

The study of blockchain technology reshaping accounting discipline system

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Abstract: Blockchain technology is another subversive technology in the development of computer technology after big data and cloud computing. It has been applied and recognized in various industries, and also provides help for the reform of university classroom. In this paper, under the background of big data, blockchain technology reshapes the accounting discipline system, reconstructs the course discipline system of “blockchain + accounting”, and realizes the integration of theoretical teaching, practical teaching and innovation and entrepreneurship teaching content.

Key words: blockchain technology; Blockchain + accounting; Curriculum system

1. Introduction

With the hype of “Bitcoin”, blockchain has gradually attracted the attention of all sectors of society and become an important part of digital intelligence technology. Blockchain technology has the characteristics of decentralization, openness, autonomy, information cannot be tampered with, anonymous technology and so on, which can effectively promote the process of accounting informatization. At the same time, the finance and accounting environment is also undergoing great changes, accounting can basically achieve paperless operation, the social demand for finance and accounting talents to business flow, information flow change, higher requirements for information literacy of finance and accounting personnel, therefore, how to promote the conformal development of finance and accounting majors is the first issue to be considered by universities.

The characteristics of blockchain technology are related to the characteristics of accounting, which objectively determines the importance of blockchain technology to the accounting industry. The financial and accounting community has also been paying more and more attention to blockchain technology, and most scholars have studied it (Shen Zhonghua, 2017; Yang Xianmin et al., 2017; Li Qing, 2017) all believe that blockchain technology is conducive to college education and teaching. Based on this, this paper puts forward the idea of reshaping the accounting curriculum system from the perspective of college education, comprehensively combines blockchain technology with accounting professional disciplines, uses blockchain technology to achieve a talent training model that integrates science and practice, and conforms to the ideological policy of “three-whole education”. In order to build a “block chain + accounting” course system and improve the development speed of accounting major in the information age.

2. Overview of blockchain

(I) Blockchain technology

Blockchain technology is a distributed accounting ledger technology, which can help to share information between ledger copies. Once it is commented by network nodes in the process of application, blockchain technology cannot be revoked, which ensures the integrity and correctness of information, and also ensures the trust between different network members, so it has been rapidly developed in the industry.

In October 2016, the Ministry of Industry and Information Technology clearly pointed out in the “White Paper on the Development of China’s blockchain Technology and Application” that the blockchain system has important value for the healthy development of education and employment. Improve the current higher education with the help of blockchain technology thinking, with a view to promoting the development of blockchain technology in the education industry. In April 2020, the NDRC also included blockchain technology in the scope of new infrastructure.

(2) The impact of blockchain technology on accounting

Blockchain technology has changed the accounting method of traditional accounting and promoted the automation of accounting. Using blockchain technology, accelerate the association of internal and external information of enterprises. For example, in the fee payment business between enterprises and banks, blockchain technology can automatically share and transmit information between terminals and different nodes, improving the efficiency of data information transmission and reducing the cost of manual accounting.

In addition, blockchain technology optimizes the audit work, mainly reflected in the blockchain technology weakens the principal-agent, strengthens the internal supervision, uses blockchain to supervise the transaction nodes of each transaction, realizes the whole process monitoring, improves the monitoring effect, and improves the audit efficiency.

3. Research on blockchain technology and accounting courses

With the continuous application of blockchain technology in enterprises and institutions, it has gradually become the main part of intelligent finance and taxation, which puts forward new demands for accounting talents, and also has fundamental changes to accounting education in universities. In this context, college classrooms and college courses need to introduce blockchain technology to cultivate interdisciplinary talents.

The training system of accounting talents needs to rely on blockchain technology for transformation and optimization (Sun Min, 2020). Blockchain technology can not only reshape the accounting discipline system (He Ying, 2020), but also have a significant impact on

applied undergraduate accounting practice teaching (Liu Chenggang, 2020). How to use blockchain technology to change accounting and how to use blockchain technology to build accounting curriculum system is an important part of the current finance and accounting major in colleges and universities, which is of great significance to promote the teaching reform of accounting major in colleges and universities, and also promotes the employment of college graduates. The blockchain is integrated into the construction of accounting practical training courses. Through scenario-based virtual simulation, the blockchain technology is brought into the campus, accounting practical cases are introduced into the teaching, and the teaching interaction between teachers and students is enhanced by the training role, practice task and teaching process (Xu Lilan, 2019). Study on reshaping accounting discipline system from three dimensions of reshaping financial accounting information system, reconstructing decision support information system, and reforming corporate governance and supervision system by using blockchain technology (He Ying and Yang Mengjie, 2020).

As can be seen from the summary, more and more scholars begin to try the application of blockchain technology in higher education, and the vast majority of colleges and universities have realized the introduction of the basic theory of blockchain and the construction of the basic scenarios of accounting courses. However, there are still major deficiencies in the construction of accounting curriculum system, which is based on the existing research. The “block chain + accounting” course system suitable for colleges and universities should be constructed and designed from the perspective of universities.

4. Construction of the course system of “Blockchain + Accounting”

(1) Basis for curriculum system design

Amer Qasim, Faten F.Kharba (2019) put forward the idea of integrating new technologies into accounting courses to highlight the abilities that need to be focused on in accounting teaching, and the technology-enabled accounting course provides ideas for the construction of accounting course system based on blockchain technology.

At present, accounting major involves a lot of courses, which are generally divided into basic courses and professional core courses according to the characteristics of the learning situation. The former mainly includes basic Accounting, Principles of Management, Financial Regulations, Financial Accounting, Cost Accounting, Management Accounting, Financial Management and Audit Practice, etc. The latter mainly includes “Application of Big data Python technology in finance”, “Application of Big Data Accounting”, “Development of RPA Financial Robot” and “Application of blockchain Accounting”. Blockchain embedded in university finance and accounting courses should be arranged in the second semester of sophomore year or the first semester of junior year. On the premise of fully learning the basic courses, students can introduce the application and learning of blockchain technology to fully realize the integration of science and reality teaching. At the same time, they can combine with virtual technology to build simulation scene teaching, and integrate with the professional skills certificate “1+X” of finance and accounting to realize the integration of courses and certificates. To highlight the principal position of students and comprehensively improve the quality of talent training.

(2) The thinking of curriculum system design

The emergence of blockchain fundamentally changes the current paradigm and builds an accounting system based on blockchain. The use of blockchain technology can liberate human resources from complex and tedious basic work, and enterprise management activities will spend less resources on basic work such as trust, accounting and supervision, so that they can play a greater role in enterprise value creation activities such as analysis, decision-making and innovation. Based on the above curriculum content of accounting major in colleges and universities, starting from the rationality and practicability of course design, this paper uses blockchain technology to carry out research on reshaping the course system of accounting major from three dimensions: “reshaping the leading course module”, “restructuring the basic course module” and “transforming the block chain + accounting” course module.

In this paper, based on the characteristics and attributes of blockchain technology, the path of reshaping the accounting curriculum system is shown in Figure 1.

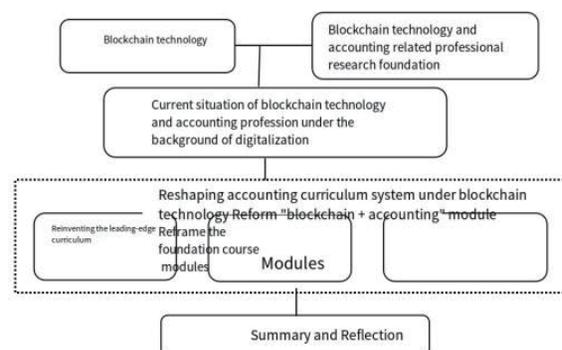


Figure 1 Reshaping the course system path of accounting major

(3) Course system design content

Based on the research of Amer Qasim, Faten F.Kharba (2019), In this paper, courses such as “Accounting Fundamentals”, “Financial Regulations”, “Financial Accounting”, “Management Accounting”, “Financial Management”, “Auditing Practice”, “Application of Big Data Python Technology in Finance”, “RPA Financial Robot Development” and “Blockchain Accounting Application” are selected to reconstruct the accounting curriculum system. The following table 1 describes the learning content, focus ability and teaching method of each course, integrates blockchain technology and other big data technology into the accounting curriculum system, and enhances students’ innovation ability and digital literacy.

Table 1 Content of accounting course system

System	Course title	Core content	Focus on competence
Leading Course modules	Accounting Basics	Understand the fundamentals of accounting and integrating with new technologies.	Select local enterprises to carry out case studies, pay attention to the training of students' software operation ability, and enhance their operational skills.
	Financial and economic regulations	Learn about the latest financial regulations to develop a new age work ethic.	Combined with the latest real-time cases, students are required to think continuously while solving problems.
The base development class change die block	Financial accounting	Understand the principles of financial accounting with a focus on the application of new technologies.	Through some of the latest business cases, students are asked to use blockchain technology for the flow of financial and accounting data.
	Management Accounting	Understand big data analysis techniques that are useful for management decisions.	Make full use of tools such as the Balanced scorecard for big data analysis, understand the big data technologies that are useful for data analysis, and master the use of blockchain in management accounting.
	Financial Management	Understand the role of financial management and focus on the application of blockchain technology.	Use different technologies for decision-making process selection to ensure perceived usefulness.
	Auditing practice	Use big data blockchain technology to conduct audit business.	Connect the audit business to the company's continuous monitoring and business processes, strengthen the internal and external supervision of managers, further ease the principal-agent, and at the same time promote the development of the audit industry.
Blockchain + Accounting course Modules	Application of Big Data Python techniques in finance	Start a financial analysis business using big data.	The church uses digital analytics tools for statement analysis, focusing not just on the data, but on the information behind the data.
	RPA Financial robot development	Complete financial work with RPA Finance robot tools.	Collect the latest financial information of the enterprise and ask students to use RPA robot tools for financial accounting work.
	Blockchain accounting Applications	Understand the fundamentals of accounting and how to use new technologies to implement them.	Blockchain in the quality of access to financial information, its application in bookkeeping methods, reducing financial costs, and enhancing data transparency in financial work.

In the teaching process, teachers design the teaching content according to the connection between blockchain and accounting and the students' cognition of blockchain. Currently, students do not have a deep understanding of blockchain, and teachers should choose a more easy-to-understand way to design the teaching content, so as to mobilize students' enthusiasm and initiative in learning as much as possible.

4. Concluding Remarks

Under the background of digitalization, the impact of blockchain on the field of financial accounting is also deepening, and the demand for composite accounting talents who are proficient in blockchain technology is further increasing. Therefore, it is necessary to combine blockchain technology with accounting standards, and it is necessary to carry out the teaching of blockchain technology in college classrooms. But since the vast majority of students lack knowledge about blockchain technology, it is difficult to blindly adopt indoctrination methods to help students truly understand and apply blockchain technology. From the perspective of college education, this paper expounds the concept of block chain technology and accounting course construction, and optimizes the course system of accounting major.

To sum up, in the process of reforming and designing the accounting curriculum system, it is necessary to design the teaching content of the "block chain + accounting" curriculum system in combination with the design basis of the curriculum design and the content of the curriculum system, and establish the accounting curriculum system with block chain technology. It is hoped that the study of this paper can play a positive role in the application of blockchain technology in the accounting classroom of colleges and universities, and provide theoretical and practical reference for the construction of the accounting major blockchain technology curriculum framework.

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