



System Design and Development of Logistics Management Talents Training Program in Colleges and Universities Under the Background of Big Data

Na Yin(✉)

School of International Education, Wuhan 430056, China
ccshcc@ccshcc.cn

Abstract. Combined with the basic positioning of logistics personnel training in modern colleges and universities, this paper discusses the system design and development ideas of logistics management personnel training scheme in Colleges and Universities under the background of big data, and formulates a set of feasible personnel training scheme, so as to realize the direct correspondence with the actual professional posts of small and medium-sized logistics enterprises and realize the personnel training objectives.

Keywords: Big data background · Logistics major · Personnel training · Program

1 Introduction

The 12th Five Year Plan of the people's Republic of China clearly puts forward that the logistics industry is one of the top ten revitalizing industries, which indicates that the development of modern logistics industry has been placed in a very important position. It points out that we should vigorously develop modern logistics industry, accelerate the establishment of socialized, specialized and information-based modern logistics service system, vigorously develop third-party logistics, and give priority to the integration and utilization of existing logistics resources, Strengthen the construction and connection of logistics infrastructure, improve logistics efficiency and reduce logistics cost.

Guangdong Province also attaches great importance to the development of modern logistics industry, which is close to the national development plan [1]. In the 12th Five Year Plan of Guangdong Province, it points out that it is necessary to focus on the development of modern logistics and other modern service industries, and clearly requires to take the national planning goal as the overall goal, speed up the construction of logistics infrastructure and network, and create a convenient and efficient modern logistics network with the Pearl River Delta as the main body.

2 Current Situation of Logistics Talents' Ability and Quality Demand

The Pearl River Delta is the earliest region to develop logistics industry in China. According to relevant data, the gap of logistics employees in Guangdong will reach 3 million. Different types of logistics enterprises, the nature of logistics jobs, different industries and different regions have different demands for logistics talents [2, 3]. According to the basic orientation of logistics personnel training in higher vocational colleges, it is necessary to master international trade, transportation, logistics geography, as well as solid English ability and logistics operation related knowledge. In order to obtain accurate data, we have completed the Research Report on the demand for logistics talents in Guangdong Province, which analyzes the demand for logistics talents of small and medium-sized export-oriented manufacturing enterprises and small and medium-sized micro logistics enterprises in Guangdong region, especially in the Pearl River Delta region, and lays a foundation for the development of training standards for high skilled talents. The specific jobs are shown in Fig. 1.

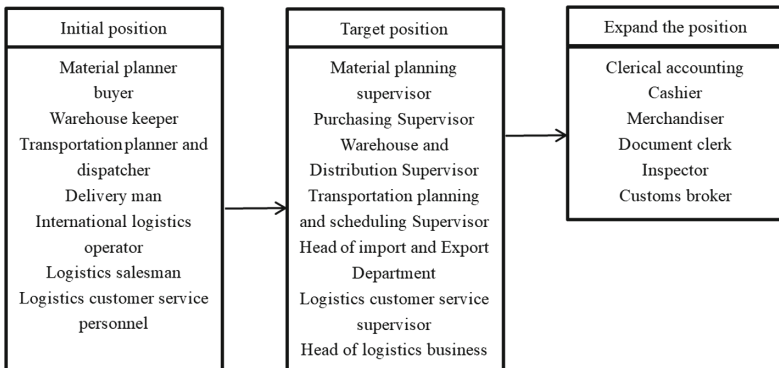


Fig. 1. Employment position of logistics students

Generally speaking, the ability and quality requirements of small and medium-sized logistics enterprises in Guangdong Province for higher vocational logistics talents can be summarized as good communication ability, practical operation ability and team cooperation ability. Professional theoretical knowledge requirements mainly include logistics management knowledge, financial knowledge, professional English, computer information system knowledge, etc. The most effective way is to strengthen the construction of logistics discipline and specialty in Colleges and universities, and improve the knowledge and skills of students majoring in logistics in higher vocational colleges [4–6]. In the Pearl River Delta region, it puts forward specific requirements for the talent training of Logistics Specialty in higher vocational colleges. How to formulate a talent training plan suitable for the development of logistics enterprises is the top priority for the development of Logistics Specialty in higher vocational colleges.

3 On the Construction of the System Design and Development of Talent Training Program

3.1 Establishing the Training Plan Oriented by Professional Ability

Logistics specialty or department should establish professional ability requirements and knowledge modules and build a new curriculum system based on the professional ability requirements of logistics management post group, the job requirements of small and medium-sized logistics enterprises, and the logistics workflow [7]. The curriculum system must highlight the cultivation of post ability and professional quality, and pay attention to the cultivation of students' professional ethics and entrepreneurial ability. In addition, the curriculum system should dilute the boundary between professional basic theory courses and professional training courses, extend the scope of cooperation with enterprises, and jointly develop a number of practical training courses and professional quality courses with the combination of work and study in the curriculum design [8]. At present, we have made great efforts to list the courses of "warehousing and distribution practice", "production operation and management", "logistics and transportation practice" as excellent courses development projects, with the purpose of building the integration of courses and certificates and training students' professional ability.

3.2 Improve the Construction Quality of Training Base Inside and Outside the School to Meet the Needs of Practical Teaching

The logistics specialty or department of the college should strengthen the practical teaching link and highlight the skill training. Students' practical training includes not only on campus training, but also post practice in off campus training base [9–11]. The premise of combining learning with working and improving students' vocational skills is to have a good practice and training base inside and outside the school. Strengthen the data management and control, study the data tracking and detection differences between related radar targets, and calculate the difference value data. Set the following data calculation formula:

$$R_i = \frac{\sum_{k=1}^{n_i} R_{ik} V_{ik}}{\sum_{k=1}^{n_i} V_{ik}} \quad (1)$$

According to the target position of radar tracking target, the data foothold of position function is analyzed. At the same time, the data difference value between different regions is reasonably planned. According to the information range of difference value, the simplification of algorithm is strengthened, the operation process is simplified, and the operation time is shortened, so as to obtain more efficient tracking and detection data results, Using the selected index parameters, the paper designs the transformation model formula to accurately control the test object of the radar target:

$$K = \sqrt{S - T^3} + \frac{p - 0}{N} \quad (2)$$

4 Design and Development of the Construction Path of “Professional + Entrepreneurial” Mode

According to the construction idea of the system design and development of the new talent training scheme, this paper puts forward the construction path of system design and development based on the special industry * enterprise mode and the “professional + entrepreneurial mode” [12–14]. Through this mode, we can cultivate talents suitable for small and medium-sized logistics enterprises in Guangdong Province, solve the gap of skilled talents in enterprises, and find a breakthrough and direction for the society to solve the severe employment situation, Enhance students’ entrepreneurial passion and ability to lay a solid foundation for future entrepreneurship.

4.1 Jointly Study and Discuss to Determine Talent Training Objectives and Specifications

Through expert argumentation, group discussion and other ways, the training objectives and specifications of logistics management professionals are accurately positioned, the logistics management professional construction Steering Committee is established, and the revision opinions and suggestions of talent training program are discussed at regular meetings (see Fig. 2).

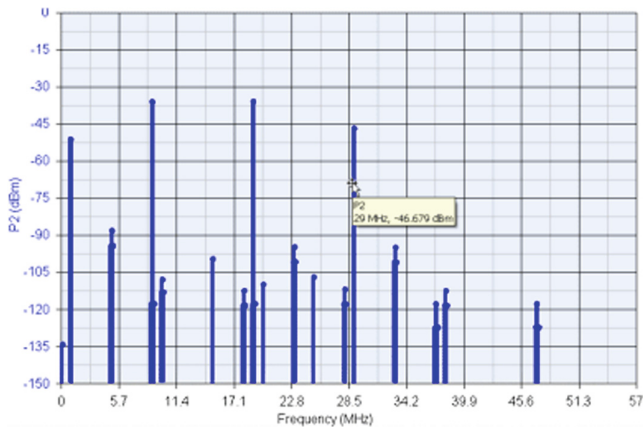


Fig. 2. Simulation of talent training objectives and specifications

4.2 Joint Development of Modular Curriculum

System and specific courses according to the requirements of the new talent training program, the curriculum system of logistics management major adopts the curriculum system of combining work with study module to strengthen skills and ability training [15, 16]. The curriculum system consists of basic professional quality module, professional positioning internship module and entrepreneurial ability training module. The

preliminary designed and developed curriculum system consists of professional practice courses (platform practice courses, professional technology practice courses, broadening training), professional theory courses (platform courses, professional technology courses, broadening courses), public basic courses and directional elective courses [17]. Mainly in the platform practice courses, it offers logistics cognition training, international trade training, basic management training, market research, accounting practice, etc., In the professional and technical practice courses, there are warehousing and distribution training, logistics transportation training, customs declaration comprehensive training, procurement and supply management training, chain enterprise logistics training, business negotiation training, etc. in the outward bound training courses, there are supply chain management training, e-commerce training, entrepreneurship scheme design, graduation thesis design, graduation practice, etc. (see Fig. 3).

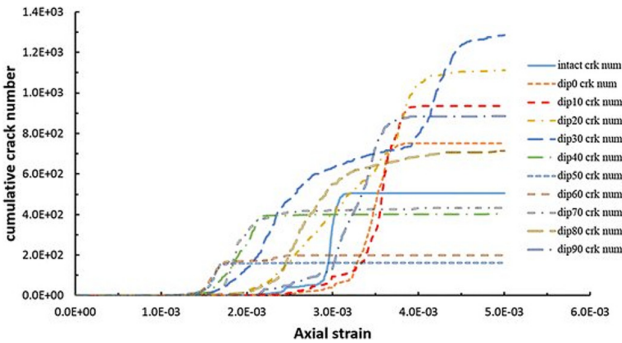


Fig. 3. Simulation with strain

5 Suggestions on the Cultivation of Logistics Talents in China

In the final analysis, the competition of enterprises is the competition of talents. The training of logistics talents is a complex system engineering. To speed up the training of logistics talents, we need to do the following work well.

5.1 We Should Create a “Soft Environment” for the Development of Logistics and Form a Correct Understanding of “Logistics”

In a sense, in the development of modern logistics, the gap between us and developed countries is not only in equipment technology and capital, but also in concept and knowledge. For a long time in China, there are still many people who do not know enough about the importance of circulation under the condition of socialist market economy, especially the importance of modern circulation mode and industry, which will greatly restrict the development of China’s advanced productivity and competitiveness [18]. We should pay attention to the propaganda and guidance of logistics, so that people can understand modern logistics and accept the concept of modern logistics. In order

to form the idea of big logistics system in the whole society, we must let more people understand and accept it. It is not enough to build some hard facilities. We should organize experts and scholars to introduce the basic knowledge of logistics, publicize the idea of logistics to the society, create a kind of atmosphere of logistics, make more public understand logistics, attract excellent talents to participate in this field, and create a “soft environment” for the real development of logistics in China.

5.2 Training Logistics Talents Through Various Ways

In view of the current situation of logistics education and personnel training in China, logistics education in China should focus on the logistics discipline education. The development of various forms of education and training should be carried out simultaneously. Through academic education, vocational training, training organized by industry associations and short-term training organized by enterprises, logistics talents should be cultivated through academic education. To improve the education and training system of logistics talents, new disciplines are in the process of continuous research and improvement. After the rapid increase of logistics demand, the lag of logistics discipline construction has become a problem that cannot be ignored. At present, China has not yet formed a complete logistics education system. Although a number of colleges and universities have set up undergraduate education of logistics specialty, they are still in the stage of self planning and design of curriculum and practice, lack of standardization in curriculum setting, textbook selection and training direction, and the number of talents cultivated is uneven [19]. We should refer to the foreign logistics personnel training system, according to the requirements of market demand and discipline theory, fully consider the current situation of logistics education resources, and do a good job in logistics discipline construction.

5.3 Set Up the Correct Goal of Logistics Personnel Training

It is the basic premise of logistics education to set up a correct goal of logistics personnel training in multi-level logistics. The goal and mode of logistics personnel training should be based on the needs of the field and the characteristics of the discipline, and the current situation of logistics education resources should be fully considered. Comprehensive design of modern logistics personnel training different levels of talents, take different training methods, logistics postgraduate education mainly train logistics researchers, teachers of higher education and enterprise logistics managers, they should have a solid logistics research method, be able to solve the major theoretical and practical problems in the modern logistics industry, undergraduate education should focus on quality, knowledge and coordinated development [20]. For enterprises, we should cultivate logistics management talents with solid theoretical foundation, wide knowledge, strong adaptability, logistics operation and management, logistics system planning and design ability, as well as logistics professional and intermediate logistics management talents with basic theory of related disciplines, so that they can directly manage and operate the whole process of logistics operation. Junior college and higher vocational education are the basic logistics education, which should focus on operation, skills and

practice, and mainly cultivate practical operators with professional skills and engaged in logistics process management.

6 Training Logistics Talents Through Vocational Training

6.1 Improve Quality

In order to improve the quality of logistics personnel, we should pay attention to the vocational education of in-service personnel and strengthen the training of existing logistics personnel. According to the survey, about 92% of the logistics employees in the United States have bachelor’s degree, 41% have master’s degree, and 22% have obtained the formal qualification certificate. To improve the professional quality of these employees, we can only complete it through continuing education. At the same time, with the development of social economy and the progress of science and technology, even the logistics practitioners with higher education will face the problem of knowledge updating and self enrichment. Therefore, in addition to academic education, continuing education is a necessary supplement and extension of logistics personnel training [21]. As shown in Fig. 4. For the job, the starting point should be high managers, and the forms should be diversified. Teaching, research, discussion and communication can be adopted, and different levels should be set to meet the needs of different personnel. Short, targeted, practical to be strong, to play a practical function and role in a short time, to be able to solve problems. Long term training should be considered in the long run, not practical.

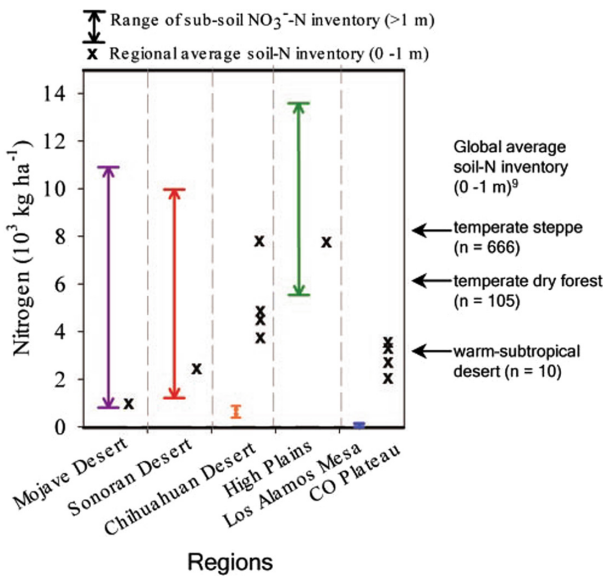


Fig. 4. Main quality improvement models

6.2 Unify the Qualification Certification of Posts and Improve the Training System of Logistics Talents

In order to improve the standardization of continuing education and integrate with international practice as soon as possible (professionals need to pass the evaluation and assessment of authoritative institutions to obtain qualification certification), it is particularly important to unify the post qualification certification. In addition, it has also introduced the qualification certification system of the Royal Logistics Association of China and Beijing. However, because there is no unified and authoritative post qualification certification standard in China, the existing continuing education and qualification certification have not been generally recognized by the logistics industry. Therefore, China should take the lead of the government, organize universities and industry associations to jointly form an expert group, and work out a logistics training standard and post qualification certification system that is not only modern logistics concept, but also in line with China's specific reality, so as to promote the development of China's logistics continuing education and improve the logistics talent training system.

6.3 Carry Out Special Research on Logistics Education to Promote the Cultivation of Logistics Talents

Logistics experts should show logistics research and education topics, focus on the growth law of logistics talents, the contribution of logistics talents to logistics development and the comparison of logistics education systems in various countries, support the research and innovation activities of universities and scientific research institutions in logistics, improve the integration of logistics theory and technology in China, and encourage the development and application of Cooperative Logistics Technology in universities and research institutions [22]. Experts in the field of logistics also write training materials to provide sufficient logistics support for colleges and universities in China.

7 Concluding Remarks

To build a talent training program of logistics management specialty, which is supported by "industry + enterprise" mode and systematically designed and developed by "specialty + entrepreneurship" mode, to realize "three highlights, three optimizations and three strengthening", that is, to highlight the improvement of ability and quality, the cultivation of professional ethics and the training of professional skills; to optimize the curriculum system, teaching methods and methods; to strengthen the training of logistics management talents [23, 24]. We should strengthen the teaching of foreign languages and computers, the teaching of Humanities and Social Sciences, and the teaching of entrepreneurship theory, so that students can "learn by doing" and "learn by doing", so as to realize the standard of "high quality, wide knowledge and strong ability" for senior skilled talents and obtain the recognition and acceptance of social enterprises.

Acknowledgements. Research on the cultivation of applied talents for undergraduate logistics management (sino-foreign cooperation education) based on national teaching quality standards.

References

1. Wang, H., Li, X.: Curriculum system construction of logistics management specialty in higher vocational colleges based on working process systematization. *Educ. Career* **36**, 35–36 (2011)
2. Liu, Y.: Research on the development of work process systematization course for logistics management major in higher vocational colleges. *Harbin Inst. Technol.* **6**, 23–25 (2012)
3. Wang, X., Jiao, L., Wang, X.: Curriculum development and implementation of higher vocational logistics management specialty with systematic working process. *Vocat. Educ. Explor.* **7**, 166–167 (2010)
4. Cao, J., Chen, X.: On the development of logistics management curriculum system based on working process. *J. Liaoning High. Vocat. Coll.* **2**, 45–48 (2010)
5. Zhang, T., Hu, J., Yang, Y., Zhang, H., He, Y.: Exploration of “PCA double spiral ladder” talent training mode under the background of modern apprenticeship – taking logistics management specialty as an example. *China market* **09**, 91–93 (2021)
6. Li, H., Lin, C., Lan, Z.: Construction of “customer fresh load” mode of rural fresh e-commerce under shared logistics: a case study of Guanzhuang she Township in Shanghang County, Fujian Province. *J. Yunnan Agric. Univ. (Social Science)* **15**(02), 67–72 (2021)
7. Chen, Y., Yu, B., Liu, B.: Design of evaluation system for talent training program of logistics management specialty in higher vocational colleges. *China Bus. Theor.* **06**, 180–181 (2021)
8. Wang, G.: Research on the cultivation of cross border logistics talents in Henan Province under the background of digital trade. *J. High. Educ.* **10**, 151-154+159 (2021)
9. Tian, N.: Research on the reform of logistics personnel training mode in local colleges and Universities – taking Zhengzhou as an example. *Today’s Fortune* **06**, 192–193 (2021)
10. He, Y.: Research on the training of logistics talents in secondary vocational schools based on market orientation. *Manage. Technol. Small Medium Sized Enterpr. (Zhongxunjiao)* **03**, 154–155 (2021)
11. Zhu, J., Zhao, L.: Research on the relationship between Xingtai logistics industry and national economic development under the background of new normal. *J. Xingtai Univ.* **36**(01), 48-52+86 (2021)
12. Xu, X., Tang, J.: Exploration on curriculum system construction of higher vocational logistics management major integrating emergency logistics content. *Logist. Eng. Manage.* **43**(03), 185–188 (2021)
13. Wu, Y., Zeng, H.: Development status and Prospect of logistics industry in Guizhou Province under the background of big data+. *Logist. Eng. Manage.* **43**(03), 57–59 (2021)
14. Gao, H.: One of the “one belt, one road” background of independent institute international logistics curriculum teaching reform. *Logist. Eng. Manage.* **43**(03), 194–196 (2021)
15. Liu, S., Liu, Y., Gui, T.: Practical research on talent training mode of production and education integration in higher vocational colleges – taking logistics management major of Shanghai communications vocational and technical college as an example. *Logist. Eng. Manage.* **43**(03), 179-180+196 (2021)
16. Qi, S.: Problems and countermeasures of experiential teaching from the perspective of applied talents training – taking logistics management as an example. *Mod. Bus. Ind.* **42**(12), 161–163 (2021)
17. Liu, X., Xie, S.: One belt, one road, international logistics park’s strategic evaluation and development conception – based on the double circulation perspective in the post epidemic era, 2021 monthly (03): 59–71
18. Sun, X.: Suggestions on e-commerce logistics personnel training in vocational colleges. *China Train.* **03**, 46–47 (2021)

19. Fu, Y., Lin, H.: Exploration and practice of the “three education” reform of the “1 + X” certificate of logistics management major based on “integration of competition and courses” – taking Hainan vocational and technical college of economics and trade as an example. *Logist. Sci. Technol.* **44**(03), 158–160 (2021)
20. Ma, L.: One of the “one belt, one road” strategy for training logistics application-oriented talents. *Manage. Technol. SMEs* **03**, 108–109 (2021)
21. Liming. Relieving the “talent bottleneck” is the meaning of the logistics industry planning in the 14th five year plan. *Modern Logistics News*, 2021–03–03 (A04)
22. Zhong, Y.: Exploration on the realization path of cultivating high quality logistics talents under the background of intelligent logistics. *China Logist. Procurement* **05**, 60–61 (2021)
23. Wang, B.: Research on modern apprenticeship training of secondary vocational logistics management specialty. *China Logist. Procurement* **05**, 65 (2021)
24. Wang, L.: Discussion on the teaching reform of e-commerce logistics management in higher vocational colleges. *J. Jiamusi Vocat. Coll.* **37**(03), 147–148 (2021)