Exploration of a Competency-Oriented Teaching and Training Model for Financial and Accounting Personnel in Small and Medium-Sized Enterprises

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Abstract: *As the development environment for small and medium-sized enterprises becomes increasingly complex, and the functions of financial and accounting personnel expand from traditional accounting to value creation, the structural imbalance between existing teaching and training models and job competency requirements is becoming increasingly prominent. Based on the competency hierarchy theory, this paper systematically deconstructs the competency elements of financial and accounting positions in small and medium-sized enterprises, identifies their dynamic demand characteristics across three dimensions: basic operations, comprehensive analysis, and strategic support, and constructs a competency-oriented teaching and training model. Through modular curriculum design, contextualized teaching resource development, and flexible learning path planning, the model achieves precise alignment between training content and competency objectives; furthermore, it establishes diversified evaluation standards and a contribution analysis mechanism, forming an iterative cycle of the model based on empirical data. Research shows that this model, by strengthening the logical connection between competency structure and training objectives, effectively enhances teaching effectiveness and talent-job fit, providing theoretical basis and methodological support for optimizing the talent cultivation system for financial and accounting personnel in small and medium-sized enterprises.*

Keywords: *small and medium-sized enterprises; financial and accounting personnel; job competency; teaching and training model; competency assessment; modular curriculum*

Introduction

The competency and quality of financial and accounting personnel in small and medium-sized enterprises directly affect the financial stability and decision-making effectiveness of these enterprises. However, existing training systems commonly have issues such as disconnection from practical needs, outdated teaching content, and insufficient personalization, making it difficult for them to adapt to the strategic requirements for financial and accounting functions in the digital economy era. This contradiction stems from a vague understanding of the job competency structure and the lack of a dynamic demand response mechanism, leading to a significant deviation between training objectives and real work scenarios. Exploring a job competency-oriented teaching and training model is not only an inevitable requirement for enhancing the professional competence of financial and accounting talents, but also a key path to promoting the modernization of governance and sustainable development in small and medium-sized enterprises. This study, by clarifying the connotation and evolution patterns of competency elements and constructing a training model with theoretical self-consistency and practical adaptability, aims to provide a systematic solution for resolving the structural contradiction between the supply and demand sides of financial and accounting education.

1. Analysis of Job Competencies and Demand for Financial and Accounting Positions

1.1 Identification of Core Elements in Job Competency Structure

The competency system for financial and accounting positions in small and medium-sized enterprises exhibits significant multidimensional and composite characteristics, and its constituent elements must be deconstructed from a systematic perspective. Based on the competency hierarchy

theory, it can be divided into three interdependent dimensions: basic operational competency, comprehensive analytical competency, and strategic support competency. Basic operational competency forms the technical foundation of financial work, encompassing core skills such as the precise application of accounting standards, tax compliance operations, proficiency in financial software, and cash flow management. This dimension ensures the standardization and accuracy of fundamental financial tasks.

Comprehensive analytical competency is demonstrated through the deep mining of financial data and business insight. It requires financial and accounting personnel to transcend traditional accounting functions, utilize financial analysis methods to reveal the operational essence behind the data, identify efficiency bottlenecks in business processes through cost behavior analysis, and establish correlation models between financial indicators and business drivers. This competency dimension transforms financial and accounting personnel from passive recorders into proactive analysts, providing a basis for decision-making in business management.

Strategic support competency represents the value-creating dimension of financial and accounting functions, encompassing the construction of early warning mechanisms for risks, investment decision evaluation, optimization of resource allocation, and the design of internal control systems. Under the resource constraints typical of small and medium-sized enterprises, this strategic capability holds particular significance for sustainable corporate development. These three competency dimensions form an organic whole: basic operations ensure information reliability, comprehensive analysis uncovers data value, and strategic support enables functional extension. This multi-layered structure provides clear objective guidance for the design of training content[1].

1.2 Dynamic Characteristics of Competency Requirements in Financial and Accounting Practices of Small and Medium-Sized Enterprises

The distinctive nature of competency requirements for financial and accounting functions in small and medium-sized enterprises stems from their unique organizational ecology and operational models. Compared to the standardized division of labor in large enterprises, financial and accounting positions in small and medium-sized enterprises exhibit clear integrated functional characteristics. This requires financial and accounting personnel to possess cross-domain knowledge integration skills, enabling them to collaboratively handle multidimensional tasks such as accounting, tax management, fund operations, and cost control. This integration is reflected not only in the breadth of tasks but also demands the establishment of a systematic financial thinking framework.

From a dynamic evolution perspective, competency requirements follow a phased evolution pattern aligned with the enterprise life cycle. The start-up phase focuses on survival-supporting competencies such as cash flow management and tax compliance; the growth phase emphasizes capabilities in budget control and financing planning; while the maturity phase shifts toward higher-level demands including internal control and strategic decision-making support. This evolutionary path demonstrates that financial and accounting competency requirements are continuously adjusting dynamic variables.

Changes in the external environment further reinforce the dynamic nature of these competencies. Digital transformation generates demand for data analysis capabilities; intensified market competition elevates requirements for risk early warning; and business model innovation continually reshapes the boundaries of financial work. The interaction of internal and external factors shapes the unique landscape of competency requirements for financial and accounting personnel in small and medium-sized enterprises — demanding not only comprehensiveness in foundational skills but also specialization in core areas, while simultaneously maintaining adaptability for future competency expansion.

1.3 Analysis of the Relationship Between Competency Structure and Training Objectives

A rigorous logical transmission mechanism exists between competency structure and training objectives, which requires transformation through a systematic mapping model. Discrete competency elements must be translated into clear learning objectives following the progressive logic of "knowledge-skills-literacy," where professional knowledge forms the cognitive foundation, practical skills reflect application proficiency, and professional literacy determines behavioral standards. These three components collectively constitute the complete expression of training objectives [2].

On the basis of establishing fundamental objectives, it is necessary to consider the adaptation

effects arising from the specific context of small and medium-sized enterprises. This adaptation manifests as differentiated allocation of training priorities and strategic trade-offs in instructional depth. More instructional resources should be allocated to core areas such as cost control and cash flow management; for modules with stronger strategic relevance but weaker immediate demand, an approach focusing on basic concept introduction and mindset cultivation can be adopted, ensuring close alignment between training content and actual needs.

The critical step lies in establishing a feedback mechanism between competency structure and training effectiveness. This process involves setting evaluation criteria for competency achievement, regularly checking the alignment between training content and job requirements, and then calibrating and adjusting the training objectives. This mechanism design ensures that the teaching system possesses self-renewal capability and can respond to the continuous evolution of competency requirements, ultimately forming a complete closed-loop system with job competency as the starting point, training implementation as the intermediary, and performance improvement as the goal. This linkage mechanism provides clear direction and content boundaries for the subsequent teaching model design, and creates the necessary prerequisites for the objective evaluation and continuous improvement of teaching effectiveness.

2. Generation Logic and Design of the Oriented Teaching and Training Model

2.1 Correspondential Design Between the Modular Curriculum System and Competency Objectives

The design of the modular curriculum system must be founded on both job analysis and competency deconstruction in the financial and accounting field. By establishing a mapping matrix between competency elements and instructional content, systematic alignment between training objectives and the teaching process is achieved. In the specific design process, the work process analysis method is employed to deconstruct the tasks of financial and accounting positions layer by layer, identifying core work segments and their corresponding competency requirements, which are then transformed into course modules with clearly defined teaching objectives. Each module encompasses specific knowledge units, skill training items, and key literacy development points, forming a trinity teaching unit of "objective-content-assessment."

The logical relationships between modules follow the inherent principles of financial and accounting work and the sequence of cognitive development. The basic accounting module focuses on developing a deep understanding of accounting standards and accuracy in bookkeeping, establishing a standardized mindset through training in standardized business processes. The tax management module, building on fundamental knowledge of tax laws, emphasizes cultivating compliance awareness and innovative thinking in tax planning. The financial analysis module stresses the synergistic development of data correlation analysis and business insight capabilities. The strategic finance module aims to foster systematic thinking and a forward-looking perspective in risk management. These modules are organically connected through progressive case studies and comprehensive tasks, ensuring continuity and completeness in competency development[3].

The modular system offers advantages in structural flexibility and content scalability. The course modules adopt standardized design specifications, allowing flexible configuration based on enterprise scale, industry characteristics, and development stage. Simultaneously, a dynamic updating mechanism is established, enabling regular review and updates of module content by continuously tracking revisions in accounting standards, technological transformations, and market demand changes. This design philosophy not only ensures close alignment between training programs and job requirements but also constructs an adaptive framework to accommodate future competency demand shifts. During implementation, through pre- and post-test comparisons and effectiveness evaluations, the module content and teaching strategies are continuously optimized, thereby forming a continuous improvement quality assurance mechanism.

2.2 Development of Instructional Activities and Resources Based on Work Contexts

The key to designing instructional activities based on situated cognition theory lies in constructing learning contexts that closely align with real work environments. The instructional activities should comprehensively recreate typical scenarios of financial and accounting work in small and medium-sized enterprises, forming a task sequence that covers the entire workflow—from reviewing source documents to preparing financial statements, and from tax filing to budget management.

Particular emphasis in scenario design is placed on introducing simulations of non-routine transactions and emergency situations, thereby cultivating learners' adaptability and professional judgment in complex contexts.

The development of instructional resources adheres to the principle of integrating authenticity, integrity, and educational value. While preserving the original characteristics of business operations, educational design enhances their instructional value. Source documents are embedded with typical error traps; accounting books and reports retain authentic business logic; tax forms reflect the impact of policy changes; contracts and agreements contain key risk identification points. The task design adopts an end-to-end integrated model, enabling learners to establish a systematic understanding of work processes through complete business operations and comprehend the internal connections and data flows between different stages[4].

The optimization of contextualized teaching effectiveness requires meticulous control over the distribution of cognitive load. By reasonably setting scenario complexity and task difficulty, the balance between intrinsic cognitive load and germane cognitive load is achieved, facilitating the construction of professional schemas and the development of automated processing capabilities. During simulated training, learners handle accounting cases that combine both standard and special transactions, forming hierarchical knowledge representations and conditional skill application patterns. This training approach significantly enhances knowledge transferability and adaptability, establishing a solid foundation for addressing various business scenarios in real work environments. Meanwhile, by providing immediate feedback and process guidance, learners are assisted in timely adjusting their learning strategies and optimizing the formation path of professional skills.

2.3 Flexible Learning Path Planning Adapted to Individual Competency Differences

Flexible learning path planning is established on the foundation of precise competency diagnosis and learning analytics. Through multi-dimensional competency assessment tools, the system identifies individual differences among learners in areas such as knowledge structure, skill level, cognitive style, and motivational characteristics. The assessment results form a dynamically updated learner profile, providing data support for personalized path planning. During the diagnostic process, particular attention is paid to the types of gaps between learners' prior knowledge and target competencies, distinguishing between different situations such as knowledge gaps, skill deficiencies, and literacy shortcomings.

The flexibility in path design is reflected across three dimensions: content selection, pace control, and sequence arrangement. At the content level, targeted combinations of course modules are recommended based on competency gap analysis; at the pace level, differentiated training intensity is set according to individual characteristics of the learning curve; at the sequence level, multiple learning path options aligned with knowledge logic are provided. This multidimensional flexible design ensures learning efficiency while respecting individual cognitive characteristics and developmental needs.

The dynamic optimization of path implementation relies on continuous learning data analysis and a feedback adjustment mechanism. By collecting real-time data on learning processes and outcome outputs, a dual monitoring system is established that tracks both individual learning trajectories and group reference frameworks. When the system detects deviations from expected learning progress, it automatically initiates intervention procedures to provide targeted remedial measures or path adjustment solutions; when learners' performance exceeds expectations, it promptly unlocks advanced content and extension tasks. This data-driven dynamic management mechanism ensures continuous alignment between learning paths and individual developmental needs, achieving optimal allocation of training resources. Simultaneously, by establishing a collaborative mechanism combining learner autonomy and system intelligence recommendations, the approach maximizes the satisfaction of personalized needs while ensuring learning effectiveness, thereby enhancing both the learning experience and training outcomes[5].

3. Mechanism of Model Effectiveness and Continuous Improvement

3.1 Construction of Diversified Evaluation Criteria for Competency Attainment Effectiveness

The evaluation of competency attainment requires establishing a multi-dimensional measurement indicator system. Based on cognitive construct theory and performance assessment theory, this system

forms a three-dimensional evaluation framework covering knowledge, skills, and literacy. In the knowledge dimension, besides standardized testing, concept map analysis technology is introduced to assess the completeness and internalization of the knowledge system by examining the structural characteristics of learners' knowledge networks and the connection density of core concepts. The skills dimension adopts multi-level task design, conducting gradient measurements from basic operational proficiency to complex contextual problem-solving abilities. This incorporates process data analysis methods that objectively reflect the automation level of skill application and cognitive load status by recording operation paths and decision-making time sequences. The literacy dimension combines structured situational simulations with critical incident interviews to capture learners' behavioral choices and value judgments in specific contexts such as ethical dilemmas and time pressure, thereby forming an in-depth portrayal of their professional identity and decision-making logic.

The design of assessment tools adheres to psychometric standards, ensuring validity and reliability while placing particular emphasis on ecological validity and predictive validity. Knowledge testing utilizes computerized adaptive testing technology to achieve personalized item presentation; skill assessment incorporates virtual reality technology to create high-fidelity work scenarios; literacy measurement employs natural language processing technology for semantic analysis of behavioral description texts. This technology-enabled assessment approach not only enhances data collection efficiency but also achieves effective capture of implicit competency elements. The timing of assessments corresponds closely to the developmental stages of competency, and a longitudinal tracking design is employed to construct individual growth models, providing empirical evidence for identifying critical nodes and bottleneck factors in competency development.

3.2 Analysis of Teaching Components' Contribution to Competency Development

The analysis of teaching components' contribution is grounded in the educational production function theory, employing structural equation modeling and multi-level analysis techniques to quantify the marginal effects of various instructional elements on competency formation. Research findings indicate that the content organization approach of modular courses significantly impacts knowledge integration, with problem-oriented module designs proving more conducive to conditional storage and retrieval of knowledge compared to discipline-logic based module designs. In skill training, the timeliness and specificity of feedback are directly related to the automated formation of operational standards, while feedback delays exceeding a specific threshold significantly reduce skill consolidation effects. The promoting effect of situational authenticity on higher-order competency development exhibits an inverted U-shaped curve characteristic, where moderate situational complexity most effectively stimulates learners' cognitive engagement and strategy adjustment[6].

The optimization of instructional sequencing represents a significant finding from the contribution analysis. Introducing strategic thinking training earlier, during the basic skills learning phase, does not directly impact the immediate mastery level of skills but significantly enhances the transfer breadth of comprehensive analytical ability in later stages. The combined effect of different teaching methods far exceeds the simple sum of individual methods; for instance, the alternating use of case-based teaching and role-playing can simultaneously deepen situational awareness and improve the fluency of decision execution. The match between learners' prior knowledge and teaching methods accounts for as much as 30% of the variance in learning outcomes, strongly supporting differentiated instructional strategies based on diagnostic assessments. These findings provide theoretical guidance for constructing a precise teaching intervention system, driving the transformation of teaching models from being experience-driven to evidence-driven.

3.3 Model Iteration and Optimization Cycle Based on Evaluation Evidence

The model iteration mechanism draws from the PDCA cycle in quality management and agile development concepts in software engineering, forming a specific implementation pathway in the educational field. Data-driven decision-making permeates the entire iterative process. By establishing an early warning indicator system for teaching effectiveness, it enables real-time monitoring of trend changes in key parameters, such as group-wide declines in module completion rates or persistent underperformance in specific skill areas. These signals trigger root cause analysis procedures to differentiate among various problem sources, including deficiencies in teaching content, inappropriate teaching methods, or distorted assessment standards. The implementation of optimization measures follows the Minimum Viable Product principle, prioritizing improvement points with low intervention costs and high expected returns, which are first validated through rapid testing before being scaled for

broader application.

The scientific nature of the iteration process is ensured through a triple verification mechanism. At the technical level, A/B testing and multi-armed bandit algorithms are employed to balance the relationship between exploring new solutions and utilizing known effective ones; at the theoretical level, any adjustments are guaranteed to comply with the fundamental principles of cognitive science, avoiding violations of learning laws for the sake of short-term effects; at the practical level, by tracking the long-term effects of optimization measures, their sustained benefits and potential side effects are identified. This rigorous iterative culture keeps the teaching and training model in a state of dynamic optimization, enabling it to promptly respond to external environmental changes while accumulating organizational memory for continuous improvement, ultimately forming an intelligent teaching system with learning capabilities. By continuously absorbing empirical teaching data and theoretical advancements, the system gradually enhances the foresight and precision of its self-improvement, achieving a spiral rise in training quality and efficiency.

Conclusion

The job competency-oriented teaching and training model for financial and accounting personnel in small and medium-sized enterprises constructed in this study achieves effective coordination between training supply and job requirements through competency structure analysis, modular curriculum design, contextualized teaching implementation, and a closed-loop evaluation mechanism. This model emphasizes the dynamic mapping relationship between competency elements and teaching objectives, highlights personalized learning paths and evidence-driven iterative optimization, providing an operational methodological framework for financial and accounting education and training. Future research could further explore the deep application of artificial intelligence technology in competency diagnosis and adaptive path adjustment, strengthen comparative studies of competency models across cultural contexts, and extend the discussion to the correlation between lifelong learning systems for financial and accounting personnel and organizational innovation capabilities, thereby continuously enriching the theoretical connotation and practical extension of this field.

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