

Research on the Construction of First-Class Financial Courses in Undergraduate Colleges and Universities Under the Background of Digital Economy

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Abstract: The rapid development of the digital economy has driven the innovation of financial industry formats, and new fields such as financial technology, big data risk control, and intelligent investment advisory have raised higher requirements for the digital literacy and practical abilities of financial talents. This article combines the characteristics of applied undergraduate universities and colleges, analyzes the impacts and opportunities of the digital economy on the construction of finance courses, and constructs a path for building first-class finance courses that are compatible with the digital economy from five dimensions: curriculum system reconstruction, teaching mode innovation, practice platform construction, faculty team building, and evaluation system reform. It provides a reference for the teaching reform of finance majors in applied undergraduate universities and colleges, and helps cultivate high-quality applied financial talents that meet the needs of the industry.

Keywords: Applied undergraduate colleges and universities; Curriculum development; Digital economy; Finance; First-class courses.

1. Introduction

The deep integration of the digital economy with financial business models has reshaped the development landscape of the financial industry and raised new demands for the digital literacy and comprehensive practical abilities of financial talents. Application-oriented undergraduate universities bear the important mission of cultivating grassroots financial application-oriented talents. However, current financial courses generally face issues such as outdated content, insufficient digital resources, and an imperfect practical system. The cultivation of talents is disconnected from market demand, making it difficult to adapt to the development needs of the digital economy. Combining the digital economy's development trend, this paper analyzes the changes of talent demand in the financial industry. Meanwhile the existing problems in course construction are sorted out and the optimization path for the first-class financial courses' construction is explored, so as to provide a reference for the finance major teaching reform and the talent quality's improvement in universities.

2. Impact of the Digital Economy on the Development of the Financial Industry and Talent Demand

2.1. The Digital Economy Drives the Digital Transformation of the Financial Industry

Traditional offline branch services have transitioned to online, mobile, and intelligent services. Thus financial service channels and scenarios are reshaping. Digital services such as intelligent investment advisor and digital RMB are becoming widespread. Thanks to this, the constraints of time and space in financial services have been broken through. Big data analysis technology enables precise customer profiling, enhancing service efficiency and customer experience.

The efficiency of financial services is enhanced by digital technology, meanwhile new financial risks such as data

security risks, algorithmic risks and cross-market risks have also popped out. Traditional manual review and post-event disposal is used in financial risk management and control. However nowadays real-time monitoring with big data, AI intelligent early warning and blockchain traceability have been widespread. The core competitiveness of financial institutions has converted to risk control capability.

The threshold for entry into the financial industry has been lowered by digital technology, which allows Internet companies and fintech firms to implement cross-border entry into the financial sector. Therefore competition and integration coexist. The number of traditional branches and the scale of funds is no longer in a prominent position, while digital technology capabilities, data resource reserves, and innovative service capabilities have become the key factors for winning in competition.

2.2. New Characteristics of Financial Talent Demand in the Digital Economy

In the digital economy, both traditional financial theory and digital technology knowledge is needed for financial talents. They are also required to be familiar with cutting-edge fields such as fintech and digital finance, and possess the ability to integrate interdisciplinary knowledge.

Theoretical application ability is of little consequence when applying for relevant positions in the financial sector. Instead, digital practical operation and innovation ability have become the new competency requirements. Financial talents should be well equipped with data processing ability, digital practical operation ability, innovative thinking ability, and risk identification ability.

The environment of the financial industry is complex and changeable. To better adapt to it, digital competency, professional ethics competency, and comprehensive competency is of utmost urgency [1].

3. Current Status of Financial Course Construction in Applied Undergraduate Colleges and Universities

3.1. Curriculum System: Traditional Courses Dominate, With A Relatively Low Proportion of Digital Finance Courses

Research indicates that the finance curriculum in undergraduate universities is still dominated by traditional core courses such as Monetary and Banking, Corporate Finance, and Financial Markets; courses related to digital finance, such as Financial Technology, Python in Finance, and Blockchain Finance, are offered in less than 50% of universities; there is a severe lack of cross-disciplinary courses, and the integration of finance with digital technology and computer science remains superficial, without forming a systematic cross-disciplinary curriculum system.[2]

3.2. Teaching Mode: Traditional Classroom Teaching Is Dominant, With Insufficient Application of Digital Teaching Methods

The teaching mode is still dominated by traditional indoctrination-based teaching; the application rate of digital teaching modes such as online and offline blended teaching and virtual simulation experimental teaching is less than 30%; case teaching often adopts traditional financial cases, and cutting-edge digital finance cases are not updated in a timely manner and are rarely applied; project-based teaching is insufficiently carried out, and most are simulation projects, lacking real industry project support.

3.3. Teaching Resources: Shortage of Digital Resources and Delayed Updates

Digital teaching resources are in a state of severe shortage. Firstly, there is a significant amount of dated educational resources in the textbooks. Traditional financial theories occupy a major portion in most existing finance textbooks. Meanwhile textbooks that align with the positioning of application-oriented undergraduate colleges and incorporate cutting-edge industry cases are rare. Secondly, digital resources including virtual simulation experiment resources and practical question banks are limited. Finally, high-quality digital resources are inefficiently circulated and reused, leading to insufficient resource sharing.

3.4. Evaluation System: Emphasis on Theory and Neglect of Practice, Lack of Assessment of Digital Competency

The traditional model of "regular homework + final written exam" is still primarily adopted in the course evaluation system, with the assessment of theoretical knowledge memorization and computational ability highly emphasized in the final written exam. Digital ability assessment is in a serious state of deficiency. Python programming, big data analysis, intelligent investment advisory design and other digital practical abilities are not included in the assessment indicators. There is a lack of process evaluation, including dynamic tracking and evaluation of students' participation in practical projects and innovative practices.

4. Path for Constructing First-Class Courses in Finance at Undergraduate Colleges and Universities Under the Background of Digital Economy

4.1. Reconstruct a Modular and Interdisciplinary Curriculum System

Retain core courses such as "Monetary and Banking", "International Finance", "Investment", "Corporate Finance", "Financial Markets", and "Financial Risk Management", optimize teaching content, remove outdated theories, supplement cases of traditional financial business digital transformation, and strengthen students' theoretical foundation in finance.

Courses such as "Python for Financial Data Analysis", "Fundamentals of Artificial Intelligence (Financial Applications)", "Principles of Blockchain and Financial Applications", and "Cloud Computing and Financial Services" will be added to teach basic knowledge of digital technology and practical financial applications in a hierarchical manner, cultivating students' ability to apply digital tools.

Focusing on the forefront of the industry, offer cross-disciplinary courses such as "Intelligent Investment Advisory and Digital Wealth Management", "Digital Currency and Digital RMB", "Digitalization of Supply Chain Finance", and "Green Finance and Digital Finance Innovation". Flexibly adjust the curriculum settings in combination with regional industry characteristics to cultivate students' composite knowledge structure.

Establish a cutting-edge industry trend tracking mechanism, regularly conduct research on the business development and talent needs of fintech enterprises and digital financial institutions, and promptly update course content; incorporate cutting-edge industry trends such as the digital yuan pilot, new regulations on fintech supervision, new products of intelligent investment advisors, and new technologies of big data risk control into the curriculum; develop school-based characteristic lecture notes and case collections, combining regional financial industry cases to enhance the relevance and practicality of course content [2].

4.2. Innovate Digital and Blended Teaching Models

Relying on digital teaching platforms, build online quality course resources; carry out online preview, knowledge point self-test, case discussion, homework submission, and interactive Q&A, realizing fragmented learning and personalized tutoring.

Offline classes focus on explaining key and difficult knowledge points, conducting in-depth case analysis, providing guidance on practical projects, and facilitating group collaboration and discussion. AI teaching assistants and knowledge graph tools are introduced to assist students in building a complete knowledge system. Flipped classrooms are conducted, guiding students to explain digital finance cases in groups and showcase practical results, thereby enhancing their ability to actively explore and express themselves.

Establish a cutting-edge case library for the digital finance industry, collecting cases such as Ant Huabei ABS, JD.com's digitalization of supply chain finance, and China Merchants

Bank's intelligent investment advisory; adopt a model of "case introduction - problem decomposition - group discussion - results presentation - teacher evaluation" to cultivate students' ability to analyze and solve practical problems.

4.3. Develop Distinctive and Shared Teaching Resources

Relying on the digital teaching platform, develop online quality micro-courses, practical operation videos, knowledge point explanation videos, and case analysis videos. Improve the digital finance industry case library, categorizing and organizing cases by business type, technical field, risk type, and regularly updating it. Additionally, establish practical operation question banks, digital finance theory question banks, and case analysis question banks, with supporting online self-testing and assessment functions to meet students' practice and assessment needs.

Establish a school-enterprise resource sharing platform with cooperative financial institutions and fintech enterprises, where enterprises provide industry cases, practical projects, technical documents, and data resources, while universities provide teaching resources, scientific research achievements, and talent resources, achieving mutual sharing and mutual benefit [3].

4.4. Establish a Diversified and Comprehensive Evaluation System

The evaluation content, indicators, and approaches need to be optimized. The dimension of digital literacy evaluation should be incorporated into the evaluation system. Add evaluation indicators such as digital tool application ability, data security awareness, algorithmic ethics awareness, and digital innovative thinking, which is conducted through practical operation assessment, case analysis, innovative projects and other various methods.

Different types of professional courses implement different types of evaluation methods. Practical assessment is emphasized in digital technology basic courses and digital finance cross-disciplinary courses, utilizing on-site practical operations and presentation. A project defense approach is recommended for project-based teaching courses and practical courses, where students present their project outcomes in groups, and judges ask questions and assign scores on-site.

Students are encouraged to participate in high-level competitions that assess professional practical abilities, such as the National Financial Technology Competition and the Intelligent Investment Advisor Design Competition. Awards can replace the process assessment scores of corresponding

courses, thereby stimulating students' enthusiasm for innovation [4].

5. Conclusion

The business model and talent demand in the financial industry have been profoundly reshaped by the rapid development of the digital economy. In order to adapt to industry transformation, enhance the quality of talent cultivation, and serve regional economic development, it is essential to promote the construction of first-class financial courses in applied undergraduate universities. Among them, cultivating high-quality, application-oriented digital finance talents is the core objective. The four dimensions of reconstructing a modular and interdisciplinary curriculum system, innovating digital blended teaching models, developing distinctive and shared teaching resources, and constructing a diversified and comprehensive evaluation system should be comprehensively implemented simultaneously.

In the context of the digital economy, the construction of first-class financial courses in applied undergraduate universities is a long-term and systematic project. In the future, with the continuous optimization of the construction path and the improvement of the guarantee mechanism, applied undergraduate universities will surely cultivate more high-quality applied talents that meet the needs of the digital finance era, providing strong talent support and intellectual guarantee for the digital transformation of China's financial industry and high-quality economic development.

Acknowledgment

This work was supported in part by a grant from Taishan University's 2024 Teaching Reform Project (16th Batch, JG202427).

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