

# The Challenge and Approach of Improving the Big Data Analysis Ability of Logistics Professionals

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**Abstract:** The development of the logistics industry has driven the explosive growth of logistics data. However, the market lacks skilled professionals to carry out source management, processing, analysis and mining of logistics data. Under the growing talent gap, the cultivation of big data talents has become a global realistic demand. This paper takes the logistics professionals trained in colleges and universities as the research object. We analyze the difficulties of improving the big data analysis ability of logistics professionals from three aspects. A promotion approach for the big data analysis ability is proposed. The research believes that the training of big data thinking, big data analysis tools and cooperation between universities and enterprise should become the main means for colleges and universities to promote the high quality and sustainable development of the logistics education in the era of big data.

**Keywords:** Logistics talents, Big data analysis, Ability training.

## 1. Introduction

The era of big data is the latest stage of the development of informatization, which is another important strategic resource after natural resources, human resources and capital resources. China has issued the action plan for promoting the development of big data to encourage the positive development of the big data industry [1]. The United States regards the big data as "new oil in the future", values the occupation and use of data as another national core asset other than sea, land and air power [2]. The digital roadmap issued by France states that big data is one of the five strategic high-tech technologies. At present, governments of all countries believe that promoting economic digitization is a strong driver of social and economic transformation. They are actively carrying out forward-looking layout in terms of cutting-edge technology innovation research, data cloud sharing, privacy and security protection, and talent development.

With the rapid development of the logistics industry, a large number of industry data with explosive growth and massive accumulation have emerged, which puts forward practical demands for professionals with data thinking. Wang pointed out that the information flow in logistics links such as transportation, warehousing, handling, distribution, packaging and reprocessing is as high as PB, EB and ZB [3]. Most logistics enterprises and their logistics departments are unable to properly store and make use of these massive data, and urgently need the support of big data professionals with "advanced analysis ability". Lin found that only talents who have comprehensive logistics basic knowledge system and master data source management, processing, analysis, mining and visualization could provide support for the development of the logistics industry [4]. However, the large gap of big data talents will become the new normal situation of the logistics industry for a long time in the future.

To meet the national and industry needs, colleges and universities are innovating the training mode of logistics professionals and cultivating compound logistics talents. It has become a new topic for the logistics majors in higher

education. Under this background, it is of great theoretical and practical significance to systematically analyze the challenges and approaches of improving the big data analysis ability of logistics professionals.

## 2. The Challenges of Improving the Big Data Analysis Ability

### 2.1. Lack of Big Data Thinking

Big data talents are mainly divided into three categories: technical talents, application talents and business talents. Among them, the main task of technical talents is to build a big data platform framework for enterprises. Application talents need to find data on the spot, and use big data to solve specific practical problems. Meanwhile, business talents promote business work through big data and find potential customers. In the logistics industry, the demand for application talents is particularly obvious. They are not only required the corresponding knowledge of logistics and big data analysis, but also the application of big data thinking. The big data analysis focuses on discovering the relationship between unrelated events, and performs logical classification and quantitative processing, to turn inertial thinking into a high intelligence dimension. Currently, some colleges and universities have included the related disciplines of big data analysis in the logistics training plan, emphasizing the training of compound talents who understand logistics, data, technology and management, but ignoring the importance of big data thinking ability training.

### 2.2. Weak Ability to Use Big Data Tools

Big data analysis tools are often diverse and timely. Among them, the early big data analysis tools are mainly SPSS, Python, HiveSQL, etc. With the further development of IT technology, logistics enterprises are also undergoing technological changes, such as introducing new technologies Hadoop, unstructured database, data visualization tools and personalized recommendation engine [5]. However, the big data courses offered by most universities lack frontiers and internationality, while course content and analysis data lag

behind industry development. As a result, many of the professional knowledge that the students mastered in the university has been outdated that the logistics enterprises have stopped using. Even worse, due to the comprehensive consideration of saving training costs, logistics enterprises are not willing to set up training courses for new staff. Therefore, fresh graduates are easy to fall into the situation of "learning can not be used" or "learning is not enough".

### **2.3. Lack of Application Ability and Experience**

The requirements of modern society for reserve talents are not only reflected in solid basic knowledge, but also in flexibility in dealing with practical problems. Especially for the logistics industry with large span and complexity, only when the staff are familiar with the operation processes of demand forecasting, order processing, distribution, inventory control, transportation, warehouse management, layout and site selection of factories and warehouses, can they integrate with the theoretical knowledge. However, in the current training of logistics professionals, most of the students do not have a deep understanding of the business processes of logistics enterprises. In order to solve that theoretical knowledge is out of touch with practical experience, most colleges and universities have signed a series of joint training plans with local enterprises. Nevertheless, it is difficult to implement the training plan one by one due to the large number of students, the precious time of enterprise executives and the privacy of some data of enterprises.

## **3. Promotion Approach of Big Data Analysis Ability**

In view of those challenges above, we propose feasible breakthrough paths from three aspects: big data thinking, analysis tools and application ability.

### **3.1. Ladder Thinking Ability Training**

The cultivation of big data thinking is an accumulation process. As the cradle of talents, colleges and universities should integrate big data thinking into logistics courses, which is an indispensable goal in the training program. In the early stage, inspiring students to think about big data is necessary. The initial stage of big data thinking focuses on the correct understanding of the nature of big data. The theoretical courses of big data commonality can be added based on ensuring the basic courses of logistics. The teaching of big data should not be limited to dogmatic concepts. Instead, it should be guided by actual cases, put forward problems from logistics operation practice, and fully explore the connotation of big data in combination with decision-making and intelligent logistics. In the late stage, the focus is on encouraging students' big data thinking. Its further development cannot be separated from a perfect training mechanism. Colleges and universities should strengthen the investment in discipline construction, contact various social enterprises, gather various excellent cases and actual data, and open to students in combination with the classroom cloud platform. On the other hand, colleges and universities should enhance the diversity and interest of teaching. For example, the teaching methods such as big data competition, experimental teaching and cross professional communication should be used to innovate classroom teaching and build a richer education system.

### **3.2. Improving the Ability to Use Shared Tools**

For the teaching of big data analysis ability of logistics professionals, we should not only add theoretical courses of data processing, but also introduce relevant advanced professional tools. The laboratory of the logistics department should be equipped with professional software for the five stages of big data analysis, such as R / R studio, SAS or Python. At the same time, in order to connect with the actual big data resources, the laboratory should be upgraded to EB and ZB level databases, and sufficient preparations should be made in advance for students to contact and use mainstream and high-end databases. When the laboratory funds can not fully afford the high maintenance costs, a dual engine cloud platform can be taken into consider. It includes a graphical engine and a programming engine, with all the software and programs required for corresponding experiments. And it can be used as a comprehensive platform for big data related professional teaching and research. In addition, teaching by professional teachers is the main source for students to acquire knowledge. However, logistics teachers often lack practical experience in applying big data tools. Therefore, the teaching team should actively participate in the promotion projects, and go deep into the cooperative enterprises and universities to understand the new methods and new environment of big data tool application.

### **3.3. Promoting the College-enterprise Cooperation**

To cultivate high-quality composite talents suitable for the development of digital logistics industry, colleges and universities should still be guided by dealing with practical problems, promoting cooperation with enterprises, and innovating the big data logistics training system. In the early stage. It is helpful to strengthen the way of joint learning between schools and enterprises. For example, the university can carry out offline lectures by off-campus tutors on a weekly or monthly, or invite the graduates to share their work experience. In the later stage, college-enterprise cooperation training activity course can be established. According to the development characteristics of logistics discipline and the specific practice projects of cooperative enterprises, it will provide a practical training process platform for the students. Through the practical training course platform, the campus environment and the realistic situation can be integrated into the training process of logistics professionals, to cultivate the ability of solving practical problems by using information technology such as big data analysis.

## **4. Conclusion**

As the gap of logistics professionals with big data analysis ability continues to expand, it has become the consistent requirement of the government and the market for the training of logistics talents. Based on the existing literature and enterprise practice, this paper finds that logistics professionals in colleges and universities face many difficulties in improving their big data analysis ability. Among them, the lack of big data thinking, the lack of big data analysis tools and the weak application ability of big data have become the core issues that universities and enterprises need to work together to solve. Aiming at the dilemma of improving the big data analysis ability, we put forward the ladder thinking ability training, the sharing tool application ability improvement and the college-enterprise cooperation

application ability improvement, forming a feasible path for improving the big data analysis ability.

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## References

- [1] China government network. Implement the national big data strategy and accelerate the construction of Digital China [EB / OL]. (2017- 12 - 09) [2021-12-02]. [http://www.cac.gov.cn/2017-12/09/c\\_1122084745.htm](http://www.cac.gov.cn/2017-12/09/c_1122084745.htm)
- [2] China Federation of logistics and procurement. The impact of big data on procurement and supply chain [EB / OL]. (2015-1-16) [2021-12-02]. <http://www.chinawuliu.com.cn/xsyj/201501/16/297635.shtml>
- [3] Wang L. Analysis on the influence of big data on the management mode of logistics enterprises [J]. China Market, 2021 (26): 2.
- [4] Lin S. Analysis of supply and demand of university logistics talents in the context of big data [J]. Science and Technology Information, 2019, 17 (29): 2.
- [5] Zhai D. Application of computer software in big data analysis [J]. Electronic technology, 2021, 50 (11): 292-293.
- [6] Wang Z. Research on teaching reform of logistics management based on big data [J]. Education Modernization, 2020, 7 (21): 24-25, 33.