

Article

Research on the Path of Cross-Border Integration of Enterprise Financial Core Competence and Applied University Curriculum System

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Abstract: With the continuous development of modern information technologies, such as big data analytics and artificial intelligence, enterprises have put forward entirely new requirements for the core competence of financial personnel in the digital economy era. Based on this evolving landscape, this paper focuses on contemporary financial management challenges and the dynamic needs of modern enterprises. Taking the financial management major in applied undergraduate universities as a primary case study, this paper systematically analyzes the existing gap between the traditional curriculum system and the practical requirements of enterprises through an in-depth study of current training programs. The comprehensive study found that the current financial management professional course system and its resulting student ability structure significantly mismatch with enterprise demand in practical scenarios. Key issues identified include lagging curriculum content, a severe disconnect between theoretical teaching and real-world application, and the notable absence of deep industry involvement. Therefore, to address these critical shortcomings, this paper proposes an innovative "three-layer collaboration" integration path model. This comprehensive framework includes reshaping the ability-oriented, digitally embedded curriculum system, constructing a robust collaborative mechanism for school-enterprise co-education, and fundamentally reconstructing the teaching scene while embedding a continuous practice chain. Ultimately, the primary purpose of this paper is to provide a highly actionable reference and strategic blueprint for the comprehensive reform of the curriculum system of financial management in application-oriented undergraduate colleges, ensuring graduates are fully equipped for the modern financial sector.

Keywords: financial management; curriculum reform; digital economy; higher education; industry integration

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1. Research Background

Under the wave of the digital economy, enterprise demand for financial personnel has shifted from traditional financial accounting to strategic support, placing new requirements on the core competencies of financial personnel. However, the financial management major in application-oriented universities faces challenges such as slow course updates, weak practical components, and a disconnect with industry dynamics, resulting in a significant gap between graduates' abilities and enterprise needs. Currently, most financial management programs in applied colleges and universities aim to cultivate talents with solid knowledge in economics, management, finance, and law [1]. Despite multiple revisions to training programs, there remains a challenge in aligning talent cultivation with the core competencies required by enterprise financial personnel, particularly in curriculum system design and specific teaching practices. This paper seeks to explore a suitable path for optimizing the curriculum system of financial management majors in application-oriented undergraduate universities through detailed analysis.

2. The Analysis of the Current Situation

2.1. Analysis of the Current Situation of Enterprise Financial Personnel Demand

With the ongoing and in-depth development of the digital economy, the roles of enterprise financial personnel have evolved from traditional tasks such as accounting, bookkeeping, auditing, and reimbursement to more advanced functions like value management, capital operations, and strategic decision-making support. Concurrently, the demand for financial personnel has undergone significant changes in terms of quantity, structure, and capability dimensions [1]. Based on public data from recruitment platforms, industry research reports, and relevant policy documents, the current demand for enterprise financial personnel exhibits the following characteristics.

2.1.1. The Demand for Basic Accounting Positions Has Decreased

From the specific situation of the past enterprise financial management work, the work content of most financial personnel is mainly basic financial accounting work, only a very small number of financial personnel part-time financial management or full-time financial management work. However, the spread of financial shared services centers and advancements in smart tax software are replacing traditional accounting, tax, and other standardized systemic tasks. Relevant documents also clearly indicate that the functions of accounting are continuously transforming and upgrading from traditional accounting, bookkeeping, verification, and reimbursement to value management, capital operation, and strategic decision-making assistance [2, 3]. Changes in recruitment market trends further validate this shift. Financial job reports released by platforms such as Zhaopin and Jobjob.com in recent years show a year-on-year decline in the recruitment volume for positions like cashier and basic accounting, while demand for roles such as financial analysis, financial BP, and management accounting continues to grow at double-digit rates. Overall, while the market still demonstrates strong demand for financial personnel, the structure of this demand has undergone significant adjustments.

2.1.2. The Ability Demand Has Changed from a Single Accounting Skill to a Composite Ability

Currently, the demand for financial professionals has evolved beyond traditional skills such as bookkeeping, accounting, and reimbursement. Greater emphasis is now placed on competencies like data analysis, the integration of business and finance, strategic support, and proficiency in data analysis tools [4]. Recruitment trends for financial positions in 2024 highlight an increasing focus on data analysis capabilities, particularly for roles such as financial managers and higher-level positions, where industry integration and business insight are highly valued. Additionally, digital skills, including familiarity with ERP systems, BI tools, and PRA technology, are transitioning from being advantageous to becoming essential requirements. Financial directors have noted that professionals with a deep understanding of business finance are significantly more sought after than those solely proficient in accounting standards. Furthermore, enterprises are increasingly identifying cross-department communication, business insight, and strategic thinking as core competencies for key financial roles.

2.1.3. Pay Equal Attention to Professional Qualification and Digital Certification

The title of primary accountant remains the fundamental threshold for entry into the industry [4]. However, high-level positions increasingly require qualifications such as intermediate accountant titles, Certified Public Accountant (CPA) certification, or Certified Management Accountant (CMA) certification. Notably, as smart financial systems continue to advance, certifications in digital skills such as Python programming, SQL database management, and Power BI data analysis are becoming prioritized employment criteria for financial roles, particularly in large and medium-sized enterprises as well as listed companies. This reflects a shift in the evaluation of financial talent from a single focus on professional titles to a dual emphasis on "professional qualifications + digital skills."

2.2. Analysis of the Current Situation of Financial Management Professional Talent Training

To conduct a more in-depth analysis of the current state of applied undergraduate talent training in colleges and universities and its alignment with enterprise talent demands, this paper utilizes text analysis. It selects training schemes for financial management professionals from domestic applied undergraduate institutions over the past three years, focusing on core curricula such as "financial management," "financial analysis," and accounting information systems as analysis samples [5]. The content is analyzed across three dimensions: training objectives, curriculum structure, and practical application.

2.2.1. The Training Objectives Are Seriously Homogeneous and Disconnected from the New Needs of the Industry

Currently, the training objectives for financial management majors in applied universities across China exhibit significant homogeneity, primarily focusing on cultivating applied talents capable of performing accounting and financial management roles within enterprises and public institutions [6]. Only a limited number of universities explicitly emphasize the importance of equipping students with data analysis skills to address the evolving demands of the data economy and intelligent finance. While many institutions are in the process of revising their training programs, the integration of financial digitalization remains insufficiently comprehensive to fully align with the needs of enterprises transitioning towards value-based management.

2.2.2. The Curriculum System Focuses on Accounting Theory, and the Data Analysis Is Weak

An analysis of the curriculum reveals that the current financial management programs in applied colleges and universities exhibit a clear tendency to prioritize traditional accounting over numerical intelligence. Core courses such as accounting principles, intermediate financial accounting, and cost accounting dominate the curriculum structure, occupying a significant proportion of credits. Conversely, courses related to digital intelligence, such as financial big data analysis, Python applications in finance, intelligent finance, and robotic process automation (RPA), are notably underrepresented. Among the institutions studied, only a few have designated financial big data analysis as a mandatory course, while Python and data visualization-related courses are offered in even fewer schools, often relegated to elective status rather than being part of the core curriculum. Further examination of course outlines for subjects like accounting information systems indicates that most institutions continue to focus on traditional accounting software operations, with only a minority incorporating advanced topics such as cloud-based financial systems or business intelligence analysis. This curriculum structure results in students primarily acquiring traditional accounting knowledge, while lacking systematic training in big data analysis, intelligent tool applications, and other competencies increasingly demanded by industries [7]. Consequently, there is a significant disconnect between the curriculum content and the evolving technological and industrial requirements.

2.2.3. Practice Teaching Form a Single, Fusion Education Needs to Be Strengthened

Although the practical component of the training program accounts for a certain number of credits, it primarily emphasizes traditional projects such as manual accounting simulation training and financial software operation. Based on the teaching arrangements, it is evident that school-enterprise cooperation in financial management programs at applied colleges and universities remains superficial, often limited to enterprise visits or guest lectures [8]. Comprehensive practices involving real business scenarios, financial simulations, and enterprise data desensitization analysis are rare. Only a small number of application-oriented universities have established virtual simulation experiment centers for financial shared services or comprehensive training platforms integrating industry and finance. This lack of exposure leaves graduates with insufficient understanding of real-world business operations and limited practical experience in data processing.

In summary, the current financial management training programs in applied colleges and universities are outdated. The curriculum system fails to effectively integrate digital intelligence technologies, and practical teaching remains disconnected from industrial developments [9]. As a result, it is challenging to systematically cultivate new financial professionals who possess business acumen, analytical skills, and decision-making capabilities. This structural mismatch in the supply of trained personnel is a fundamental reason for the gap in meeting enterprise demands.

3. The Analysis of the Gap between the Curriculum System of Applied Financial Management and the Needs of Enterprises

3.1. The Gap of Ability Structure

Currently, there exists a significant gap in the ability structure between the training provided by applied colleges and universities for financial management professionals and the actual needs of enterprises. Graduates majoring in financial management from these institutions often exhibit an oversupply of accounting skills but face a pronounced deficiency in numerical intelligence and analytical capabilities. Enterprises, on the other hand, demonstrate a high demand for professionals skilled in data analysis, followed by expertise in integrating industry and finance, as well as proficiency in utilizing intelligent tools. However, the curriculum systems in colleges and universities allocate minimal coverage to these competencies, often relegating them to elective courses or embedding them in a fragmented manner. These topics are typically introduced in a modular format within elective courses, lacking a cohesive teaching design, which hinders students from developing a comprehensive knowledge framework and practical skill set. In contrast, traditional compliance and accounting skills dominate the curriculum, encompassing a wide range of courses such as accounting principles, intermediate financial accounting, advanced financial accounting, and various manual simulation training sessions. This disproportionate emphasis on traditional accounting skills over analytical and computational abilities results in a mismatch between graduates' skills and the actual requirements of enterprises. Consequently, while a large number of graduates compete for traditional accounting roles, enterprises struggle to address the shortage of talent in areas such as data analysis, industry-finance integration, and the application of intelligent tools.

tools.

3.2. Curriculum Content Gap

Currently, there exists a gap between the training of financial management professionals in application-oriented universities and the practical needs of enterprises. Regarding curriculum content, there is a lack of integration with digital intelligence and limited inclusion of cutting-edge industry developments. Many enterprises have adopted financial sharing systems, RPA, BI, and other digital intelligence tools, yet college courses on accounting information systems remain focused on traditional software operations. Few institutions incorporate cloud finance and big data analysis into their curricula [10]. Additionally, the application of Python in finance-related courses, such as intelligent finance, is minimal. Practical topics like cost data modeling, financial collaboration within supply chain enterprises, and business planning are also underrepresented in course outlines.

3.3. Gap between Practice Scenarios and Industry- Education Integration Mechanism

Currently, a significant gap exists between practical scenarios and the industry-education integration mechanism in the training of financial management professionals at applied universities and the needs of enterprises. Teaching in colleges and universities heavily relies on manual accounting simulations and stand-alone software operations [11]. Only a limited number of institutions have established financial virtual simulation platforms or industry-finance integration training systems. University-enterprise cooperation often remains superficial, limited to enterprise visits or guest lectures.

Students rarely engage with real, desensitized data across the entire chain of purchasing, production, sales, investment, and financing. This lack of exposure hinders the development of industry-linked thinking habits, resulting in graduates who can perform basic entries but struggle with accounting analysis, understand standards but lack business acumen. Additionally, most college training programs are independently designed by academic institutions, with minimal enterprise involvement in curriculum development, teaching material preparation, or talent evaluation.

High-quality industrial resources, such as financial shared service centers and enterprise business finance departments, have not been effectively converted into teaching resources. The talent training supply side lacks continuous calibration signals from the demand side, leading to a self-perpetuating lag in alignment [12]. This disconnect prevents the effective integration of industry needs into academic training, thereby limiting the practical readiness of graduates for the financial management sector.

4. Cross-Border Integration Path Design

4.1. Reshaping the Ability-Oriented Digital Embedded Curriculum System

To address the issue of mismatched ability structures and outdated curriculum content, this paper eliminates disciplinary barriers and constructs a modular curriculum matrix comprising "business core + data technology + industry characteristics." First, the content of accounting is streamlined, with an emphasis on financial analysis, to adjust traditional accounting courses to a reasonable credit range. "Management Accounting" and "Financial Management" are comprehensively upgraded to include wealth integration teaching cases, additional industry fiscal integration projects, rolling budgets, and business analysis. This approach systematically develops business insight and strategic support capabilities. Secondly, "Python Financial Data Analysis" and "Financial Data Visualization" are designated as compulsory courses, while "Database and SQL" and "Foundation of Machine Learning" are introduced to ensure that each student acquires proficiency in at least one data analysis language and visualization tool. This elevates data analysis training from the periphery of elective courses to the core curriculum. Finally, based on the characteristics of the industrial cluster in the region where the college is located, industry-specific finance elective modules such as intelligent manufacturing finance, new retail finance, and pharmaceutical circulation finance are established. Courses such as Supply Chain Cost Management, Value Chain Analysis, and Profit Planning are also introduced to bridge the gap between course content and industrial advancements.

4.2. Build a Collaborative Mechanism of School-Enterprise

co-education and industrial embeddedness

To address the lack of an effective industry-education integration mechanism, it is essential to transition from a single school-led approach to a model involving the active participation of multiple industrial stakeholders. Universities, accounting firms, financial sharing service centers, digital transformation service providers, and regional industry benchmark enterprises should collaboratively establish a digital intelligence financial industry college. This initiative would include a board of directors composed of representatives from both schools and enterprises to jointly review and approve training programs, design curriculum frameworks, set graduation competency standards, and create a sustainable mechanism for aligning supply and demand. Additionally, a dual mentorship system should be implemented, assigning enterprise practice mentors to guide students from their second year onward in practical projects and career development. Professional educators from universities should periodically engage in temporary training within enterprise financial departments, while enterprise technical experts should participate in staged practical teaching within schools [11]. This two-way talent exchange ensures alignment between course content and technological advancements. Furthermore, schools and enterprises should jointly establish a competency certification and evaluation framework, introducing industry-recognized

certifications such as digital management accounting and intelligent finance and taxation skill level certificates. Enterprises should collaborate in developing assessment standards, integrating enterprise evaluations into graduation audits to ensure that training processes closely align with industry requirements.

4.3. Reconstruct the Teaching Scene and Embed It into the Practice Chain

In view of the gap between practical teaching and real business, the teaching scene should be reconstructed to embed the learning process into a complete business chain. Firstly, an enterprise operation virtual simulation training center is established, and a financial business integration simulation platform covering procurement, production, sales, investment, and financing is introduced. The enterprise desensitization data flow enables students to complete comprehensive digital operations such as expense reimbursement, receivables and payables, cost accounting, report generation, and analysis within the campus environment.

Additionally, real post training is conducted by leveraging the sharing center and the accounting agency base, establishing teaching positions in collaboration with the financial sharing service center and the accounting agency industry association. Junior students, under the guidance of tutors, handle real bills, settlements, tax declarations, and other tasks after desensitization, experience large-scale intelligent financial operation environments, and acquire integrated processing skills related to industry, finance, and taxation.

Finally, a field practice project is organized, where senior students form project teams to work in the financial or business departments of cooperative enterprises. These teams focus on practical topics such as cost driver analysis, accounts receivable management optimization, and new product profit prediction.

The on-site practice spans over eight weeks, culminating in the delivery of business analysis reports and improvement plans. The results are jointly evaluated by both the school and the enterprise [7].

5. Conclusions and Suggestions

5.1. Main Conclusions

At present, there are several mismatches between the curriculum system of the financial management major in applied universities and enterprise demand, including an oversupply of accounting-related abilities, insufficient preparation of digitally competent talent, outdated curriculum content, a serious disconnect between teaching and real business in practical settings, and an inadequate level of industry-education integration on the industry side. It is difficult to fundamentally change this situation by simply adding a few tool-oriented courses. Applied universities should reconstruct the talent-training system with the concept of interdisciplinary integration and make coordinated efforts from the three

dimensions of discipline, specialty, and practice scenario to bridge the gap, so as to cultivate a new type of financial management talent with business understanding, analytical competence, and decision-making ability.

5.2. Reform Suggestions

Using the competency map as the basis for target adjustment, universities and enterprises should jointly conduct follow-up competency studies and refine graduation requirements. Teaching content should be reorganized through modular courses, total credits appropriately reduced, and new modules in digital-intelligent finance and industrial finance introduced. A three-stage practice chain should connect teaching scenarios by integrating virtual simulation, workplace training, and field-based practice, while allowing selected real projects to substitute for part of the graduation thesis. The integration of industry and education should be strengthened through institutional arrangements, including jointly established industrial colleges and mechanisms such as dual supervision, collaborative research, and joint evaluation. Effective implementation

also depends on faculty development through enterprise-based training and the recruitment of practice-oriented instructors.

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