

# ***Teaching Optimization and Practical Research of "Financial Big Data Analysis" under the Background of Blockchain Technology- -Take Zhanjiang University of Science and Technology as an Example***

**Lingqi Xue<sup>a</sup>, Xinna Liang<sup>b</sup>**

*College of Accounting, Zhanjiang Science and Technology College, Zhanjiang 524094,  
Guangdong, China*

*<sup>a</sup>748369041@qq.com, <sup>b</sup>781951995@qq.com*

**Keywords:** Financial Big Data, Teaching Optimization, Practical Research

**Abstract:** This paper is based on Zhanjiang institute of science and technology, to adapt to the needs of The Times under the background, through the financial big data analysis of the present situation of course teaching and practice, determine the direction of curriculum reform, and from five aspects of teaching optimization and practice research, so as in the course promotion, curriculum application scope, course benefit bring positive influence.

## **1. The construction of "Financial Big Data Analysis" Course is a Necessary Choice to Meet the Needs of the Times**

At the present stage, China's economy is turning to a stage of high-quality and rapid development, facing many new opportunities and challenges. The world economy is still in a stage of deep adjustment after the international financial crisis. Meanwhile, the COVID-19 epidemic is raging around the world and has had a huge impact on economic development. In the current development of science and technology, colleges and universities should seize the opportunity to effectively integrate the curriculum into the new era, which is of great significance to the curriculum teaching optimization and practical research.

### **1.1 Blockchain Technology Plays a Vital Role in China's Social and Economic Development**

The development of blockchain technology is a strong witness of the development of virtual currency. Together with big data, cloud computing, Internet of Things and other new technologies, it has set off a boom in the world. The understanding and development of blockchain in various countries and all walks of life has gone through a long time. As an important breakthrough in the independent innovation of core technologies, blockchain has been included in the national strategy. Information technology reform affects all walks of life, block chain technology influence

accounting practitioners one of the ten IT technology, university curriculum construction needs to keep pace with The Times embedded block chain influence on the accounting industry, based on block chain technology background analysis, the financial big data analysis course based on higher order, innovation, challenge requirements closely combined with The Times. We will not only let students understand the theoretical frontier and development trends of the subject, but also train students to adopt the concept of accepting new technologies and constantly learning new technologies.

### **1.2 The course of Financial Big Data Analysis Relies on the Financial Big Data Laboratory**

Accounting college follow the pace of accounting professional reform and development, explore "professional fusion, multiple" accounting professional practice teaching system, the ideological and political education, professional education, innovation, entrepreneurship education and quality education fully fusion, formed in digital, intelligent, based on general education practice platform, on the basis of experimental training, professional practice and graduation practice to expand the diversified practice teaching system. The financial big data analysis course based on the accounting institute in 2020 the latest financial big data laboratory, through the practical operation and software application, can cultivate students have certain intelligent financial ability, scientific research ability and practical work ability, can be rooted in the west region, actively into the pearl river delta, active docking beibu gulf urban agglomeration economic and social development of high-quality applied professionals.

### **1.3 "Financial Big Data Analysis" Course Leads the Intelligent Financial Vane**

The Financial Big Data Analysis course, In the 2020 edition of our school accounting, financial management and auditing talent training program, Is one of the professional courses that can best reflect intelligent finance, Mainly relying on DBE (digital business environment) financial big data practice teaching management platform, Innovative integration of Python data acquisition, data cleaning, MYSQL data storage, commercial visualization analysis software (analysis cloud), data mining and other big data tools, To obtain the structured data and unstructured data of the internal and external operating environment, Combined with the traditional financial analysis index system and big data prediction model learned by students, Financial analysis and decision training based on business problem simulation demand scenario. The course covers accounting, management, statistics, information technology, financial modeling tools and other knowledge, which will help improve the breadth and depth of students' professional knowledge, help students expand employment areas, and increase the core competitiveness of students majoring in employment. Let the students learn useful, in the future employment positions "not timid" "not unfamiliar".

## **2. Analysis of the Current Situation of the Teaching and Practice of the Course of Financial Big Data Analysis**

Domestic block chain technology development is mainly to research and explore application scenarios, with financial institutions, technology companies, most is by small and medium-sized enterprises as the main impetus, such as: China distributed general ledger basic agreement alliance, financial block chain cooperation alliance (tencent, Huawei and 31 domestic financial enterprises), China post office bank, universal block chain laboratory, Shanghai small ant technology co., LTD., etc., mainly involved in technical services, asset transactions, equity the raise, etc.

Blockchain is opening the era of digital economy, which will have a profound impact on finance, government affairs, medical care, finance and other fields. It is also related to the social and economic development in the next few decades. Grasping the development trend of blockchain technology will help to quickly seize the commanding heights of global science and technology. The development trend of blockchain is as follows: First, by fully assessing security risks, we can give full play to the advantages, so that blockchain technology can be effectively applied in a wide range of fields. Second, blockchain industries such as infrastructure, industrial applications and financial services have been formed, which can form effective coordination between enterprises and institutions. Third, the deep integration of blockchain technology and cloud computing technology expands the dimension and breadth of the development of digital economy. Fourth, blockchain will integrate financial sharing to improve work efficiency.

The school of Accounting complies to the development of the new situation, Create a financial big data laboratory, DBE financial big data experiment platform, Open the "Financial Big Data Analysis" course, And as a 2020 version of the intelligent finance section of the professional program, To realize the integration process of teaching and scientific research of Accounting College, Will train big data + financial compound talents for our school, Help students expand their employment areas, In addition to the general financial personnel in the enterprise, Can also serve as an enterprise digital project financial implementation consultant, Or a financial data analyst, Increase the core competitiveness, employment opportunities and salary level of students majoring in accounting in employment, Improving the level of teachers plays a vital role.

Accounting school has been conducted on January 11, 2021-13, by the new financial big data designer Yang Caihua DBE teacher financial big data teacher training, participate in the training of accounting institute, inch gold education group finance, Guangzhou lang heng information technology co., LTD., Guangdong technical normal university, lingnan normal university, nearly 50 people, the training is from the perspective of software platform designer comprehensive analysis DBE financial big data platform, for the course and project research laid the foundation.

### **3. The Reform Direction of the "Financial Big Data Analysis" Course in our School**

Management accounting talents combined with enterprise business big data analysis ability for teaching throughout the main line, in the DBE financial big data experiment platform, using case teaching mode presents enterprise financial internal business analysis, external investment decision application scenarios, the built-in more than 20 listed enterprise earnings data and 6 million group enterprise internal business data processing analysis, learning cutting-edge information technology tools, financial theory knowledge application, understand enterprise digital management system, familiar with enterprise analysis financial indicators and data, commonly used to adapt to the future job environment and requirements in advance.

Using Python data acquisition, data cleaning, MYSQL data storage, business visual analysis software (analysis cloud), data mining and other big data tools, help students to master the internal and external business environment of structured data, unstructured data, combined with the traditional financial analysis index system and big data prediction model, based on business problem simulation scenario financial analysis decision skills, virtual simulation requires the course content, while in the teaching process "quiet" into political elements.

Fusion data collection, data cleaning, intelligent analysis, visual presentation of the whole process of big data tools as one; enterprise competitiveness analysis and business prediction as business scenarios, exercise students global thinking about financial big data application process,

—— data collection model design —— data mining model —— visual —— solution report, cultivate students based on the overall design thinking logic, follow the learning rules, the initial memory, repeated operations to advanced analysis and design theme, let students really master the technical tools and application scenarios.

#### **4. Teaching Optimization and Practice Research Content of "Financial Big Data Analysis" Course**

In the financial big teaching data analysis course, teachers pay attention to the cultivation of students' data collection, sorting and analysis ability, should pay attention to guide students to learn to use blockchain technology, Internet technology, cloud, skilled use Python data acquisition, data cleaning, MYSQL data storage, commercial visualization analysis software (analysis cloud), data mining software for original data collection, data screening and cleaning, mining modeling analysis, etc.

In the context of blockchain technology, the course of "Financial Big Data Analysis" integrates a large number of Internet technologies, and the collection, collation and analysis of big data requires teachers to have more IT professional knowledge. In the process of continuous learning and lesson preparation, the teacher should carefully polish the course and dig the ideological and political elements, take students as the center, optimize the course teaching, and conduct practical research with students' learning results as the guiding research.

In terms of professional practice teaching system, make good use of the experimental platform of cutting-edge information technology in the application of accounting field, and adopt the case-based teaching mode to present the practical application scenarios of enterprise financial internal operation analysis and external investment decision;

In terms of the course content, the project research team carefully polished the course according to the requirements of high order, innovation and challenge of the gold course;

In terms of practice content, build digital scene, provide internal and external management statements, dynamic data kanban, market operation expected benefit and economic and political policy environment risk resistance ability forecast, achieve everyone data kanban, business manager all market feedback, general manager always industry competition analysis;

From the experimental data materials, the built-in more than 20 listed enterprise earnings data and 6 million group enterprise internal management data processing analysis, help students to master the internal and external business environment of structured data, unstructured data, combined with the traditional financial analysis index system and big data prediction model, provide efficient service for management decision-making.

In terms of practical effect, the case teaching design mobilizes students' existing professional knowledge and experience to provide immersive and intuitive understanding of the "real data, real tools and real tasks" to make students have the rigor to treat the real work, and finally reflect the course practice effect through the assessment.

The junior students accept this course, and after the project research, the tracking questionnaire survey on the students, so as to feedback the impact of the practical effect on the students' thinking consciousness, graduation thesis writing, employment direction, the choice of employment industry and the application of information technology in work.

#### **5. Influence of Course Optimization and Practice Research of Financial Big Data Analysis**

Under the background of block chain technology, make full use of the province and the leading

accounting institute financial big data laboratory and DBE financial big data practice teaching platform, to the financial big data analysis course direction planned detailed division of labor, have the traditional curriculum lack of hardware, software guarantee, makes the project has frontier.

After the study of the course, the feedback of the junior students, the internship and future employment in the senior year will bring about the change of ideas and technology applied to practice, which makes this project practical. The application of laboratory and platform plays a reference value for the basic courses and elective courses required by the national standards of accounting, financial management and auditing majors of the School of Accounting. At the same time, it will promote the relevant management and finance courses of the School of Management and the School of Economics and Finance of our school, which makes this project popularized.

In terms of course promotion: (1) for accounting, financial management, auditing major junior students in the financial big data analysis course teaching optimization and practice research, including teaching optimization political elements, to the junior school of accounting to promote teaching, aims to truly master and skilled use of information technology and software, learn useful, in the future jobs "not timid" "no stranger". (2) Relying on the financial big data practice platform, the financial big data laboratory is leading in the province and even the whole country. When receiving the introduction from domestic and foreign universities, the teaching and research results can be exchanged and promoted. (3) Students who study through this course will apply the new ideas and new technologies learned in the course to practice in their future work, and will have a good promotion effect in enterprises and even colleagues and graduates of the same class.

In terms of course application scope: campus level: applied to train students in accounting, financial management and auditing; university level: teaching optimization and practical research results can be promoted and communicated with other universities; enterprise level: bring new ideas and new technologies to achieve good social benefits; teacher level: through project research, clear course teaching direction, while strengthening the application of "finance + IT" in teaching, improve teaching quality and teaching level.

Curriculum benefits: campus: students in Accounting, Financial Management and Audit can achieve the goal of talent training and improve the leading level in intelligent finance by communicating with similar universities; enterprise: students enter enterprises, apply knowledge, create new business card of our university; teachers: teaching, improve professional quality, and laying the foundation for course construction and gold courses.

## Acknowledgements

This work was supported by the 2020 School-level Quality Engineering Project: Teaching optimization and practical research of the course of "Financial Big Data Analysis" under the background of blockchain Technology (No.: ZLGC202017); 2019 University-level scientific research project: Application Research of blockchain Technology in Finance (No.: CJKY201910); Project of 2021-2022 Accounting Research Research Group of Guangdong Province: Improve accounting innovation and development and promote the construction of "New Liberal Arts" (No.: 9-18); 2021 School-level Quality Engineering and Education and Teaching Reform Project: Financial Big Data Analysis Teaching and Research Section (No.: ZLGC2021153; the sixth batch of non-funded scientific research projects in Zhanjiang in 2021: Research And Application Of Financial Big Data Based On FPGA And K-Nearest Neighbor Density Peak Clustering (No.: 2021B01528)

## References

- [1] Gao Shuli, Wang Baohua. *Research on the Teaching Reform of Statistics Curriculum of Economics and Management Major under the Background of Big Data*. *Education and Teaching Forum*, 2020 (11): 144-146.
- [2] Xia Jing, Zhou anyi. *Thinking on the new training mode of accounting talents under the background of big data*. *Accounting Monthly*, 2018 (01).
- [3] Zhang Hongying, Wang Cuisen. *Opportunities and Challenges in Financial Analysis in the Era of Big Data*. *Accounting and Communication*, 2016 (02).
- [4] Mao-Xiang, A. N. , Chen, J. , & Cao, G. . (2013). *On the teaching of database principle and design based on it supporting curriculum group of economics and management major*. *Journal of Anhui University of Technology(Social Sciences)*.
- [5] Tao, Q. . (2021). *Research on the reform and innovation of teaching mode of marketing major in chinese universities under the background of big data*. *DEStech Transactions on Economics Business and Management(eeim)*.