

# Research on the Training Mode of Big Data Analysis Talents Based on The Integration of Industry and Education

-- Take Hs Education Reform Practice as An Example

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**Abstract:** In the era of big data, the demand for big data analysis talents is increasingly urgent. As the main position of talent training, colleges and universities need to keep pace with the times and reform the traditional talent training mode to meet the demand of innovative and compound big data analysis talents. Combined with the education reform practice of HS College, the article discusses the integration of industry and education in four aspects, namely, disciplinary synergy, faculty construction, school-enterprise cooperation and "class competition, certificate and post", and puts forward the corresponding measures to provide reference and thinking for the cultivation mode of big data analytics talents.

**Keywords:** Industry-teaching integration, Big data analysis, Talent training mode.

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## 1. Introduction

As big data science is an emerging discipline that is closely integrated with basic disciplines such as computer science, mathematics and statistics, and cross-fertilised with many applied professions, an independent and mature talent training system for big data analytics has not yet been formed in China, which is unable to satisfy the huge demand of society for talents in related professional fields. In the context of the national implementation of the innovation-driven strategy, strengthening the training of innovative talents, and responding to the big data-oriented manufacturing model, consumption model, business model change, to explore and find a way to meet the laws of talent training in practice, combined with the characteristics of colleges and universities of big data analytics talent training mode is a proposition in front of the applied undergraduate colleges and universities.

## 2. The Current Situation of Big Data Professional and Talent Demand

According to the China Business Industry Research Institute, LinkrdIn and other relevant statistics show that the 2015-2019 data industry practitioners and talent gap is obvious, the Ministry of Human Resources and Social Security issued a survey on the talent demand of the big data industry, before 2025, the demand for big data talent will still maintain a growth rate of 30%-40%, and the total demand is about 20 million people. In the past three years, the shortage of big data talents has increased by 500,000 people per year, and it is expected that in 2022, the overall growth rate of the shortage will slow down after the relevant college graduates of big data majors enter the job market on a large scale, but it will be there for a long time.

## 3. Analysis of the Current Situation of The Employment Population in The Big Data Analysis Industry

### 3.1. Educational level

From the academic level, China's big data analytics talents are divided into four major categories, namely, master's degree or above, bachelor's degree, specialist, specialist or below, of which the most big data talents with bachelor's degree accounted for 65.4% of the proportion, followed by master's degree or above, while the big data talents with specialist or below accounted for a small portion of the total number of big data talents. It can be seen that the big data industry, as an emerging industry, has generally higher educational requirements for talents.

### 3.2. Professional sources

In terms of professional sources, the professional sources of China's big data analytics talents are mainly composed of four major categories: mathematics and science, economy and management, computer and other majors, of which computer majors account for the highest proportion, followed by mathematics and science.

### 3.3. Big data analysis talent recruitment channels

Big data talent recruitment channels mainly include campus recruitment, social recruitment, internal training and recommendation, and recruitment by training institutions. Social recruitment accounts for the largest proportion, which is higher than the sum of campus recruitment, internal cultivation and internal recommendation, and training institution recruitment. Big data talents currently rely mainly on social recruitment, indicating that school education is out of touch with social needs, and internal and external training can not meet job requirements.

### **3.4. Types and number of big data talent positions**

At present, the big data positions provided by enterprises can be divided into categories according to the requirements of work content: primary analysis, including business data analysts, business data analysts, etc.; mining algorithms, including data mining engineers, machine learning engineers, etc.; development and operation and maintenance, including big data development engineers, big data architectural engineers, etc.; product operation, including data operation managers, data product managers, etc..

Through the aforementioned talent education level, professional sources, training channels and job type research shows that the bachelor's degree is the main population, the main source of professional knowledge is mathematics and science, computer and economic statistics knowledge, the future of the enterprise big data analytics talent job fitness is mainly in the data mining engineers and data operation and maintenance engineers and other positions, the talent position is closely related to the industry and business products.

## **4. Current Status of Big Data Analysis Talent Training**

### **4.1. Big data talent training positioning bias, lack of subject direction and characteristics of the curriculum**

Applied colleges and universities require graduates to have the basic theory and application ability of the profession, and form expertise through practical training, with the goal of cultivating general-purpose talents. However, the rapid development of big data, talent training cycle lags behind, and after graduation, it is still necessary to adapt to big data positions in different industries for a longer period of time to be competent. Colleges and enterprises have different ability expectations for different big data analytics positions, and there is a mismatch between the supply and demand of talents, which creates a shortage of talents and a difficult employment situation.

### **4.2. Big data analysis course teachers are single and weak**

Big data talent training teachers mainly come from the original computer science majors in colleges and universities, a single source of teachers, bringing the problem of solid theoretical knowledge of computers, but weak multidisciplinary practice and application scenarios, and insufficient hands-on application teachers familiar with industry business. After graduation, the talents should be oriented to various fields and levels of industrial categories, without the participation of multidisciplinary and multidisciplinary inter-professional teachers can't complete the important task of training big data talents.

### **4.3. The matching degree between big data talent training objectives and enterprise job skills needs to be improved.**

The essence of big data talent training to serve the enterprise, industry-led education. Talent service enterprises ultimately to land on the enterprise specific job skills, talent training skills objectives to match the enterprise job skills requirements, and the current big data analysis talent training

objectives detached from the actual business positions, students often need to re-skill training in the actual business positions after graduation to be competent in big data positions, the lack of specific industry business scenarios and different business data cognitive dimensions, data-driven Data-driven business, different data mining skills represent different levels of job value. From this point of view, how to collect rich and diverse data, and its effective cleaning and organisation and data value mining, is the value of big data positions and enterprise value, but also the goal of big data talent training in colleges and universities. Talent training education and industry need two-way communication, and constantly improve the matching degree between the supply of skilled personnel in colleges and universities and the demand for skilled positions in enterprises, so that talent training can have a direction and a grip.

## **5. HS College Big Data Analysis Talent Training Education Reform Practice**

### **5.1. Talent training objectives of big data analysis direction under the major of accountancy**

This major cultivates composite professionals with relevant professional knowledge in economics, management, law and computer big data, strong ability to use big data analysis, systematic mastery of accounting theory, methods and means, strong big data application, database management and big data analysis ability, and the ability to engage in accounting, auditing, finance and management and other related big data collection, cleaning, mining and visualisation use in a modern information technology environment, innovative professionals.

### **5.2. Main Courses**

Core Courses. Financial Accounting, Accounting Information System, Financial Cost Management, IT Auditing, Financial Shared Services, Database Management and Application, Big Data Fundamentals, STATA/SPSS Software Application, Big Data Decision Analysis and Data Visualisation.

Main Practical Teaching Sessions. Accounting practical training course, big data analysis practical training course, enterprise big data business scenario practice, etc.

### **5.3. The curriculum reflects the characteristics of the school in cultivating accounting big data analysis talents**

Starting from the needs of enterprises and taking service enterprises as the fundamental, big data analysis talent cultivation designs the accounting big data talent cultivation programme and curriculum system with students' skills as the core. Construction 154 big data financial analysis professional talent training model: 1 professional direction 5 practical training platforms and 4 course modules. One professional direction is the direction of big data financial analysis, five practical training platforms include big data analysis practical training platform, accounting information system practical training platform and financial sharing centre practical training platform, cloud industry academy practical training platform and RPA financial robot practical training platform, and the four course modules include general knowledge courses, professional foundation, individuality

courses, and comprehensive practice course modules.

In the curriculum, in addition to the basic courses, students are trained to have the ability to process data, understand and research in different fields. Differentiate in directional courses, integrate the curriculum system, achieve multi-directional talent segmentation, and deepen the degree of talent specialisation. HS College has set up the direction of Big Data Management Accounting, ACCA Direction and Accounting Intelligence Direction within the major of Big Accounting to conduct useful explorations, and at the same time upgraded the original curriculum structure, increased the number of hours of practical training and integrated the cultivation of soft power.

#### **5.4. Faculty cooperation and university cooperation to share and build interdisciplinary faculty.**

Faculty Cooperation. HS College and Data College cooperate to cite computer database application, Python language and other courses faculty, to carry out interdisciplinary construction between second-level colleges, faculty borrowing and training each other to form a set of orderly rules and regulations, and to share interdisciplinary faculty attempts. Students need to cultivate interdisciplinary knowledge, and at the same time face the lack of faculty within the institution, the need for different second-level colleges within the faculty of the mutual transfer of the use of the College of Accounting and the School of Data to form a mechanism of cooperation, the students to share faculty, students to complete the credits between the different faculties and departments of the mutual recognition of credits, to achieve the purpose of sharing faculty.

Cooperation between Schools and Universities. The College has joined the Intelligent Accounting Alliance and cooperated with Shanghai University of Finance and Economics, Xi'an Jiaotong University and other universities in China for the cultivation of big data talents, and the teachers visit each other and interact with each other to innovate the teachers' team. In Guangdong Province and Guangdong University of Finance and Economics and other regular joint organisation of faculty symposiums, exchange of big data and intelligent accounting experimental class teaching and talent training experience, and outside the province, such as Chongqing Polytechnic University, Xi'an Eurasian College, Shandong University of Finance and Economics, regular exchange of information on the cultivation of intelligent finance and big data faculty.

#### **5.5. Collaborative education through school-enterprise cooperation**

Actively responding to the school-enterprise co-operation collaborative education project of the Ministry of Education, we have cooperated with Kingdee Jingyi Company to carry out the research on the construction of "Big Data Analysis Laboratory" and set up the "Big Data Analysis Laboratory"; cooperated with Guangzhou Hanzhi Company and Beijing Jingrong Company to set up the "Big Data Financial Analyst" training programme. The "Big Data Financial Analyst" project with Guangzhou Hanzhi Company and Beijing Jingrong Company; and the "1+X Big Data Analysis Level Certificate" project with Beijing Shouguan Company. The industry resources under this cooperation model are not only as a supplement to teaching and research, but also provide a real business environment for big data, which is conducive to

the application, development and transformation of big data technology. School-enterprise cooperation and collaborative education is not only conducive to the improvement of teaching effect, but also provides students with the opportunity to contact with real business and enrich the operation of big data business practice scenarios. In practice, students use the big data analysis platform provided by Kingdee and the real-time online dynamic generation of stock data to carry out big data analysis experiments, mine and analyse the fundamental data of individual companies, establish the trend value model, and find out the stocks with growth value according to the data model, which increases students' interest and sense of experience and reflects the value of big data analysis.

#### **5.6. Integration of "class, competition, certificate and post", and all-round refinement of financial big data analysis talents' skills.**

Explore the new mode of integration of "class, competition, certificate and post". In terms of curriculum, theoretical courses and practical training and experimental courses are conducted alternately, with professional courses as the main line and job competence enhancement as the core, and the laboratory is divided into big data collection and modelling post, big data cleaning post, visualization application post, dynamic big screen presentation post and big data comprehensive analysis report post. In terms of competitions, we create opportunities for students to participate in big data analysis competitions in various industries, such as "Kingdee Cloud Innovation Cup", "BRICS Intelligent Accounting Competition", "Xindao Cup Big Data Analysis Competition", "Shouguan Cup Big Data Analysis Competition", "Shouguan Cup Big Data Analysis Competition", and so on. "Shouguan Cup Big Data Financial Analysis Skills Competition" and so on. In terms of certificates, in order to build students' comprehensive competitiveness in employment, we have cooperated with Kingdee Group and Beijing Shouguan and other famous enterprises to carry out the pilot projects of "1+X Big Data Financial Analysis Skill Level Certificate" and "1+X Financial Sharing Centre Skill Level Certificate" for undergraduate universities. In terms of job matching, more than 100 off-campus practice bases have been established in cooperation with enterprises, which are widely distributed in the Pearl River Delta. For various positions in big data analysis, there are plans for internships at practice bases to participate in enterprise business data collection and modelling, data collation and data mining, and data maintenance positions. Through the four-in-one integration and refinement of "class, race, certificate and post", the students' big data analysis application skills have been qualitatively improved, and they can smoothly connect to the various needs of enterprises' big data positions and increase the core competitiveness of employment, so as to achieve a win-win situation for the students, the school and the enterprises.

## **6. Conclusion**

Through more than one year of practice, students' big data financial analysis skills have been improved, and this model is conducive to docking enterprise demand for big data financial analysis talents, and is conducive to improving the level of university education. Big data analysis talent training

requires the cultivation of data thinking concept, big data analysis talent in the university stage not only to play a good theoretical foundation, master big data technology, but also have big data thinking and different business scenarios big data thinking power, through the integration of industry and education, to achieve the cultivation of data-heavy and practice-oriented, multidisciplinary and innovative big data analysis talent goals.

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