

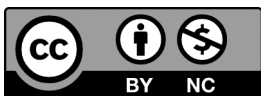
Research on the Digital and Intelligent Transformation Path of University Finance Discipline Construction from the Perspective of University-Industry Collaboration

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Abstract: The rapid development of artificial intelligence poses a challenge to the digital transformation of financial discipline construction in universities. Based on combining the existing research results, from the perspective of university-industry collaboration, combined with the exploration of digital intelligence transformation in other universities, and the practice of university-industry collaboration in our university's financial discipline, first, digital intelligence in financial discipline construction is the deep integration of financial discipline construction and digital intelligence technology. Through restructuring the theoretical system, research methods, and practice scenarios of financial discipline, talent cultivation based on the new technological revolution can be achieved. Secondly, the digital transformation of financial discipline construction requires not only the establishment of a digital educational technology foundation; we also need to enrich the knowledge system of the financial discipline with the application results of digitalization in the financial industry; and while helping to solve new problems in the industry, we will also cultivate an interdisciplinary teaching team that can serve the digitalization process of the financial industry. Third, university-industry collaboration is the core driving force for the digital and intellectual transformation of financial discipline construction.

Keywords: Construction of finance discipline; Digital transformation; University-industry collaboration; Fintech



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1 Introduction

In the era of artificial intelligence, the deep integration of digital technology and the financial industry is reshaping the industry landscape, and the business model and risk management of financial institutions are undergoing changes, which also puts forward new requirements for talent cultivation and scientific research innovation in the field of finance in universities. The traditional finance discipline focuses on the training mode of theory and classic models, which is

Research/Funding project: This article has received funding support from the 2024 China University of Petroleum (Beijing) Education and Teaching Reform Research General Project.

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Article Citation: Sun, Z., Xue, S. L., & Zhang, Y. Y. (2025). Research on the Digital and Intelligent Transformation Path of University Finance Discipline Construction from the Perspective of University-Industry Collaboration. *Guide to Education Innovation*, 5(4), 188-200.

no longer suitable for the industry's demand for "finance digital skills" composite talents. The transformation of the discipline into a digitalized one has become an inevitable choice for universities.

Currently, many domestic universities have keenly captured this trend and are promoting the construction of digital teaching platforms and intelligent financial learning platforms. The former breaks the time and space limitations of traditional classrooms by introducing tools such as virtual simulation experiments and financial big data analysis training systems, allowing students to enhance their practical abilities in simulating real financial scenarios; the latter relies on cloud technology to integrate massive digital educational resources such as domestic and foreign financial databases, academic literature, industry reports, etc., providing efficient knowledge acquisition and academic research support for teachers and students. So, what is the digital transformation of financial discipline construction? How can the construction of financial disciplines achieve digital transformation? How can the construction of intelligent teaching platforms promote the digitalization of the finance discipline?

Based on the background of industry transformation, combined with the early practice of financial discipline construction and university-industry collaboration, this paper explores the path of digital and intellectual transformation of financial discipline construction. It provides a reference for colleges and universities to cultivate complex financial talents.

2 The Current Status of Research on the Transformation of Digitization in Finance and Education

With the development of artificial intelligence, digital technology has laid the technological foundation for the digitalization construction of the financial industry, higher education, and financial disciplines; the digital transformation of the financial industry has improved the efficiency of industry services, provided various application scenarios for the construction of financial disciplines, and laid the foundation for knowledge system innovation in the digital transformation of financial discipline construction.

2.1 Digitization is a Technological Revolution of Human-Machine Intelligence Integration under the Premise of "Human Centeredness"

In the face of massive amounts of educational digitization platform data and materials, the digitization transformation should be "people-oriented", achieving human control and utilization of data and materials. Ji Chuanbo (2024), the editor in chief of Peking University Press, pointed out that the term "digitalization" first appeared in the 2015 *Think Engine report* proposed by the Peking University "Knowledge Capital Foundation" research group. In the report, "digitalization" is the combination of "digital intelligence" and "wisdom digitization" (Ji, 2024). As of the latest literature, there are over 5500 articles with the term "digitalization" included in their titles. However, most of these articles have not provided a clear definition and explanation of the term "digitalization". After reviewing the discussions on the meaning of digitalization, the following opinions are mainly presented. Wang Bing (2023) defined digitization as a deep fusion process driven by data, utilizing the technical system of "data + computing power + algorithm" to realize the self-learning and optimization of the system (Wang, 2023); Qi Yanping (2022) emphasized that the essence of digitization is the system evolution from digitization to intelligence (Qi, 2022). Wang Zhuli et al. (2024) believed that digitization should reflect deep dialogue and interaction between humans and machines, and achieve the inheritance

and deep learning of human logic by machines under the premise of “human centeredness” (Wang et al., 2024). It can even achieve the goal of “enlightening humans”. Therefore, digitization is a new stage of technological revolution that focuses on people and deeply integrates them with digitalization, moving from digitalization to intelligence.

2.2 Digitization of Education is a Comprehensive Innovation in Talent Cultivation Based on the Deep Reconstruction of the Education System

Educational digitization is an upgraded version based on digitalization, which not only includes the digital processing of information, but also focuses on the mining and application of data intelligence, emphasizing the “deep reconstruction” of the education system. Xing Zhanjun (2024) believed that the digital transformation is a systematic reconstruction of all elements of higher education. Technological empowerment provides a clear technological path for educational transformation, which helps accelerate the application of technology and infrastructure construction in the field of education (Xing & Wang, 2024). However, excessive reliance on technology and neglect of the fundamental goals of education will lead to educational reform falling into a quagmire of technological supremacy. Therefore, some scholars focus on the core issue of “what kind of people to cultivate and how to cultivate them” from the perspective of value guidance, emphasizing that the digitization of education should attach importance to “education as the foundation”. Shu Hang and Gu Xiaoqing (2023) proposed that the digitization of education should be based on “educating people” and promote the reshaping of the overall education ecosystem through diverse and collaborative approaches (Shu & Gu, 2023). Zhang Zhihua et al. (2022) proposed that the digitization of higher education should not only rely on technological empowerment but also adhere to the essence of education, achieving a dialectical unity of “change” and “constancy” (Zhang et al., 2022).

2.3 The Digitization of the Financial Industry is Driven by Financial Technology Innovation to Expand Business and Improve Efficiency

Firstly, the digitization of the financial industry refers to the development and application of intelligent technology in the financial sector, empowering the financial industry to move towards higher stages through artificial intelligence technology. Li Xianghong and Lu Minfeng (2023) believed that financial technology, including various digital technologies such as big data and blockchain, serves the financial industry (Li & Lu, 2023). With the continuous innovation and development of digital technology, the role of financial technology in the financial industry is also expanding. Nie Xingkai et al. (2022) believed that financial innovation and financial technology complement each other. Financial innovation constantly puts forward new demands for technology, and the innovation of financial technology helps financial innovation to develop in depth. Financial technology drives the financial industry to continuously move towards high-quality goals (Nie et al., 2022). Secondly, the transformation of financial intelligence is a process in which the financial industry applies financial technology to improve its own efficiency. Artificial intelligence technology, represented by large-scale models, is reshaping the underlying logic and operational methods of financial services. Generative AI based on deep neural networks and massive data training has become the “decision advisor” and “efficiency engine” of financial institutions, driving the evolution of service paradigms towards intelligence, personalization, and inclusiveness. For example, in the field of risk management, it can reduce the non-performing loan rate of small and micro loans. In the field of customer service, it can understand complex inquiries and generate asset allocation plans. In terms of regulatory technology, it can greatly improve the efficiency of analyzing regulatory texts (He & Huang, 2025).

In addition, relying on the advantages of intelligence in data collection and processing technology, the financial industry can more comprehensively grasp the financial needs of market entities, thereby providing more personalized, digital, and intelligent products and services, enhancing the resources and information processing capabilities of financial institutions, and improving the quality of decision-making and management of various financial businesses and financial risks (Li, 2024).

To summarize the above research, firstly, the technological revolution of human-machine intelligence integration has laid the technological foundation for the digital transformation of the education and finance industries; secondly, the goal of educational digitization is still to apply digitization technology to cultivate composite high-quality talents; thirdly, the digitization of the financial industry is an innovation in the application scenarios of financial technology, providing rich and diverse practical content that meets the needs of the industry for talent cultivation in the field of finance. The above viewpoints and thoughts have promoted our thinking on the intelligent transformation of financial discipline construction. However, how to implement it specifically at the level of digital transformation of financial discipline construction still needs to be explored in terms of its basic meaning and goals to guide practice.

3 The Meaning and Development Goals of the Digital Transformation of Financial Discipline Construction

The construction of financial disciplines is facing a digital transformation. So, what is the digitalization of financial discipline construction? What is the relationship between the digitization of financial discipline construction and the digitization of the financial industry, and what are the goals of digital transformation in financial discipline construction?

3.1 The Meaning of Digitalization in the Construction of Financial Disciplines

Because finance is the fundamental educational unit for cultivating advanced composite talents in the financial industry, based on the basic meanings of finance and digitization, this article believes that the construction of digitization in finance should be a deep integration of finance and digital technology. By reconstructing the theoretical system, research methods, and practical scenarios of finance, talent cultivation can be achieved based on the new technological revolution. Its specific meaning can be decomposed as follows: firstly, from the perspective of technological foundation, supported by big data, artificial intelligence (such as machine learning, natural language processing), blockchain, cloud computing and other technologies, breaking the traditional financial model that relies on empirical judgment, and making big data and intelligence the core means of teaching and research; secondly, from the perspective of disciplinary knowledge system, it is not only the application of technology in the financial field, but also promotes the upgrading of the financial disciplinary system itself - such as integrating data science logic into financial theory, introducing intelligent algorithm models in risk pricing, asset allocation and other research, and supplementing digital scenario analysis in financial supervision, corporate finance and other directions; thirdly, from the perspective of teaching practice scenarios, covering the entire financial chain, including intelligent investment advisory, quantitative trading, intelligent risk control, digital payment clearing, etc., to achieve precision, automation, and efficiency in financial services. Therefore, the key to the digitalization of financial disciplines lies in the fact that digitalization not only

promotes the development of financial theory but also expands the practical application scenarios of digitalization in financial disciplines.

3.2 The Digitization of the Financial Industry will Promote the Digitization of Financial Discipline Construction

The digitalization of financial discipline construction relies on the digitalization process of the financial industry, and will form a complementary and mutually reinforcing relationship in the future. Firstly, from the meaning of digitalization in the construction of financial disciplines mentioned above, the digitalization of the financial industry has laid the foundation for the digitalization of financial disciplines from three aspects: technological foundation, development of the disciplinary knowledge system, and practical scenarios. Secondly, the digitalization development of financial disciplines is based on innovative practices of industry digitalization. On the one hand, to gain market competitiveness and higher monopoly profits, the financial industry has more motivation for digital technology innovation; on the other hand, under the pressure of talent demand, the construction of financial disciplines is rapidly absorbing the achievements of digitalization in the financial industry, promoting innovation in the discipline system, and achieving the transformation of disciplines into digitalization. Therefore, the interaction between the two ultimately forms a development trend of mutual promotion between the construction of financial disciplines and the digitization of the financial industry.

3.3 The Goal of Digitalization Transformation in the Construction of Financial Disciplines

From the relationship between the digitization of financial discipline construction and the digitization of the financial industry, it can be inferred that the digitization transformation of financial discipline construction requires not only the establishment of a foundation in digitization education technology, but also the development of a digital education technology; secondly, it is necessary to enrich and innovate the knowledge system of the financial discipline with the application results of digitalization in the financial industry; thirdly, taking the new problems encountered in the financial industry as a research topic for the development of digitalization in the construction of financial disciplines, while cultivating interdisciplinary and composite talents, serving the digitalization process of the financial industry. Therefore, from the perspective of university-industry collaboration, the goal of digital and intelligent transformation of financial discipline construction is to learn from the innovative application of digital and intelligent technology in the financial industry, collaborate with the financial industry in innovation, improve the knowledge system of digital and intelligent technology in the discipline, and achieve the goal of cultivating high-quality composite talents required by the financial industry in the digital and intelligent era.

The construction of financial disciplines and the digitization of the financial industry are a gradual and mutually reinforcing process. On the one hand, the construction of digital technology foundation in the field of finance has helped solve previously difficult problems, such as using blockchain financial technology to solve the problem of repeated mortgage financing in financial institutions; at the same time, digital technology has also opened up new space for the development of disciplinary knowledge, enriching the theoretical boundaries of finance, such as new interdisciplinary directions such as “financial data science” and “intelligent financial engineering”; on the other hand, digitization has brought the finance discipline closer to the practical needs of the digital economy, cultivating composite talents with both financial thinking and digital intelligence skills. Therefore, the digital transformation of financial discipline

construction is a gradual promotion of the cross integration of technology application and disciplinary knowledge system development. Based on increasingly abundant digital learning resources, environments, and tools, it ultimately achieves student-centered, independent, efficient, and intelligent learning and talent cultivation.

To sum up, from the discussion on the relationship between digital intelligence in the above industries and digital intelligence in the disciplines, we can consider exploring the path to achieve digital intelligence transformation in financial discipline construction from the perspective of university-industry collaboration.

4 University-Industry Collaboration Can Promote the Digital Transformation of Financial Discipline Construction

In the era of digital intelligence, the digital intelligence transformation of financial discipline construction cannot be separated from university-industry collaboration. At present, China has established an innovation system led by enterprises in collaboration with universities and research institutions, with enterprise R&D investment accounting for over 77% and leading nearly 80% of key R&D projects (Zhang, 2025). University-industry collaboration will become an important driving force for the digital and intellectual transformation of financial discipline construction.

4.1 Why Can University-Industry Collaboration Promote the Digital and Intellectual Transformation Path of Financial Discipline Construction

Firstly, guided by the goal of pursuing efficiency and effectiveness, the digitization of the financial industry precedes the digitization transformation of the financial discipline. Artificial intelligence is beginning to influence the operation of financial systems through data mining and machine learning in many aspects - intelligent algorithms replacing manual asset pricing, blockchain technology revolutionizing payment and clearing rules, and financial models reconstructing customer service models. The digitization of financial discipline construction is the integration of innovative achievements of AI technology applied to the financial industry into the theoretical system of finance, to enhance the explanatory power of financial theory for industry practice and the forward-looking power for future development. Therefore, university-industry collaboration is an important force to promote the construction of financial discipline, to constantly learn the latest achievements of digital and intelligent development of the financial industry, and to achieve digital and intelligent transformation.

Secondly, university-industry collaboration is the key link between the digital intelligence of financial discipline construction and industry demand. One of the core goals of the digital transformation of financial discipline construction is to cultivate intelligent financial talents who can solve practical problems in the industry, and the realization of this goal cannot be achieved without the deep integration of theoretical teaching and industry practice. Traditional financial education focuses on the construction of theoretical systems, but the development of digital finance requires talents to not only master the basic theories of finance, but also be able to apply intelligent risk control models, financial big data analysis and other skills. The cultivation of these skills must rely on real industry scenarios and data to effectively cultivate them. Through university-industry collaboration, financial institutions introduce practical projects such as intelligent investment advisory system development and quantitative trading strategy optimization into the classroom, so that students can master the application logic of digital intelligence tools in dealing with desensitized customer data and participating in algorithm iteration; at the same time, enterprise experts can provide real-time updates on the latest

industry requirements for compliance algorithms, AI ethics, etc., helping schools dynamically adjust their curriculum system and avoid teaching content lagging behind industry practices. This connection mechanism of “theory, practice, test, demand, feedback, teaching optimization” fully reflects the role of university-industry collaboration in promoting the transformation of digital intelligence in financial discipline construction.

Once again, the application scenarios driven by digital intelligence in the financial industry have prepared the latest digital innovation achievements for the construction of financial disciplines. With the rapid breakthrough of digital technology, the application scenarios of the financial industry are accelerating their expansion and reconstruction, presenting new characteristics of “multi-party participation, high-frequency collaboration, and real-time decision-making”. For example, with the multi-party secure computing (MPC) technology developed by Professor Yao Qizhi’s team at Peking University, it is possible to use data modeling from different sources in the background to achieve cross-institutional and cross-industry data joint modeling while ensuring data privacy for all parties. This breaks through the limitations of data confidentiality requirements from different departments and effectively promotes the development of financial services in the industry chain. Currently, this technology has been applied in the bank credit business and government public data services. (Liu & Sun, 2021) Due to the obvious shortcomings of universities in technology iteration, data acquisition, and scenario reconstruction, it is impossible to achieve the digitization transformation of disciplines solely relying on the internal resources of universities. The rapid development of digital innovation in these financial industry scenarios provides a practical foundation and technical support for embedding real industry scenarios into the teaching system of universities. Therefore, universities can rely on deep collaboration between industry, academia, and research to promote the digital transformation of financial discipline construction.

In addition, the construction of digital finance-related majors in foreign universities is completed based on close cooperation between industry, academia and research. For example, the Master’s program in Finance, Technology and Policy at the University of Edinburgh, whose course structure and content were gradually determined through multiple interviews and exchanges with the financial industry, especially fintech entrepreneurs (most of whom later became external mentors of the program), after repeated discussions and enough argumentation. The curriculum of the “Master of Finance, Technology, and Policy” program is designed from the perspectives of finance, technology, and policy, based on theories such as financial economics, sociology and philosophy, practical programming and machine learning, and big data analysis. The aim is to cultivate students’ ability to explore market customers, encourage them to participate in consulting and research projects initiated by financial institutions, and enable them to develop effective solutions based on the challenges and problems faced by enterprises. (Sun et al., 2022)

4.2 University-Industry Co-Laboration Creates a Digital Intelligence Platform for Colleges and Universities, Innovatively Solves Industry Problems, and Cultivates a Digital Intelligence Teaching Team for Disciplines

First, university-industry collaboration creates a digital and intelligent platform, and collaboration between financial technology enterprises and university cross-border teacher teams becomes a necessary condition. In June 2025, the “Digital Finance Laboratory” jointly established by the Shenzhen Research Institute of Renmin University of China will leverage the advantages of disciplines such as finance, artificial intelligence, and big data, and work with small winning technology enterprises to create a platform for integrating industry, academia, and research, promoting theoretical innovation and technological transformation in digital finance. Xiaoying Technology is a leading fintech group in China,

with significant achievements in innovation and layout in the field of digital finance, especially in serving small and micro enterprises. With the addition of excellent fintech companies, the research institute relies on the laboratory to focus on the synergistic advantages of “technology foreign trade finance” in the Guangdong-Hong Kong-Macao Greater Bay Area, by forming cross-border teams, conducting cutting-edge scientific research, providing practical opportunities for intelligent financial talents, and promoting the transformation of industry-university research achievements. (The New Beijing News, 2025)

Secondly, the government university-industry collaboration has jointly built a digital and intelligent platform, and the university’s cross-border teacher team has solved social problems such as financial risk governance in a digital and intelligent way. In 2023, the Smart National Governance Laboratory jointly established by Shandong University and Qingdao Political and Legal Affairs Commission will be the first interdisciplinary laboratory for “smart governance” in domestic universities. The laboratory integrates high-level research teams from the School of Political Science and Public Administration, School of Information Science and Engineering, School of Law, School of International Innovation and Transformation, and other top universities and research institutions, forming interdisciplinary and cross-disciplinary teams. Based on the research method of deep learning risk decision-making and intelligent analysis of financial big models, the team provided a practical and scalable risk control intelligent solution, assisting the Qingdao Political and Legal Affairs Commission and financial regulatory departments in identifying 450 risky enterprises, clearing nearly 9000 investors, and clearing more than 1 billion yuan of funds, greatly improving the efficiency of financial security governance. (Wang, 2025)

Thirdly, based on the innovation of digital and intelligent application of financial technology, university-industry collaboration has jointly built a digital and intelligent platform. The “Aodun No.1” small and medium-sized enterprise digital risk control credit platform, developed by students from Macau University of Science and Technology, focuses on solving the financing difficulties of small and medium-sized enterprises. Previously, loans for small and medium-sized enterprises in Macau were cumbersome to apply for, complex to obtain bank credit, and lacked convenient platforms. Banks also faced problems such as single data collection, non-standard approval, and slow digital transformation. The platform leverages cutting-edge technology breakthroughs to collect multi-dimensional characteristic data from within banks, customer uploads, and third-party sources. The ResNet50 network model is used to process the data, accurately evaluate corporate credit and repayment capabilities, screen customers, provide credit scores and limit recommendations, and construct warning indicators. Compared to traditional processes, it reduces 11 nodes to 6, achieving online application, instant approval, and greatly increasing efficiency. Small and medium-sized enterprises can easily apply for loans through it, simplify procedures, reduce the non-performing loan ratio of banks, and alleviate the difficulty of enterprise financing. This project has won the special prize in the “ICBC Cup” National College Student Financial Technology Innovation Competition. (Huang et al., 2024)

To sum up, university-industry collaboration has a substantive role in promoting the digital and intellectual transformation of financial discipline construction. By building a bridge between disciplines and industries, we aim to assist in the construction of financial disciplines by drawing on the practical achievements of digital finance in real time, and promote the iterative upgrading of the theoretical system of finance; relying on the university-industry collaboration mechanism, we can achieve accurate matching between teaching content and industry demand, and cultivate complex digital intelligence financial talents; at the same time, leveraging industry resources to compensate for the shortcomings of universities in technological iteration and scenario construction, and collaborating to jointly build a digital intelligence

platform, while solving the problems in the financial industry, strengthening the construction of interdisciplinary digital intelligence teaching staff. Next, this paper will explore the path of digital and intellectual transformation of the energy finance discipline construction in combination with our university-industry collaboration practice.

5 Industry University Research Cooperation Promotes the Construction of Financial Discipline Characteristics and the Path of Digital Transformation

5.1 Collaboration between Industry, Academia and Research Promotes the Construction of Our University's Energy Finance Characteristics and Explores the Application Scenarios of Blockchain Finance

The development of the finance discipline at China University of Petroleum (Beijing) hereinafter referred to as "CUPB" faces two major challenges: energy transformation and digital transformation. Its goal is to cultivate talents that meet the demand of the energy finance market in the future digital era. Specifically, firstly, energy transformation refers to the transition of energy from fossil fuels to non-fossil fuels. Specifically, in the crude oil industry chain, it involves a shift from the previous use of crude oil for refining and producing gasoline, coal, and diesel fuel to a more extensive use in the back-end industry chain for producing petrochemical products. Since crude oil is an international bulk strategic material, and the petroleum and petrochemical industry has a long industrial chain and professional technical expertise, especially with the modern market system of crude oil futures and spot, as well as the large-scale and constantly advancing petroleum and chemical spot product market, there is a continuous growth in demand for energy finance professionals worldwide. Secondly, in the era of digitalization, the energy finance market

Continuously innovating, such as the Shanghai Futures Exchange (SHFE) and Zhejiang International Commodity Trading Center (ZME), the former's oil futures trading and the latter's oil and gas spot trading markets utilize blockchain financial technology to promote the integration of the oil and gas futures market and spot market, achieving information sharing and authentication among oil and gas enterprises, warehouses, banks, trading platforms, customs, etc. At present, ZME and SHFE have achieved mutual recognition and interoperability of standard warehouse receipts, and have further promoted the interoperability of warehouse receipt transactions. This has achieved the first local trading venue in China to list warehouse receipts for trading on the Shanghai Futures Exchange, which not only improves the trading efficiency of the futures and spot markets, but also accelerates the innovation of trading models, such as scheduling.

5.2 The University-Industry Collaboration has Promoted the Construction of the Characteristics of Our Financial Discipline, the Digital Intelligence Platform and the Practice Base

At present, the construction of the finance discipline at CUPB has established a deep cooperation system with the two core markets of petroleum commodity futures and spot, relying on its distinctive energy finance characteristics. Firstly, in the field of futures market cooperation, we have officially signed a framework cooperation agreement with the previous futures exchange. Based on the support from the previous period, the "Energy Economy and Finance Big Data Laboratory" will be established to provide a practical platform for the digital transformation and scientific research exploration of the energy finance discipline. Moreover, with the support of the previous session, we also hosted

the first Energy Finance Forum, bringing together industry experts and academic forces to promote the integration of energy finance theory, innovation and industry. Secondly, in terms of cooperation in the petroleum and petrochemical spot market, we have reached a strategic partnership with ZME to focus on building an internship practice base. On this platform, students can participate in practical activities on the front line, learn and track the specific application of blockchain technology in the “futures cash integration” of SHFE’s futures business and ZME spot business. They can design their graduation thesis topics based on practical problems in the implementation of technology, so that academic research can closely meet industry needs. In addition, we have also established cooperation relations with two other domestic oil and gas spot trading platforms - Chongqing Oil and Gas Trading Center and Shanghai Petroleum and Natural Gas Trading Center (SHPGE), forming a university-industry collaboration cooperation relationship between the financial discipline of China Stone University (Beijing) and the oil futures market, spot market and their financial service institutions, such as Nanhua Futures (NHF), China Securities Co. (CSC), etc.

5.3 The Continuous and In-Depth Cooperation between University-Industry Collaboration has Promoted the Professional Construction of the Energy Finance Discipline and Enriched the Teaching Content of Energy Finance

Firstly, in addition to collaborating with the oil and gas futures market, spot market, and financial service institutions, the disciplinary team continues to participate in the annual International Oil Merchant Conference held by ZME, focusing on the digital upgrading of China’s energy futures market and spot market, and conducting special tracking research. The research focuses on the application scenarios of blockchain financial technology, with a focus on analyzing how the technology can help promote the integration of futures and spot markets, how to achieve information sharing and authoritative certification among multiple entities such as oil and gas enterprises, warehousing institutions, banks, trading platforms, and customs, and how to empower market operation efficiency and stimulate new financial service models through technology, providing theoretical references and practical basis for the innovative development of the energy finance industry. Secondly, the digitalization innovation in the energy finance industry has put forward higher requirements for energy finance talents. These requirements require students not only to master financial professional knowledge, but also to master the interdisciplinary integration knowledge system of petrochemical professional technology; understand the latest innovations in energy finance and their breakthroughs in the financial theoretical system; we also need to possess the ability to apply digital technology and innovative thinking; and the comprehensive quality and ability to solve financial problems based on the above foundation. To this end, our university’s finance discipline and petrochemical major are collaborating to establish a dual degree program in energy finance, to better meet the requirements of the energy transformation in the digital age for composite talents in energy finance. Thirdly, relying on the rich experience and research results accumulated in the above university-industry collaboration, the case written by the discipline team “Holding hands and advancing together for win-win result - the way of integration of SHFE and ZME” was successfully included in the case library of the National Steering Committee for Graduate Education in Financial Professional Degree. This achievement is the continuous tracking and learning of the digitalization and innovation achievements in the energy industry in the finance discipline, and the construction of CUPB. It enriches the application innovation achievements of financial technology in the energy finance industry into our school’s energy finance teaching system, providing fresh and high-quality teaching materials for cultivating talents that meet the needs of the energy finance field.

5.4 Future Prospects for the Digital Transformation of Finance Discipline Construction in Our University

The digitalization transformation of the finance discipline construction in our university is currently underway. The Energy Low Carbon Digital Intelligence Experimental Teaching Platform is under construction. Based on the Energy Economy and Finance Big Data Laboratory, we have invested in the construction of an oil and gas quantitative investment and intelligent trading simulation platform, with the aim of breaking down professional disciplinary barriers and promoting interdisciplinary integration such as finance, mathematics, and information technology; externally connecting the oil and gas industry with the financial market, introducing real data and cutting-edge trading concepts from the Shanghai Futures Exchange and Zhejiang Bulk, and providing excellent talents for quantitative investment, risk management, and intelligent trading in the oil and gas field. Based on the research, this article believes that based on the construction of a digital experimental teaching platform, the digital transformation of the energy finance discipline still needs to complete the following four aspects of work. Firstly, because of establishing cooperative relationships with energy finance futures markets, spot markets, and service institutions, excellent financial technology companies should be selected to deeply participate in the construction of digital teaching platforms, especially in the teaching process. The practical achievements of the financial industry's digital intelligence should be integrated into the talent cultivation process through various methods such as classroom teaching, internships, competitions, and graduation theses. Secondly, an interdisciplinary team composed of teachers specializing in digitalization and energy finance has entered the laboratory, changing the previous situation of using teaching and experimental facilities for a single major and course, and effectively leveraging the intelligent education role of the digitalization experimental platform. Third, give play to the advantages of newly introduced young talents in big data finance and artificial intelligence, track and study the digital and intelligent transformation of the energy industry, actively identify and participate in solving problems in the transformation of the energy finance industry on the basis of university-industry collaboration, and cultivate cross-border digital and intelligent teachers. Fourthly, the research results on digitalization introduced through industry university research cooperation will be enriched and improved through teaching, professional competitions, lectures, graduation theses, as well as textbook construction, paper writing, case development, and other methods to enhance and perfect the theoretical system of energy finance in the process of digitalization transformation. This will effectively promote the digitalization transformation of the energy finance discipline construction and achieve the goal of cultivating high-quality talents in the era of digitalization.

6 Conclusion

Based on the above analysis, this article draws the following conclusions. Firstly, the digitization of financial discipline construction is not simply a combination of technology, but a deep integration of financial discipline construction and digital technology. By reconstructing the theoretical system, research methods, and practical scenarios of the financial discipline, talent cultivation can be achieved based on the new technological revolution. It is supported by intelligent technologies such as big data, artificial intelligence, and blockchain, breaking the theoretical boundaries of traditional financial disciplines, integrating data-driven thinking into the financial theoretical system, innovating traditional research methods based on empirical judgment, and building intelligent practical scenarios that simulate

real financial markets. Through this comprehensive transformation, the theoretical knowledge system of the finance discipline is enhanced, enabling students to not only master financial professional knowledge but also possess the ability to use digital technology to solve complex financial problems, meeting the demand for composite talents in the financial industry under the new technological revolution.

Secondly, the digital transformation of financial discipline construction requires not only the establishment of a digital educational technology foundation; we also need to enrich the knowledge system of the financial discipline with the application results of digitalization in the financial industry; and while helping to solve new problems in the industry, we will also cultivate an interdisciplinary teaching team that can serve the digitalization process of the financial industry. First, it is necessary to establish a solid foundation of digital education technology and introduce hardware facilities such as intelligent teaching platforms and virtual simulation laboratories to provide technical support for teaching and research; second, it is necessary to keep up with the pace of digitalization in the financial industry, timely transform the application achievements of intelligent investment advisory, algorithmic trading, digital payment and other industries into teaching content, update the knowledge system of financial disciplines, and avoid the disconnection between teaching and practice; third, we should be guided by the actual needs of the industry and encourage teachers to participate in the digitalization projects of financial institutions. In the process of helping to solve new problems, such as risk prevention and customer profiling, we should enhance teachers' interdisciplinary research abilities and gradually build an interdisciplinary teaching team that combines financial professional literacy and digital technology capabilities.

Finally, university-industry collaboration is the core driving force to promote the digital intelligent transformation of financial discipline construction. Financial institutions, as the forefront of digital applications, can provide real business scenarios, massive practical data, and the latest technological needs for universities; universities, relying on their theoretical research advantages, provide academic support and talent reserves for the digital transformation of financial institutions; research institutions can focus on the key challenges of digital intelligence technology in the financial field and conduct forward-looking research. Through resource sharing and collaborative innovation, the three can accelerate the process of digitalization in the financial discipline and promote the practical application of digital technology in the financial industry, achieving a win-win situation for all parties.

To sum up, from the perspective of university-industry collaboration, studying the path of digital and intelligent transformation of financial discipline construction in colleges and universities can avoid limiting the digital and intelligent transformation of financial discipline construction to digital and intelligent platform construction, but at the same time of accelerating the construction of digital and intelligent technology infrastructure, including the digital and intelligent education system that intelligently mobilizes massive learning resources, we should adhere to the "people-oriented" principle, integrate the innovative application achievements and application scenarios of financial industry and financial technology enterprises in digital and intelligent transformation into the digital and intelligent transformation process of financial talent training in colleges and universities, enrich the knowledge system of the digital and intelligent era of financial discipline construction in teaching, research, practice and other links, in the form of textbooks, cases, papers, contest works, etc. In the process of university-industry collaboration, we have cultivated a team of digital and intelligent teachers who can cooperate in teaching and scientific research to innovate and solve problems in the financial industry, making greater contributions to talent cultivation and promoting high-quality development of the financial industry.

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