Research on the Talent Training Model of Finance and Accounting Major in Application-Oriented Universities under the Background of Digital Economy

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Abstract: With the continuous deepening development of China's social economy, cutting-edge information technologies such as big data and artificial intelligence have been deeply integrated into various fields of the economy and society, marking the full arrival of the digital economy era. This profound transformation has brought unprecedented opportunities and severe challenges to enterprise management, and also driven the continuous upgrading of the structure of enterprises' demand for talents. As higher education institutions on the talent supply side, they must accelerate the adjustment and innovation of their talent training models. Focusing on the field of finance and accounting in application-oriented universities, which itself has distinct characteristics of practical application orientation and rapid iteration of professional knowledge systems. Therefore, application-oriented universities must conform to the trend of the times, actively explore innovative paths for talent training, accurately position talent training goals, and strive to enhance students' comprehensive employment competitiveness and career development potential.

Keywords: Digital economy; Finance and accounting major; Talent training

1. Research background and significance

The "14th Five-Year Plan Outline" issued in 2021 clearly points out the development path of the core industries of the digital economy, with special emphasis on accelerating the digital transformation process of the accounting and finance industry.[1] The core goal of this strategic deployment is to empower accounting and finance practices with advanced information technology, promote their upgrading towards intelligence and high efficiency, and thus lay a solid foundation for high-quality development. The digital economy era has put forward new requirements for talents, and the traditional talent training model for accounting and finance majors can hardly adapt.[2] The main problems are the backward curriculum system, insufficient integration of industry and education, and weak digital intelligence skills.[3] Therefore, against the background of the digital economy, it is urgent to reconstruct the talent training model for accounting and finance majors to meet the needs of the new era.[4]

This study takes Guangdong University of Science and Technology as an example. The mission of the School of Finance and Economics of this university is "to create professional characteristics, focus on practical education, and cultivate responsible application-oriented and innovative talents for regional economic development through excellent

talent training programs and advanced teaching models". It can be seen that the talent training program for accounting and finance majors in Guangdong University of Science and Technology is in line with the digital transformation requirements of the "14th Five-Year Plan Outline". Therefore, based on the background of the digital economy era, this paper will conduct research on the talent training model of accounting and finance majors in this university, help improve students' comprehensive abilities and employment competitiveness, and provide theoretical support and practical reference for the reform of accounting and finance education in application-oriented undergraduate universities.

2. Domestic and international research and practice

2.1. Domestic research and practice

In terms of professional upgrading, the Ministry of Education renamed the vocational college "Accounting Major" to "Big Data and Accounting Major" in 2021, promoting the transformation of training objectives from accounting to data analysis and decision support. In terms of curriculum system, the School of Accounting of Hunan University of Finance and Economics has built a full-chain training path of "dynamically optimized curriculum structure - virtual simulation - enterprise scenarios - international education", offering cutting-edge courses such as "Big Data Auditing" and "FinTech", with the proportion of digital and intelligent courses increased to 30%.[5] In terms of school-enterprise collaboration, Ningxia Institute of Technology, together with UFIDA Network and other enterprises, has built the "Digital and Intelligent Finance and Economics Modern Industry College", forming an innovative education model of "six integrations, four practices and seven cooperations". The proportion of practical teaching hours reaches 40%, and the employment rate of graduates has increased to 92%-100%.[6]

2.2. Foreign research and practice

In terms of competency framework, ACCA has launched the "Digital Thinker" certification system, which lists blockchain applications, data visualization, and fundamentals of machine learning as compulsory modules, requiring talents to master the whole process skills from data mining to risk prediction.[7] In terms of curriculum design, the Massachusetts Institute of Technology (MIT) offers the "Analytics Edge" course, which trains students to use Python for financial forecasting modeling based on real enterprise data, with cases covering Amazon's sales data and medical insurance cost analysis. In terms of school-enterprise cooperation, Singapore Polytechnic and PricewaterhouseCoopers have jointly built an "Intelligent Accounting Laboratory".[8]

To sum up, foreign countries are leading the reform through the reconstruction of competency standards and technology-immersive teaching, while domestic accounting education reform focuses on three directions: professional reconstruction, curriculum innovation, and integration of industry and education. However, there are problems such as insufficient technical depth and loose school-enterprise collaboration.[9]

3. Problems in the cultivation of accounting talents in application-oriented undergraduate universities under the background of digital economy

The talent cultivation system for accounting majors in current application-oriented undergraduate universities is still trapped in traditional paradigms, facing three major structural contradictions, which severely restrict the dynamic adaptation ability between talent supply and industrial demand. The following analysis of problems will be combined with the teaching status of accounting majors in the School of Finance and Economics of Guangdong University of Science and Technology.

3.1. Outdated curriculum content

According to a 2023 survey by the Ministry of Education on 200 application-oriented undergraduate universities nationwide, traditional core courses such as Financial Accounting, Auditing, and Cost Accounting still account for over 75% of the credit weight in the curriculum structure of university accounting majors. In contrast, cutting-edge courses with digital economy characteristics, such as big data analysis and Python applications in finance, have insufficient coverage, are disconnected from industry technology applications, and are marginalized. [10] Furthermore, the offering rate of Big Data Financial Analysis courses is only 17.3%, the coverage rate of Python Financial Applications courses is less than 15%, and the offering rates of emerging courses in fields such as blockchain auditing and intelligent tax planning are generally lower than 10%. Textbook updates are also sluggish. Surveys show that over 80% of institutions still use textbooks compiled 5 years ago, and practical technologies such as RPA process automation and AI audit evidence chain analysis have not been incorporated into the knowledge framework.

It is evident that the traditional curriculum structure of university accounting majors does not adequately match the digitalization process of the industry. Taking the accounting major curriculum at the School of Finance and Economics of Guangdong University of Science and Technology as an example, traditional courses such as Financial Accounting, Cost Accounting, and Auditing still dominate. Among the 37 professional education courses, only 4 cutting-edge courses are offered, namely RPA Financial Robot Application, Big Data Decision Analysis, Python and Crawler Technology, and Crawler and Data Visualization Analysis, accounting for only 10.81%. This indicates that the offering rate of big data financial analysis courses is low, the content is outdated, and it fails to meet the requirements of professional education under the background of the digital economy.

3.2. Weak practical training system

A 2024 Deloitte survey of enterprises shows that 68% of CFOs believe the biggest shortcoming of fresh graduates is their "data-driven business decision-making ability"; only 9% of graduates can independently build sales forecasting models, while the industry demand gap is as high as 83%. [11] In the existing practical teaching courses of Guangdong University of Science and Technology, there are 18 application-oriented innovative practice courses, including Basic Accounting Skills Training, Financial Accounting Course Experiment, and Cost Accounting Course Experiment. However, the training mostly relies on laboratory simulations, lacking real enterprise scenarios, resulting in students' insufficient data analysis and business decision-making abilities, which manifests as the "laboratory island" dilemma. Students' training relies on standardized simulation software such as Wangzhongwang Platform and Kingdee K3, with business data mostly being static preset cases, which are severely disconnected from the dynamic operating environment of enterprises. Students' practical operations in computer rooms only involve basic skills such as voucher entry and account registration, while they are severely lacking in advanced abilities such as business-finance integration analysis and risk early-warning modeling.

3.3. Single structure of teaching staff

The teaching team presents a deformed ecology where "academic involution" and "practical anemia" coexist. A survey conducted by the Ministry of Education on 200 application-oriented undergraduate colleges and universities in 2023 shows that only 21.5% of teachers can proficiently use Python for financial analysis, less than 8% master machine learning algorithms, and the proportion of "integrated teachers" with cross-field qualifications such as Certified Public Accountant (CPA) and Data Analyst (CDA) is less than 35%. Teachers generally lack practical experience in enterprises, and the proportion of "double-qualified" teachers who are proficient in the integration of artificial intelligence and finance is even lower. [12]

The above problems do not exist in isolation but form a mutually reinforcing negative cycle. The lag of courses exacerbates the aging of teachers' knowledge, and teachers resist curriculum reform due to their lack of teaching ability in new fields; weak practice leads to teachers' inability to obtain real project experience; the deficiency of teaching staff

reduces cutting-edge practical training to a formality, and the "new technologies" that students come into contact with mostly stay at the level of operation interfaces and cognition. According to data provided by Zhilian Recruitment, the gap of intelligent financial talents reached 570,000 in 2023, while the supply of traditional accounting positions was excessive. It can be seen that the above problems have caused serious consequences of structural imbalance between talent supply and demand.

4. Reform paths of the training mode for finance and accounting talents in application-oriented undergraduate colleges under the background of digital economy

4.1. Reconstructing the curriculum system

As shown in **Table 1** below, on the basis of the existing finance and accounting professional courses, add cutting-edge courses with digital economy characteristics such as intelligent financial decision-making, big data risk control, and data security regulations. Reconstruct the curriculum system of "financial foundation + data skills + technical tools + business scenarios".

Table 1. Reconstruction Framework of Cutting-edge Curriculum System

Curriculum Modules	Course Examples	Ability Goals
Fundamentals of Digital and Intelligent Technology	Python Financial Application, RPA Robot Development	Data Collection, Process Automation
Integration of Core Majors	Intelligent Financial Decision-making, Big Data Risk Control	Data Modeling, Risk Early Warning
Industry Scenario Practice	Digital Control of Manufacturing Costs, Financial Report Analysis of E-commerce Platforms	Integration of Business and Finance, Strategic Formulation
Expansion of Professional Literacy	Business Ethics, Data Security Regulations	Compliance Awareness, Professional Ethics

Through the construction of the aforementioned course cluster, it is intended to solve the major problems of outdated course content and the mismatch between traditional curriculum structures and the digitalization process of the industry. In addition, the credit proportion of 4 cutting-edge courses, namely RPA Financial Robot Application, Big Data Decision Analysis, Python and Crawler Technology, and Crawler and Data Visualization Analysis, should be increased.

4.2. Deepening the integration of industry and education

The integration of industry and education is crucial for enhancing students' practical abilities. Schools and enterprises jointly build practice bases to allow students to gain experience in real job positions. Focusing on new digital business formats, they collaborate to establish research and development centers and projects, strengthening students' digital innovation capabilities and entrepreneurial spirit. At the same time, efforts are made to deepen school-enterprise curriculum cooperation, build simulated practice platforms, integrate case teaching with practical training, and create an integrated practical education model of "learning, practicing, competing, training, and innovating."[13] In addition, it is necessary to actively introduce industry experts to teach, promote teachers' on-the-job training in enterprises, and vigorously build a "double-qualified" teaching team.

For the accounting major, enterprises' real data platforms should be introduced to build a "Financial Digital Intelligence Virtual Simulation Base" to support students in conducting real-time analysis of listed companies' financial reports. Meanwhile, joint efforts are made to hold the "Financial Big Data Application Ability Competition," with real enterprise cases as competition questions, to strengthen data insight and decision-making abilities.[14]

4.3. Construction of teaching staff

Vigorously implement the enterprise tutor system and build an "industrial professor pool." Specifically, first, target enterprises in the Guangdong-Hong Kong-Macau Greater Bay Area, focus on hiring financial leaders to form an "industrial professor pool," who will undertake a certain proportion of front-line professional course teaching. Second, adopt the "double-teacher classroom" model (for example, the theoretical part is taught by in-school teachers, and case operation is guided by tutors), to strengthen the construction of the teaching staff. Third, adopt the "project-based teaching method," where enterprise tutors and in-school teachers jointly develop a "digital intelligence teaching case database" and integrate it into the school-based textbook system. Fourth, establish school-enterprise joint teaching and research offices, hold regular industry-university-research joint meetings, synchronize the latest industry technology trends such as updates to accounting standards and the application of RPA financial robots, and adjust the focus of classroom teaching.[15] Fifth, on the basis of the existing annual continuing education rules for teachers, promote teacher transformation plans. For example, classify teachers according to whether they have practical work experience in enterprises within 3 years, and strongly implement the on-the-job training system for existing teachers in enterprises to improve their practical capabilities.

5. Conclusion

The era of digital economy requires accounting talents to transform from "value recorders" to "value creators." This paper proposes solving the lag of knowledge through curriculum reconstruction, breaking down ability barriers through the integration of industry and education, and ensuring teaching effectiveness through the upgrading of teaching staff, providing a systematic plan for the reform of accounting education in application-oriented universities. It helps optimize the talent training model of the accounting major in the School of Finance and Economics of Guangdong University of Science and Technology, and improve the comprehensive ability and employment competitiveness of accounting students. In the future, it is necessary to further explore training paths to enable talents to have core literacy that can continuously adapt to technological iteration. The ultimate goal is to build a self-evolving accounting education ecosystem.

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