teaching mode guided by thinking inspiration; launches a special plan for training intelligent logistics talents according to industrial planning; Integrate industry resources and establish a talent training Alliance for intelligent logistics.

Introduction
With the rapid development of intelligent logistics industry, higher requirements are put forward for the training of logistics talents. In 2017, the State Council issued the "Guiding Opinions on Actively Promoting Supply Chain Innovation and Application". In the overall requirements, it mentioned the three directions of "Promoting Manufacturing Synergy, Service and Intelligence". Among them, "Intelligence" mainly emphasizes promoting the visualization and intelligentization of manufacturing supply chain, promoting the application of perception technology in key nodes of manufacturing supply chain, promoting the information sharing of the whole chain, and realizing the visualization of supply chain. We should promote the intellectualization of the supply chain system of machinery, aviation, shipbuilding, automobile, light industry, textile, food, electronics and other industries, and accelerate the application of human-machine intelligent interaction, industrial robots, intelligent factories, intelligent logistics and other technologies and equipment, so as to improve the ability of agile manufacturing. Intelligent logistics talents, as service talents of intelligent manufacturing industry, are an indispensable and important force to promote the innovation and development of intelligent manufacturing, and also an important content and urgent task of talent training at present.

At present, there are some achievements in the research on the cultivation of intelligent logistics talents. Based on the integration of industry and education, Zhang Zhiqiang [1], pointed out that logistics management specialty should actively deepen the integration of industry and education. He believed that the platform construction and talent training of logistics management specialty should be integrated into the industrial demand, the professional teaching resources should be diversified development. The post practice and graduation practice of combining work with learning should be carried out, and establish a guarantee mechanism for pre-job training, modern teacher-apprentice system, safety management and other internships. Zhang Weiping and others [2], have formed a set of cooperative education mechanism through joint exploration and practice of schools and enterprises; Zhang Qihui and Wang Wei [3], discussed the practice and development of school-enterprise cooperation in order to promote the standardization, normalization and extensiveness of school-enterprise cooperation in logistics skills competition. Liu Dan [4] and others put forward the idea of thinking inspiration-oriented, innovative classroom teaching mode, relying on the integration of production and education, to cultivate students' practical ability and professional ability.
Scholars' research on training professional talents to meet the needs of industry has greatly promoted the gradual improvement of social talent demand training mode, which helps to link up higher education with social practice, and better cultivate relevant talents of national strategic demand. These studies provide a preliminary basis for this article. This paper will extend their research to further explore the Countermeasures for the training of Applied Intelligent Logistics Talents under the integration of industry and education.

**Characteristics and Quantity Demand Analysis of Intelligent Logistics Talents Demand**

Intelligent logistics is improved and optimized, integrated and innovative compared to traditional labor-intensive, single-function, common equipment, system-deficient, and extensive management. Under the development trend of "Internet +" and intelligent manufacturing, intelligent supply chain and intelligent logistics, which are characterized by informationization, networking, intellectualization, digitalization, integration, flexibility and automation, have become the direction of development [5]. Under this background, intelligent logistics presents new characteristics: continuous improvement of policy environment, gradual formation of logistics internet, application of large logistics data, enhancement of logistics cloud services, innovation of collaborative sharing model, and artificial intelligence begins to develop. Professor Fang Dianjun, Chief Scientist of the Fraunhofer Institute for Material Flow and Logistics in Germany, believes that the intelligent logistics of service intelligent manufacturing should have six typical characteristics: decentralization, autonomy, networking, digitalization of the whole process, high flexibility, automation and intelligence.

**Demand Characteristics of Intelligent Logistics Talents**

With the rapid development of smart logistics, the society's requirements for logistics talents have fundamentally changed. The demand characteristics of intelligent logistics talents are: adaptable and competent to the operation and management requirements of intelligent logistics. Facing the intelligent logistics position of service intelligent manufacturing, logistics talents can be engaged in logistics planning, familiar with production process, skilled in using logistics management system, skilled in operating logistics intelligent equipment, good at logistics data collection and analysis, and can provide guaranteed services for the normal operation of intelligent logistics equipment. Facing the intelligent logistics position of logistics operation and management, logistics talents can complete various expanding services, including analysis of equipment operation condition and quality, supportive services for logistics operation and performance analysis, and provide periodic operation report and suggestions on optimization and improvement for technology improvement and system upgrade of intelligent logistics.

Intelligent logistics talents are different from traditional labor-intensive logistics talents [6]. On the one hand, the number of intelligent logistics posts will be greatly reduced. On the other hand, the ability and quality of talents will be significantly improved. Applied intelligent logistics talents need to understand logistics management business, be proficient in engineering technology, and be skilled in operation. They are compound talents who can embody the characteristics of logistics ontology, technology essence and skill standard.

**Quantity Demand Analysis of Intelligent Logistics Talents**

With the development of intelligent logistics industry, it brings huge employment opportunities. On the one hand, intelligent logistics has a positive impact on the transformation of traditional employment. On the other hand, the focus of intelligent logistics is not "intelligent robots", but intelligent logistics talents. Technical talents endow the machine with soul, while managerial talents endow logistics enterprises with soul. The pace of transformation and upgrading of the manufacturing industry is accelerated the promotion of "Made in China 2025", the implementation of "Intelligent Manufacturing Development Plan (2016-2020)". The start of a batch of intelligent manufacturing demonstration projects, the start of a batch of demonstration intelligent workshops,
and the planning of a batch of demonstration intelligent factories have created an urgent demand for intelligent logistics talents.

In addition, with intelligent logistics becoming an important direction of supply-side structural reform in China's logistics industry, government departments are also creating a favorable policy environment to promote the development of intelligent logistics. In 2016, the "Internet +’ Efficient Logistics Implementation Opinions" issued by the General Office of the State Council clarified the importance of smart logistics to the development of China's national economy. In 2017, the State Council issued the "New Generation Artificial Intelligence Development Plan", re-emphasizing that the new driving force for a new round of industrial transformation and economic development will be intelligent logistics represented by artificial intelligence. In 2018, Premier Li Keqiang mentioned the development of intelligent logistics and related industries many times in the "Government Work Report", such as "to implement big data development action and strengthen the application of new generation of artificial intelligence research and development", "to develop platform economy and form an innovative and entrepreneurial pattern combining online and offline" and so on. Therefore, society and enterprises will pay more attention to the shortage of talents in intelligent logistics, and their demand will continue to increase.

**Countermeasure of Training Applied Intelligent Logistics Talents Based on the Integration of Industry and Education**

Intelligent logistics talent training should focus on logistics ontology, technical essence and skill-based target positioning, build platform and specialty through the combination of government, administration and school; Open courses and build bases through the combination of teachers, students and enterprises [7]; Find methods and solve problems through teaching and research and doing; Practice Skills and Educate Talents by Learning, Doing and Creating Coherence. Through the implementation of teaching reform, we can strengthen the construction of teaching staff, promote the construction of professional connotation, improve the quality of talent training, and train a large number of compound, practical and innovative intelligent logistics talents for the development of intelligent manufacturing industry.

**Establishing "Three-dimensional" Teaching Staff Based on the Integration of Industry and Education**

The cultivation of applied intelligent logistics talents is based on the integration of industry and education. Through in-depth cooperation with third-party intelligent logistics enterprises and intelligent logistics equipment enterprises, we can further promote cooperative education of school and, resource sharing, and conduct teacher cross-employment, two-way exchange, dual employment, and establish a perfect "three-dimensional" teacher staff. "Three-dimensional teachers" refers to the teachers of schools, intelligent logistics enterprises and intelligent logistics equipment enterprises. The "three-dimensional" teachers teach and train the "three-oriented" characteristics of applied logistics talents respectively, so as to achieve the training goal of applied logistics talents [8]. Schools can cultivate compound applied talents that meet the needs of employers and improve social recognition. The third-party intelligent logistics enterprises can cultivate the planning and operation talents of intelligent logistics in advance and control the cost of human resources through the deep integration of schools and enterprises; the enterprises of intelligent logistics equipment can cultivate the marketing, planning and maintenance talents of enterprise intelligent logistics equipment in advance through the cooperation between schools and enterprises; Based on the construction of "three-dimensional" teaching staff, Schools, logistics enterprises and intelligent logistics equipment enterprises cooperate deeply in curriculum, teachers, training base construction, enrollment, practice and employment, so as to cultivate logistics talents with potential in logistics scheme design, research and development, innovation and so on [9]. To cultivate complex, practical and innovative intelligent logistics talents who can become "bridges" for intelligent logistics enterprises and intelligent logistics equipment enterprises.
Establishing Intelligent Logistics Course System Based on Social Needs

With the economic restructuring and industrial transformation and upgrading, China's logistics industry is facing major changes, and the competition between individual enterprises will be presented as the competition between supply chains in the future [10]. The rapid development and application of Internet of Things, Cloud Computing, Big Data, Artificial Intelligence and other emerging technologies mark the arrival of the era of intelligent logistics. This puts forward new requirements for the knowledge structure, professional skills and practical ability of logistics talents. As the main body of cultivating talents, colleges and universities must keep pace with the times, keep forging ahead, constantly update the teaching content, and meet the needs of social development and industry development [11]. The core course of logistics should be closely combined with the new needs of the industry, develop the course content jointly with enterprises, promote scientific research results and social service cases into the classroom and textbooks, so as to make the teaching content close to life, production and frontier. At the same time, collective lesson preparation, seminars and other ways are adopted to determine the teaching objectives, formulate a reasonable syllabus and teaching plan, and ensure that the contents of each course are seamlessly linked, complementary and not duplicated.

Innovation of Classroom Teaching Model Guided by Thinking Enlightenment

The ability to analyze and solve problems is the foundation and core competence of college students. Therefore, in the classroom, on the one hand, teachers combine theoretical knowledge with production practice, combine teaching with scientific research [12]. On the other hand, they invite professionals from the business sector to enter the campus classroom and provide professional lectures for students. In the process of teaching, close cooperation between schools and enterprises will help students deepen their understanding of knowledge and enhance their ability to apply knowledge and solve practical problems [13]. Through modern teaching methods, the implementation of the teaching philosophy of taking students as the main body and teachers as the leader, innovating classroom teaching mode, and cultivating students' ability to think and analyze problems.

Conclusion

"Made in China 2025" clearly calls for adherence to the "talent-oriented" policy, adhere to the talent as the foundation of building a strong manufacturing country, accelerate the training of professional and technical personnel, management personnel and skilled personnel urgently needed for the development of manufacturing industry, and build a large-scale, rational structure and excellent quality manufacturing talent team. Intelligent logistics talents, as service talents of intelligent manufacturing industry, are an indispensable and important force to promote the innovation and development of intelligent manufacturing, and also an important content and urgent task of talent training at present.

In addition to the above measures, we need to promote the training of intelligent logistics talents from the following levels. Firstly, according to the industrial planning, we should start a special plan for the training of intelligent logistics talents. Due to the different development plans of intelligent manufacturing industry in different regions, there are differences in the demand for intelligent logistics talents. It is necessary to cooperate with industry and education in the research, statistics and prediction of intelligent logistics talents. According to the forecast results, the local government and the education administration departments start the special plan for training intelligent logistics talents, implement the combination of directive plan and directive plan. Colleges and universities should set up the specialty or direction of cultivating intelligent logistics talents according to the scope of service.

Secondly, according to talent standards, we should promote the teaching reform of intelligent logistics talent training. Focusing on logistics ontology, technology essence and skill-based logistics
talent training target positioning, we will firmly promote teaching reform, promote professional connotation construction, improve the quality of talent training, and train a large number of compound, practical and innovative intelligent logistics talents for the development of intelligent manufacturing industry.

Thirdly, we should integrate industry resources and establish a talent training Alliance for intelligent logistics. Establish a talent training alliance of intelligent logistics, which is composed of leading enterprises in the industry and relevant professional colleges and universities, and form a talent training mode of multi-enterprise, enterprise-enterprise cooperation and co-education and sharing.

In a word, under the background of intelligent logistics, the rapid development of logistics industry has an urgent demand for logistics talents, especially applied talents. The training of applied logistics talents must keep pace with the times, grasp the theme that talents should focus on application. Aiming at the market demand of logistics industry, we should cultivate advanced applied logistics talents with parallel knowledge and skills.

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References


