Research on New Financial Talent Development Based on 'SECI+ Industry-Education Integration' in the Digital Economy Era

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Abstract: The rapid development of the digital economy has placed new demands on corporate financial management, requiring a significant number of versatile, new financial talents with capabilities in data analysis, risk control, information system application, industry knowledge, and teamwork. To clarify the key dimensions of these capabilities, this study designed valid and reliable scales through a literature review and questionnaire data collection. Based on this foundation, the study applied the SECI theory as a guiding framework to propose strategies for integrating industry and academia for financial talent development. Specific strategies include establishing mixed mentor teams between universities and enterprises to facilitate socialization, externalization, combination, and internalization of knowledge and skills. For example, students can be embedded in companies for experiential learning and faculty can take sabbaticals in industry. This reciprocal exchange will enable the co-creation of curricula, programs, and pathways tailored to emerging financial sector needs. By applying the SECI model, this study provides a reference path for the deep integration of industry and education for developing versatile financial talent in the digital economy.

Keywords: Digital economy, financial talents, SECI theory, industry-education integration

1. Introduction

In the era of the digital economy, enterprise management models and organizational forms are undergoing profound changes, and traditional functional and hierarchical management methods are no longer able to meet the needs of the new situation. At the same time, the application of emerging information technologies has brought unprecedented challenges to enterprise decision-making and risk control. Faced with these dual influences, the requirements for financial management talents in enterprises have undergone new changes. However, for a long time, there has been a clear disconnect between the training of financial talents in China and the actual needs of enterprises, which has become one of the important factors restricting high-quality economic development. How to adapt to the digital economy situation and reconstruct the path of financial talent training is an urgent issue facing both academia and industry. This study aims to use the SECI theory as a guiding framework to achieve a major breakthrough in the training mode of financial talents through in-depth cooperation between universities and enterprises.

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2. New Financial Talent Capability Model

2.1 Variable Selection and Measurement

With the development of the digital economy, the business environment and internal management models of enterprises are undergoing profound changes, placing new demands on the capabilities of financial talents. Through an extensive review of relevant literature and expert discussions, this study identified five key dimensions of new financial talent capabilities: data analysis, risk control, information system application, industry knowledge, and teamwork.

Data analysis capability is a necessary core competency in the digital economy, enabling financial talents to derive insights from large, complex data sets. Risk control and information system application capabilities are crucial for responding to the rapidly changing business environment and leveraging new financial technologies. Industry knowledge and teamwork capabilities are essential for adapting to new organizational models and cross-functional collaboration.

To measure these five dimensions, three reflective items were developed for each variable based on the literature review. The variables were measured on a 5-point Likert scale, with 1 indicating "completely inconsistent" and 5 indicating "completely consistent." The initial scale items were pre-tested and refined to ensure content validity. The final scale design with 15 items total is shown in Table 1. This multidimensional scale provides a validated framework for assessing the capabilities of emerging financial talents in the digital economy based on the key ability areas identified by this study [1]. The scale design is shown in Table 1.

Table 1: Variable Measurement Scales

variable	Measurement item
Data analysis capability	Able to use data analysis tools for data processing; Good at spotting patterns and trends in data; Ability to use data for forecasting and decision support;
Risk control ability	Understand the various risk points of the company's operations; Ability to conduct risk assessment and propose control measures; Be good at using tools for risk monitoring;
Information system application ability	Proficient in ERP, financial system, etc. Can use information system to improve work efficiency; Understanding the impact of emerging information technologies on financial work;
Industry knowledge	Understand the development of the company's industry; Master the industry business model and profit model; Insight into the financial impact of industry trends;
Teamwork ability	Able to communicate effectively with different departments and teams; Listen well and integrate into the team culture; Be able to give full play to the advantages of teamwork;

2.2 Data Collection and Descriptive Statistics

By conducting an online survey, 100 samples were randomly selected, with 48 males and 52 females. The respondents came from various industries, including manufacturing, the internet, and finance. The survey was conducted anonymously, with a response rate of 90%.

Descriptive statistics were applied to the collected sample data, as shown in Figure 1. From Figure 1, it can be seen that the mean values of each variable are approximately between 3.7 and 4, generally close to the midpoint value of 3 on the scale. This indicates that the sample data effectively reflects the assessment of financial professionals regarding their various abilities. The standard deviation ranges from 0.88 to 1.24, suggesting that the sample data distribution is reasonable and suitable for model fitting. The average values for data analysis skills and teamwork abilities are slightly higher than other variables, indicating that these two abilities are widely recognized by the sample [2].

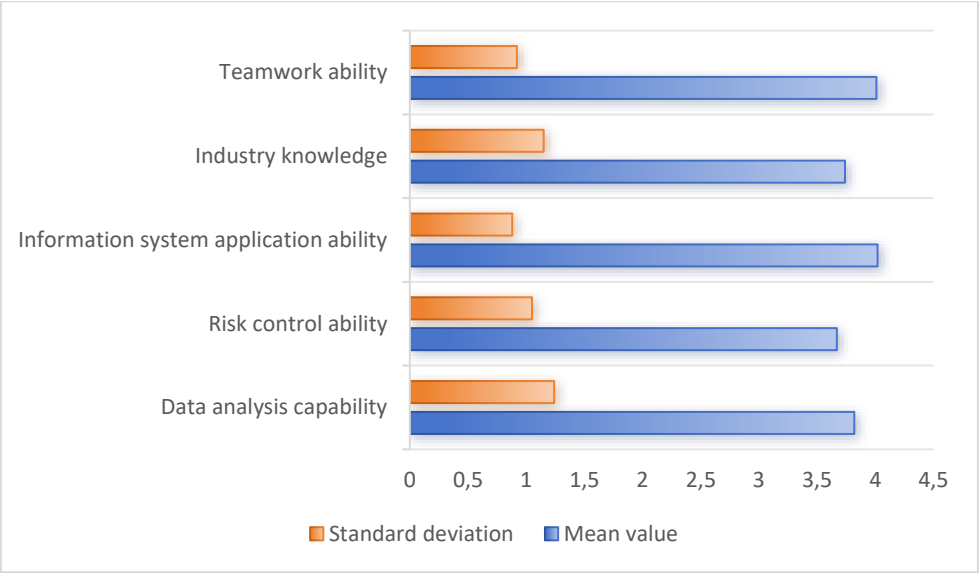

Figure 1: Descriptive Statistics of Variables

2.3 Model Construction and Validation

Based on the theoretical relationships between variables, a structural equation model of the capabilities of new financial talents was constructed using SPSS. The model comprises 5 latent variables and 15 observed variables, with data analysis capability, risk control capability, information system application capability, industry knowledge, and teamwork capability serving as latent variables predicting the capabilities of new financial talents. The model equation is shown in Equation 1:

$$New\ financial\ talent\ ability = a1 \cdot Data\ analysis\ capability + a2 \cdot Risk\ control\ ability + a3 \cdot \text{Information system application ability} + \text{a4} \cdot \text{Industry knowledge} + \text{a5} \cdot \text{Teamwork ability} + \epsilon \quad (1)$$

The model was fitted using the previously collected sample data, and the results showed that $\chi 2/df = 2.34$, RMSEA = 0.079, CFI = 0.91, meeting the criteria for good fit. The fitting results demonstrated that the constructed measurement model effectively reflects the variables influencing the capabilities of new financial talents, laying the foundation for subsequent research [3].

3. Talent Development Path Based On The SECI Theory In Industry-Education Integration

3.1 Introduction to the SECI Theory

In the 1990s, Japanese scholars, including Ikujiro Nonaka, proposed the SECI model when studying organizational knowledge creation. This theoretical framework systematically describes the process of knowledge flow and transformation between individuals and organizations. The SECI model subdivides the process of knowledge transfer into four stages: first, socialization, which involves acquiring tacit knowledge from others through observation and imitation; next is externalization, the conversion of an individual's tacit knowledge into more formal and communicable explicit expressions, such as text or graphics; then comes the combination stage, primarily focusing on the integration, categorization, and dissemination of explicit knowledge; finally, internalization, where individuals convert explicit knowledge back into tacit knowledge through practical experience, forming a deeper understanding and skills. This model not only reveals the cyclic flow of knowledge from tacit to explicit and back to tacit but also provides a powerful theoretical tool for understanding and promoting knowledge creation and accumulation within organizations [4-5].

3.2 Industry-Education Integration Path Guided by the SECI Theory

The SECI theory provides a detailed path for the development of financial talents in industry-education cooperation. First, through the socialization stage, students can immerse themselves in enterprises, engage in on-site internships and practical work, allowing them to directly experience and perceive corporate culture and establish connections with employees, providing them with a direct and authentic learning environment. This interactive learning method helps students gain an intuitive understanding of financial practices. Next, the externalization stage requires students to organize and reflect on their practical experiences, transforming them into transferable and shareable explicit knowledge through reports, presentations, and other forms, deepening their understanding of practical activities. In the combination stage, schools and enterprises jointly participate, forming expert guidance teams to provide systematic guidance and feedback on students' practical activities. This collaboration ensures the professionalism of practical activities while providing students with a broader range of learning resources and perspectives. Finally, in the internalization stage, students integrate the knowledge they have learned with their practical experience in specific projects, internalizing knowledge to make it their own experience and capability. Overall, the SECI theory provides a scientific and step-by-step guidance path for the development of financial talents through industry-education cooperation, ensuring that students establish a solid bridge between theory and practice, laying a solid foundation for their future careers [6-7].

3.3 Implementation Strategies for the Integration Path

The SECI theory emphasizes knowledge transformation in practice and provides strategic guidance for industry-education integration. First, the dual mentor system of universities and enterprises is combined with project-driven teaching to encourage students to apply theory in real work scenarios, ensuring that the learning content remains synchronized with industry

development. Secondly, the establishment of specialized industry-education training bases provides students with practical opportunities to strengthen their practical skills and stimulate innovation. Furthermore, involving teachers and students in actual enterprise projects achieves a deep integration of school education with industry needs, enhancing students' understanding of professional knowledge and ensuring the practical effectiveness of teaching content. Finally, the establishment of a knowledge feedback mechanism monitors and optimizes the teaching process, creating a virtuous cycle of interaction between universities and enterprises, with both education and practice being equally emphasized. This comprehensive and dynamic educational approach significantly enhances the targeting and effectiveness of education, providing students with a learning platform closely linked to actual work and deepening the cooperation between schools and enterprises in talent development [8-9].

4. Conclusion

This study first constructed a scale reflecting the key capabilities of new financial talents through literature research and questionnaire surveys. The data fitting results validated the validity of the constructed scale. Subsequently, the study used the SECI theory as a guiding framework to propose an industry-education integration path for financial talent development, forming a closed-loop guidance for talent development in the socialization, externalization, combination, and internalization stages. Finally, the study provided specific implementation strategies for the integration path, such as the establishment of a dual mentor system between universities and enterprises. The theoretical contribution of this research lies in applying the SECI theory to analyze the financial talent development process, while the practical contribution lies in providing a reference path for industry-education integration talent development. Subsequent research can verify the effectiveness of the constructed path through empirical analysis [10].

References

[1] Zhang Z .Research on talent cultivation of digital media art major based on "integration of production and education" under the background of big data[C]//International Symposium on Artificial Intelligence and its Application on Media.IEEE, 2021.

[2] Mathiasen H , Schrum L .New Technologies, Learning Systems, and Communication: Reducing Complexity in the Educational System[J].Springer New York, 2010.

[3] Wang Y .Research on the Development Model System of "Integration of Industry and Education" in Colleges and Universities Based on Cloud Computing[J].Springer, Cham, 2021.

[4] Kurichev N K , Ptichnikov A V , Shvarts E A ,et al.Nature-Based Offsets in Russia: Key Challenges and Conditions for Success[J].Regional Research of Russia, 2023, 13(4):595-608.

[5] Zhang X .Research on the Development Trend of China's Early Education Industry under the Framework of Supply and Demand Analysis[C]//ICETT 2020: 2020 The 6th International Conference on Education and Training Technologies.2020.

[6] Peacocke, Elizabeth F. , A. Fusheini , and P. Norris . "Community pharmacists' views about prescription medicine co-payments and potential implications for equitable access to medicines: a critical realist interpretation." Journal of Pharmaceutical Policy and Practice 16.1(2023).

[7] Zhichao R D .Research on the International Vision and Ability Training of Enterprise Management Talents[J].Francis Academic Press, 2020(2).
[8] Ye Z , Liu S , Zhang H ,et al.Exploration and Research on the Training Path of Cybersecurity Application-oriented Talents by the Integration of Industry and Education[J].Science Publishing Group, 2020(5).
[9] Holch P , Turner G , Keetharuth A D ,et al.The impact of COVID-19 on PRO development, collection and implementation: views of UK and Ireland professionals[J].Journal of Patient-Reported Outcomes, 2023, 7(1).
[10] Meyer N , Said F B , Alkathiri N A ,et al.A scientometric analysis of entrepreneurial and the digital economy scholarship: state of the art and an agenda for future research[J].Journal of Innovation and Entrepreneurship, 2023, 12(1).