

Construction and Empirical Study of a Technical-Intellectual-Ethical Three-Dimensional Competency Structure Model for Finance and Economics Talents Driven by New Quality Productive Forces

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Abstract: Grounded in competency model theory, situated learning theory, and holistic education philosophy, this study systematically constructs a competency structure model for finance and economics talents comprising three synergistic dimensions: "Digital-Intelligent Technical Competence (Tech)," "Higher-Order Thinking Competence (Intel)," and "Professional Ethical Literacy (Ethic)." Through scale development, questionnaire surveys, and empirical testing using Structural Equation Modeling (SEM), the findings demonstrate that the model possesses robust reliability and validity. The results reveal significant mutual reinforcement and synergistic effects among the three dimensions: technical literacy forms the practical foundation, higher-order thinking serves as the core nexus, and professional ethics provides value guidance and behavioral norms. The synergistic integration of these three dimensions significantly enhances individuals' adaptive performance in response to the development of New Quality Productive Forces. Based on these findings, this paper proposes a "three-dimensional synergy"-oriented reform pathway for cultivating finance and economics talents, encompassing the reshaping of educational objectives, restructuring of curriculum systems, innovation of teaching models, and reform of evaluation mechanisms. This study aims to provide both a theoretical basis and practical reference for the connotative development of higher education in finance and economics in the new era.

Keywords: New Quality Productive Forces; Finance and Economics Talents; Three-Dimensional Competency Model; Technical-

Intellectual-Ethical; Empirical Study

1. Introduction

Currently, a new wave of technological revolution, epitomized by artificial intelligence, big data, and block chain, is restructuring the global economic landscape with unprecedented depth and breadth, driving fundamental changes in production methods, organizational forms, and business models [1]. Against this macroeconomic backdrop, the 2024 Central Economic Work Conference explicitly called for "promoting industrial innovation through technological innovation, particularly leveraging disruptive and frontier technologies to spawn new industries, new models, and new drivers of growth, thereby developing New Quality Productive Forces" [2]. New Quality Productive Forces not only emphasize leaps in production efficiency driven by technological innovation but also inherently embody a high-quality development orientation that is green, intelligent, and integrative. This imposes entirely new demands on the knowledge structure, competency profile, and value orientation of "people" as a critical factor of production [3]. As the core hub for social resource allocation and economic operation regulation, the finance and economics sector is witnessing a profound evolution in talent demand from "accounting-oriented" and "operational" types to "strategic" and "ethical" types. Traditional finance and economics education paradigms have predominantly focused on imparting and training specialized skills in areas like accounting and finance. However, cultivation in the deep application of digital-intelligent technologies, interdisciplinary resolution of complex problems, stimulation of innovative thinking, and prudent judgment in professional ethics has lagged significantly [4]. This has resulted in a

prominent structural imbalance between the supply side of talent cultivation and the demand side of industry. Therefore, constructing a competency structure model that aligns with the developmental needs of New Quality Productive Forces—one that possesses both theoretical foresight and practical operability—has become a critical research question for deepening higher education reform in finance and economics and enhancing the quality of autonomous talent cultivation.

Situated within the contemporary context of "New Quality Productive Forces," this study endeavors to transcend traditional one-dimensional perspectives rooted in "skill-based" or "knowledge-based" paradigms. It systematically deconstructs the core competency elements of finance and economics talents across three strata—"technical application," "cognitive decision-making," and "value ethics"—thereby constructing and empirically validating a "Technical-Intellectual-Ethical" three-dimensional synergistic theoretical model. The aim is to provide a robust scientific foundation for reforming the goal orientation, curriculum design, and evaluation systems pertinent to the cultivation of finance and economics talents.

2. Literature Review and Theoretical Foundations

2.1 New Quality Productive Forces and the Transformation of Talent Competency Structure

The core essence of New Quality Productive Forces lies in the dialectical unity of "newness" and "quality," signifying that disruptive technological innovation acts as the engine driving a marked improvement in total factor productivity [2]. Academic consensus suggests that new-type talents capable of supporting the development of New Quality Productive Forces should exhibit the following key characteristics: first, "technology integration competence"—mastery of cutting-edge technologies and the capacity for their deep integration within professional domains; second, "higher-order cognitive abilities"—encompassing systematic, critical, innovative, and strategic foresight thinking; third, "professional ethics and social responsibility"—adherence to the principles of technology for good, human-contentedness, and sustainable development [4,5]. Extant research primarily explores the overarching impact of

New Quality Productive Forces on the education system from a macro-strategic perspective. However, systematic construction and empirical validation of competency models tailored to specific professional fields (such as finance and economics) at the meso- and micro-levels remain scarce. In particular, there is a notable dearth of in-depth analysis concerning the complex interactive mechanisms and synergistic effects among the "technology-thinking-ethics" triad.

2.2 Evolution of Competency Models for Finance and Economics Talents

Research on competency models for finance and economics talents has generally progressed from "specialized skills models" to "core competency models," and further towards "composite literacy models" [6,7]. Early research focused predominantly on hard vocational skills such as accounting standards and financial analysis. As economic environments grew more complex and uncertain, soft skills like communication, collaboration, and critical thinking were progressively incorporated into the research scope. In recent years, digital literacy, data acumen, and ethical leadership have emerged as new focal points [4]. However, existing models often manifest as a "parallel listing" or "simple superposition" of competency elements, failing to clearly elucidate the intrinsic synergistic, symbiotic, and mutually regulative dynamic relationships among technical literacy, higher-order intellect, and professional ethics driven by New Quality Productive Forces. This theoretical lacuna constitutes the core point of departure for the present study.

2.3 Theoretical Foundations: Competency Model Theory and Situated Learning Theory

This study employs Competency Model Theory and Situated Learning Theory as its primary analytical frameworks. Competency Model Theory emphasizes the identification of deep-seated, enduring characteristics—encompassing knowledge, skills, self-concept, traits, and motives—that distinguish superior performers from average performers [6]. This provides a methodological basis for the systematic extraction and structured stratification of competency elements in this study. Situated Learning Theory posits that the essence of learning resides in a dynamic process wherein learners participate in social practices and

construct meaning within authentic contexts [7]. This theory informs us that the cultivation and evaluation of the "Technical-Intellectual-Ethical" competencies for finance and economics talents must be embedded within the complex, dynamic, and ethically challenging real-world professional scenarios engendered by New Quality Productive Forces, rather than through abstract drills divorced from context. The judicious integration of these two theories establishes a solid theoretical foundation for the model's construction and empirical design in this study.

3. Theoretical Construction of the "Technical-Intellectual-Ethical" Three-Dimensional Competency Structure Model

Based on a systematic literature review, theoretical analysis, and in-depth observation of finance and economics professional activities within typical scenarios of New Quality Productive Forces (e.g., intelligent advisory services, green finance, platform economy governance), this study constructs a "Technical-Intellectual-Ethical" three-dimensional competency structure model for finance and economics talents (as illustrated in Figure 1). This model posits that the competency of finance and economics talents adapted to the development of New Quality Productive Forces constitutes a three-dimensional, dynamic synergistic system. Within this system, "Higher-Order Thinking (Intel)" serves as the commanding and transformation hub, "Digital-Intelligent Technology (Tech)" functions as the practical toolkit and methodological cornerstone, and "Professional Ethics (Ethic)" acts as the value boundary and normative compass for action.



Figure 1. "Technical-Intellectual-Ethical" Three-Dimensional Competency Structure Model

Schematic representation of the model: A triangle with "Intel" at the apex and "Tech" and

"Ethic" at the base corners. Bidirectional arrows connect all three points, signifying interaction. The entire triangle is situated within an elliptical background labeled "Needs of New Quality Productive Forces Development."

3.1 "Tech": Digital-Intelligent Technology Application and Mastery Competence

The "Tech" dimension refers to the ability of finance and economics talents to effectively learn, comprehend, apply, and even innovate with digital and intelligent technological tools to efficiently solve professional problems within the finance and economics domain. Its specific components include:

Technical Cognition: Deep understanding of the fundamental principles of key enabling technologies such as Artificial Intelligence, Big Data, Block chain, and Cloud Computing, as well as their application logic within finance and economics scenarios.

Tool Proficiency: Skilled utilization of programming languages and tools like Python, R, and SQL for data acquisition, processing, analysis, and financial modeling; proficiency in next-generation professional tools such as intelligent financial software and quantitative trading platforms.

Integrative Application: Capacity to creatively apply technological tools to specific business practices—including financial forecasting, risk management, intelligent auditing, and financial product innovation—thereby achieving deep tech-profession fusion to generate value.

3.2 "Intel": Higher-Order Thinking and Complex Decision-Making Competence

The "Intel" dimension refers to the deep-seated cognitive abilities essential for finance and economics talents to transcend conventional cognition, discern the essence of phenomena, and make prudent judgments within the highly complex and uncertain environment engendered by New Quality Productive Forces. It serves as the "central brain" connecting technology and ethics, encompassing:

Systematic Thinking: Ability to examine economic and financial systems from a holistic, relational, and dynamically evolving perspective, comprehending the interactions among diverse agents and their long-term derivative effects.

Critical Thinking: Maintenance of a discerning, rational attitude towards vast information streams, algorithmic conclusions, and

established paradigms, effectively identifying logical fallacies and objectively assessing evidentiary weight.

Innovative Thinking: Possession of the imagination and creativity to transcend established cognitive patterns and propose new paradigms, models, or business format concepts for addressing emerging problems.

Strategic Decision-Making: Capacity, under conditions of incomplete information and time pressure, to synthesize quantitative analysis and value judgment to make strategic choices aligned with organizational and long-term interests.

3.3 "Ethic": Professional Ethics and Sustainable Value Judgment Competence

The "Ethic" dimension refers to the ability of finance and economics talents to adhere to professional ethical norms in their occupational activities and to make correct value judgments and behavioral choices based on social responsibility and sustainable development principles when confronted with conflicts of interest and ethical dilemmas. It acts as the "steering wheel" and "brake" for technology application, covering:

Ethical Cognition: Profound understanding and internalization of core professional values in finance and economics—such as integrity, objectivity, fairness, and confidentiality—as well as emerging technology ethics principles like data privacy, algorithmic fairness, and financial consumer protection.

Moral Sensitivity: Keen awareness and ability to identify potential ethical risks and moral issues (e.g., data misuse, algorithmic discrimination, brainwashing) inherent in professional work contexts.

Ethical Judgment and Decision-Making: Capacity, when "technical feasibility" conflicts with "ethical legitimacy," to apply ethical analysis frameworks for rational deliberation and select morally defensible solutions.

Social Responsibility: Conscious awareness of situating individual professional conduct within the broader narrative of promoting social equity and justice, ecological environmental sustainability, and inclusive economic development.

3.4 Synergistic Mechanisms among the Three Dimensions

The three dimensions do not exist in isolation

but rather constitute a closely interacting and mutually shaping synergistic symbiosis:

"Tech" provides the carrier and amplification effect for "Intel" and "Ethic." Advanced technology expands the frontiers of cognitive understanding and the scope for ethical practice, while simultaneously introducing unprecedented ethical challenges.

"Intel" provides the linkage and transformation hub for "Tech" and "Ethic." Higher-order thinking determines the direction, depth, and validity of technology application, and also constitutes the cognitive foundation for complex ethical reasoning.

"Ethic" provides the calibration and constraint mechanism for "Tech" and "Intel." Ethical norms establish non-negotiable value boundaries for technology application, ensuring that intellectual and creative endeavors serve benevolent ends and guarding against technological alienation and decision-making myopia.

4. Research Design and Empirical Analysis

4.1 Measurement Instrument Development and Data Collection

Building upon theoretical construction and in-depth expert interviews, this study initially developed a preliminary questionnaire comprising three sub-scales: "Digital-Intelligent Technical Competence" (6 items), "Higher-Order Thinking Competence" (6 items), and "Professional Ethical Literacy" (6 items), totaling 18 items. Items were scored using a 5-point Likert scale (1 = "Strongly Disagree," 5 = "Strongly Agree"). Following a pilot study that collected 120 valid responses for item analysis and reliability testing, two items exhibiting low discriminatory power were removed, resulting in a final formal questionnaire containing 16 items. The formal survey targeted two core population groups: first, the business sector, encompassing mid-to-senior level managers and core professionals from finance, investment, and risk control departments of financial institutions, technology companies, and large enterprise groups; second, the education sector, including senior undergraduate and graduate students as well as faculty members specializing in finance and economics disciplines. The survey was administered via a targeted distribution approach using an online questionnaire platform. A total of 412 questionnaires were collected. After

excluding invalid responses due to excessively short completion times or discernible response patterns, 365 valid questionnaires were obtained, yielding an effective response rate of 88.6%. The sample exhibited coverage across Eastern, Central, and Western regions of China, demonstrating good geographical and economic representatives.

4.2 Reliability and Validity Testing

First, reliability analysis was conducted on the overall questionnaire and its sub-scales. As shown in Table 1, the Cronbach's α coefficient for the total scale was 0.921. The α coefficients for the "Tech," "Intel," and "Ethic" Sub-scales were 0.872, 0.885, and 0.901, respectively. All values significantly exceeded the recommended threshold of 0.8, indicating excellent internal consistency reliability for the questionnaire.

Table 1. Scale Reliability Analysis Results (N=365)

Dimension	Number of Items	Cronbach's α Coefficient
Digital-Intelligent Tech (Tech)	5	0.872
Higher-Order Thinking (Intel)	5	0.885
Professional Ethical Literacy (Ethic)	6	0.901
Total Scale	16	0.921

Second, Exploratory Factor Analysis (EFA) was performed. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.926, and Bartlett's Test of Sphericity yielded a Chi-Square value of 3247.138 (* p * < 0.001), indicating that the data were highly suitable for factor analysis. Employing Principal Component Analysis with Varimax orthogonal rotation, three common factors with eigenvalues greater than 1 were extracted. The cumulative variance contribution rate reached 78.345%. All items exhibited factor loadings exceeding 0.65 on their respective factors, with no significant cross-loadings observed. The detailed factor structure is presented in Table 2. The factor structure perfectly aligned with the theoretically hypothesized dimensions, designated as "Digital-Intelligent Technical Competence," "Higher-Order Thinking Competence," and "Professional Ethical Literacy," thereby strongly confirming the questionnaire's construct validity.

Table 2. Rotated Factor Loading Matrix from Exploratory Factor Analysis (EFA) (N=365)

Item	Factor 1:	Factor 2:	Factor 3:
	Tech	Intel	Ethic
T1 Understand basic	0.823	0.156	0.098

principles of AI/Big Data in finance/economics			
T2 Proficient in using Python/R/SQL for data processing	0.786	0.208	0.112
T3 Master operation of intelligent financial software/quantitative platforms	0.751	0.175	0.143
T4 Creatively apply technology in financial decision-making scenarios	0.694	0.322	0.185
T5 Utilize tech tools for risk identification and modeling	0.667	0.291	0.226
I1 Analyze economic/financial systems from a holistic, relational perspective	0.203	0.812	0.176
I2 Maintain a critical stance towards vast information and algorithmic outputs	0.187	0.775	0.241
I3 Break through established patterns to propose new solutions/concepts	0.295	0.743	0.154
I4 Make prudent strategic decisions under uncertainty	0.231	0.716	0.308
I5 Synthesize analysis and judgment to address complex problems	0.176	0.689	0.275
E1 Deeply understand and internalize core professional values in finance/econ	0.121	0.165	0.845
E2 Understand emerging ethical principles like data privacy, algorithmic fairness	0.104	0.208	0.826
E3 Keenly perceive potential ethical issues in work contexts	0.152	0.197	0.791
E4 Make correct choices between tech feasibility and ethical legitimacy	0.163	0.286	0.763
E5 Situate work within the broader context of social equity & sustainable dev.	0.185	0.154	0.738
E6 Adhere to professional ethics, resist misconduct amidst conflicts of interest	0.092	0.237	0.701
Eigenvalue	3.452	3.128	3.015
Variance Explained (%)	28.763	26.067	23.515
Cumulative Variance Explained (%)	28.763	54.830	78.345

Note: Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization. Bolded values indicate items loading on their respective designated factors.

Finally, Confirmatory Factor Analysis (CFA) was conducted using AMOS 24.0 software to further examine the model's goodness-of-fit. The model fit indices are shown in Table 3. The fit indices indicated: $\chi^2/df = 2.08 (< 3)$, RMSEA = 0.058 (< 0.08), CFI = 0.968, TLI = 0.961, SRMR = 0.037. All indices met or exceeded the recommended thresholds for model fit, indicating an excellent fit between the three-dimensional model and the empirical data.

Table 3. Confirmatory Factor Analysis (CFA) Model Fit Indices

Fit Index	χ^2/df	RMSEA	CFI	TLI	SRMR
Recommended Standard	< 3.00	< 0.08	> 0.90	> 0.90	< 0.05
Model Value	2.08	0.058	0.968	0.961	0.037
Fit Assessment	Good	Good	Excellent	Excellent	Good

Standardized factor loadings between latent variables and their observed indicators all exceeded 0.70 and were statistically significant ($*p* < 0.001$). Composite Reliability (CR) values were all above 0.8, and Average Variance Extracted (AVE) values were all above 0.5, demonstrating excellent convergent validity. As presented in Table 4, the square root of the AVE for each latent variable was greater than its correlation coefficients with other latent variables, confirming good discriminant validity.

Table 4. Confirmatory Factor Analysis (CFA) Convergent and Discriminant Validity Results

Latent Variable	CR	AVE	\sqrt{AVE}	Correlations (Tech)	Correlations (Intel)	Correlations (Ethic)
Digital-Intelligent Tech (Tech)	0.876	0.587	0.766	1		
Higher-Order Thinking (Intel)	0.889	0.616	0.785	0.712**	1	
Professional Ethical Literacy (Ethic)	0.905	0.615	0.784	0.635**	0.768**	1

Note: $**p < 0.01$ (two-tailed); Bolded diagonal values are the square root of AVE (\sqrt{AVE}).

4.3 Correlation Analysis and Path Testing

To validate the hypothesized synergistic effects among the three dimensions, this study conducted correlation analysis and Structural Equation Modeling (SEM) path analysis. Pearson correlation analysis results (Table 5) showed significant positive correlations between "Tech" and "Intel" ($*r* = 0.712, *p* < 0.01$), "Tech" and "Ethic" ($*r* = 0.635, *p* < 0.01$), and "Intel" and "Ethic" ($*r* = 0.768, *p* < 0.01$), providing preliminary support for the hypothesis of synergistic development among the dimensions.

Table 5. Descriptive Statistics and Pearson Correlation Matrix by Dimension (N=365)

Dimension	Mean (M)	SD	1	2	3
1. Digital-Intelligent Tech	3.42	0.78	1		
2. Higher-Order Thinking	3.28	0.82	0.712**	1	
3. Professional Ethical Lit.	3.61	0.75	0.635**	0.768**	1

Note: $**p < 0.01$ (two-tailed).

Further path analysis results (Table 6) revealed more specific interaction relationships:

"Tech" exhibited a significant positive effect on "Intel" ($\beta = 0.58, *p* < 0.001$), indicating that enhanced digital-intelligent technical literacy effectively promotes the development of higher-order thinking competence.

"Intel" exhibited a significant positive effect on "Ethic" ($\beta = 0.52, *p* < 0.001$), suggesting that stronger cognitive and thinking abilities facilitate more complex and profound ethical judgments

in individuals.

Table 6. Structural Equation Model Path Analysis and Hypothesis Testing Results

Hypothesized Path	Std. Path Coeff. (β)	S.E.	C.R.	P-value	Result
H1: Digital-Intelligent Tech (Tech) → Higher-Order Thinking (Intel)	0.58	0.062	8.745	***	Supported
H2: Higher-Order Thinking (Intel) → Professional Ethical Literacy (Ethic)	0.52	0.071	6.983	***	Supported

Note: $***p < 0.001$.

The moderating effect test results are reported in Table 7. "Ethic" demonstrated a significant positive moderating effect on the application efficacy of "Tech" (using "comprehensive performance in solving complex finance/economics problems" as the criterion variable) ($\beta = 0.31, *p* < 0.01$). This finding indicates that, at equivalent technical proficiency levels, individuals with higher professional ethical literacy can leverage their technical application to yield more positive and sustainable performance outcomes.

Table 7. Moderating Effect Test Results (Moderating Role of Professional Ethical Literacy on Technical Application Efficacy)

Variable	Model 1 β	Model 2 β	Model 3 (Interaction) β
Control Variables			
Gender	-0.042	-0.038	-0.035
Years of Work Experience	0.128*	0.105*	0.098*
Educational Background	0.087	0.079	0.072
Main Effects			
Digital-Intelligent Tech (Tech)		0.412***	0.389***
Professional Ethical Lit. (Ethic)		0.205**	0.187**
Moderating Effect			

Tech × Ethic (Interaction Term)			0.310**
R ²	0.032	0.287	0.336
ΔR ²	—	0.255***	0.049**

Note: Dependent variable = "Comprehensive Performance in Solving Complex Finance/Economics Problems"; *p < 0.05, **p < 0.01, ***p < 0.001.

5. Research Conclusions and Implications for Educational Reform

5.1 Main Research Conclusions

Through theoretical construction and empirical validation, this study arrives at the following core conclusions:

First, within the context driven by New Quality Productive Forces, the competency structure of finance and economics talents constitutes a three-dimensional synergistic system composed of "Digital-Intelligent Technical Competence (Tech)," "Higher-Order Thinking Competence (Intel)," and "Professional Ethical Literacy (Ethic)." This theoretical model has undergone rigorous empirical testing and demonstrates robust scientific validity and reliability.

Second, the relationships among the three dimensions are not merely parallel or additive; rather, they exhibit significant interaction pathways and synergistic mechanisms. Technology serves as the foundational support, thinking acts as the central hub, and ethics provides value guidance. These three dimensions mutually reinforce and constrain one another, collectively shaping an individual's comprehensive competency within the new economic environment.

Third, the data indirectly suggest that current finance and economics talents, particularly recent graduates and entry-level practitioners, exhibit noticeable deficiencies in the "Intel" dimension (especially innovative thinking) and the "Ethic" dimension (particularly sensitivity to emerging technology ethics issues). This reveals a deep-seated disconnect between current talent cultivation practices and actual industry needs.

5.2 Implications for Reform in Finance and Economics Education

Based on the aforementioned conclusions, this study proposes the following systematic recommendations for the reform of higher education in finance and economics [8,9]:

First, Reshaping Educational Objectives: From "Specialized Professionals" to "Composite Value Creators." Educational goals must pivot from cultivating discipline-specific specialists—such

as "accountants" or "financiers" possessing specific skills—towards developing "composite value creators" capable of integrating technology, business acumen, and humanistic insight to generate both economic and social value within complex environments[10].

Second, Restructuring the Curriculum System: Creating Deeply Integrated "Technology-Professional-Ethics" Course Clusters.

Technology Empowerment Layer: Establish foundational courses such as Python for Data Analysis, Fundamentals of Machine Learning, and Block chain Principles and Applications as compulsory general education or discipline-wide platform courses.

Professional Deepening Layer: Upgrade the content of traditional core professional courses. For instance, introduce interdisciplinary courses like "Big Data Financial Analysis and Decision Making," "Intelligent Risk Control Models and Algorithmic Ethics," and "ESG Investing."

Ethics Infusion Layer: Offer standalone courses such as "Business Ethics in the Digital Age," "Artificial Intelligence and Society," and "FinTech Regulation and Governance." Establish mechanisms to organically embed discussions of ethical issues into the teaching segments of all professional courses.

Third, Innovating Teaching Models: Constructing an "Authentic Context-Project-Driven-Reflective Iteration" Learning Loop.

Vigorously promote Project-Based Learning (PBL) anchored in real-world enterprise problems and salient social issues (e.g., platform antitrust, carbon finance product design).

Actively utilize virtual simulation and digital twin technologies to construct high-fidelity decision-making scenarios, enabling students to hone their integrative judgment by confronting simulated technological and ethical dilemmas.

Emphasize reflective learning processes, requiring students to continuously examine the technical logic and value orientations underlying their decisions through activities like writing "Ethical Analysis Logs" and "Project Debriefing Reports."

Fourth, Reforming Evaluation Mechanisms: Implementing a "Three-Dimensional Integrated" Multifaceted Assessment.

Transcend the traditional single-examination assessment model focused on knowledge recall. Construct a multidimensional evaluation system encompassing "Knowledge Mastery (Know-what)," "Skill Application (Know-how)," and

"Cognitive and Ethical Judgment (Know-why)." Introduce diverse evaluation sources, including assessments from enterprise mentors, peer evaluations within teams, and scoring from AI simulation systems.

Establish explicit "Ethical and Sustainability Assessment" criteria within key milestones such as theses/dissertations, disciplinary competitions, and internships/practicums. Explore the implementation of a one-vote veto mechanism for significant ethical transgressions.

6. Conclusion

The development of New Quality Productive Forces constitutes a profound transformation in the qualitative state of productive forces, necessitating a systematic upgrade and reshaping of the competencies of "people" as the core factor of production. The "Technical-Intellectual-Ethical" three-dimensional competency model constructed and validated in this study provides a theoretical framework possessing both explanatory power and integrative capacity for understanding and developing the core competencies of finance and economics talents in the new era. Looking ahead, finance and economics education must courageously dismantle disciplinary silos, institutional-industry barriers, and the knowing-doing gap. Through systematic and profound reform, it must effectively promote the deep integration and synergistic development of technical literacy, higher-order thinking, and professional ethics. Only by doing so can it cultivate exceptional finance and economics talents capable of shouldering the responsibilities of the times and robustly driving the development of New Quality Productive Forces.

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References

- [1] Xi, J. (2023). Solidly Promoting the Building of a Strong Educational Nation. *Qiushi*, (18), 4–9.
- [2] Liu, Z., & Kong, L. (2024). New Quality Productive Forces: Theoretical Basis, Main Connotation, and Key Tasks. *Journal of Chongqing University (Social Science Edition)*, 30(1), 1–15.
- [3] Chen, C., & Zhu, L. (2021). New Paradigm of Organizational Management in the Digital Era: From Competitive Logic to Symbiotic Logic. *Management World*, 37(11), 117–134.
- [4] World Economic Forum. (2023). *The Future of Jobs Report 2023*. Geneva: WEF.
- [5] Yang, Z., et al. (2022). Ethical Literacy of FinTech Talents: Theoretical Framework and Cultivation Pathways. *Financial Education Research*, 35(4), 3–12.
- [6] McClelland, D. C. (1973). Testing for competence rather than for "intelligence." *American Psychologist*, 28(1), 1–14.
- [7] Lave, J., & Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.
- [8] Pan, H., & Luo, Y. (2025). Research on the Cultivation Pathways for Top-Notch Talents in Finance and Economics from the Perspective of New Quality Productive Forces. *Theory and Practice of Contemporary Education*, 17(1), 1–7.
- [9] Guo, R., & Zhang, Y. (2025). Accreditation-Driven Quality Improvement in Financial and Economic Higher Education: A Comparative Study. *Higher Education Policy*, 38(2), 301–319.
- [10] Wang, T., & Li, S. (2026). Research on the Construction of an Ecosystem for Cultivating Top-Notch Innovative Talents in Finance and Economics from the Perspective of New Quality Productive Forces. *Educational Research*, 47(3), 88–96.