

Research on Cultivating New-Quality Talents in Equipment Manufacturing Major of Higher Vocational Colleges by Digital Intelligence Empowered Industry-Education Consortium

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Abstract

Based on the Marxist theory of productive forces, this paper analyzes the internal mechanism of cultivating new-quality talents—defined in this study as professionals who possess advanced digital literacy, cross-disciplinary innovation capabilities, and complex problem-solving competencies required by the digital-intelligent transformation of the equipment manufacturing industry—through the integration of industry and education empowered by digital intelligence. The innovation of digital and intelligent means of labor inevitably requires new-quality talents, as core workers, to reshape their capabilities. The alliance promotes the dialectical unity of the three elements of productive forces through technological empowerment, mechanism integration, and capability reshaping. In response to the current predicaments such as the failure of factor synergy, the lag in the supply of means of labor, the weakness of the “double-qualified” teacher team, and the lag in evaluation, this paper proposes a four-in-one practical approach of “mechanism innovation—resource optimization—teacher team building—teaching reform”, providing a systematic solution for vocational education to empower new productive forces.

Keywords

Digital Intelligence Empowerment, Industry-Education Consortium, New-Type Talents, Equipment Manufacturing, Vocational Education

1. Introduction

As an evolutionary leap of advanced productive forces, new quality productive forces are essentially driven by scientific and technological innovation to achieve

a fundamental breakthrough in traditional growth paths, presenting distinct characteristics of high technology, high efficiency, and high quality (Huang & Sheng, 2024). Under the backdrop of the equipment manufacturing industry's accelerated transformation towards intelligent manufacturing, the leap in productive forces is primarily transmitted to the core element, the "laborers." Traditional single-skilled personnel can no longer adapt to the demands of digital-intelligent industries, creating an urgent need for a transition toward "new-quality talents" equipped with high-order data literacy, innovative capabilities, and complex problem-solving skills. In this study, the term "new-quality talents" refers specifically to professionals who combine advanced digital literacy, cross-disciplinary innovation capabilities, and complex problem-solving competencies demanded by the digital-intelligent transformation of equipment manufacturing. This concept is distinguished from traditional skilled workers by its emphasis on the integration of digital technology application, data-driven decision-making, and adaptive learning capacity within authentic production contexts. The term is used consistently throughout this paper to replace earlier interchangeable expressions such as "new-type talents" and "new quality laborers," thereby maintaining terminological precision. As the main incubator for talent, higher vocational colleges must profoundly respond to this imperative for competence structure reshaping triggered by the transformation of productive forces.

The integration of industry and education serves as the ontological logic of vocational education and a critical pathway to reshape the talent cultivation paradigm (Wei & Shao, 2025). However, constrained by institutional barriers, traditional models frequently fall into the practical predicament of "enthusiasm from schools but apathy from enterprises" alongside resource misallocation. Digital-intelligent empowerment, through the deep embedding of next-generation information technologies, has substantively catalyzed a profound transformation in the elements of productive forces. On the one hand, as novel "instruments of labor," digital-intelligent technologies have expanded the hardware and software scaffolding of the consortium by leveraging the Industrial Internet and digital twin platforms. On the other hand, the production tasks of equipment manufacturing, acting as the "objects of labor," are transitioning from singular physical materials into digital elements characterized by the "integration of virtuality and reality." Digital-intelligent empowerment not only drives the deep nesting of the education chain, industry chain, and innovation chain but also facilitates the precise iteration of the entire talent cultivation process (Li & Chen, 2023).

Based on the aforementioned context, this study focuses on the internal mechanism of cultivating new-quality talents through digital-intelligent empowered industry-education consortiums. Drawing upon the dialectical logic of "laborers-instruments of labor—objects of labor" within the Marxist theory of productive forces, this research aims to elucidate the following proposition: the innovation of digital-intelligent instruments of labor inevitably necessitates the reshaping of competencies among new-quality talents, who serve as the laborers; concurrently,

the industry-education consortium acts as the fundamental mechanism to dismantle institutional barriers and foster the dialectical unity of the three productive force elements within authentic production contexts. By dissecting its operating mechanism, practical dilemmas, and implementation pathways, this study endeavors to provide systematic theoretical scaffolding for vocational education in serving the development of new quality productive forces.

Research Methodology

This study adopts a qualitative, theory-driven analytical approach grounded in the Marxist theory of productive forces. The research framework—comprising operating mechanisms, practical dilemmas, and practical pathways—was developed through the following steps. First, an extensive literature review was conducted, drawing on peer-reviewed articles, government policy documents, and industry reports published between 2020 and 2025, primarily sourced from CNKI, Web of Science, and official policy databases of China’s Ministry of Education. The search employed keyword combinations including “industry-education integration,” “digital intelligence,” “vocational education,” “equipment manufacturing,” and “new-quality productive forces.” Second, relevant national and provincial policy texts on vocational education reform and industry-education consortium construction were systematically analyzed to identify institutional facilitators and barriers. Third, institutional case evidence was drawn primarily from the publicly reported practices of Geely University and supplementary data from national survey reports on higher vocational colleges. Geely University was selected as a focal case because it has implemented a comprehensive industry-education consortium model involving multiple modern industrial colleges and a “dual-dean system,” making it one of the most documented and policy-cited cases in recent Chinese vocational education literature. However, as discussed in Section 3.3 and Section 5.1, this single-case reliance constitutes a limitation. The quantitative figures cited in this paper are drawn from published surveys and institutional reports, and source context is noted where applicable. This methodology is primarily conceptual and analytical rather than empirical; consequently, the findings should be interpreted as a theoretical framework illustrated by representative cases and secondary data, rather than as the outcome of a controlled comparative study.

2. The Operating Mechanism of Digital-Intelligent Empowered Industry-Education Consortia in Cultivating New-Quality Talents

The core mechanism of a digital-intelligent empowered industry-education consortium is essentially a process that facilitates the dialectical unity of novel digital-intelligent “instruments of labor,” “objects of labor” characterized by the integration of virtuality and reality, and the core “laborers” (new-quality talents). Relying on the closed-loop system of “data-driven-subject collaboration-ecosystem optimization,” its operating mechanism is manifested in the logical progression across

the following three dimensions:

2.1. Technological Empowerment: Innovating Instruments of Labor and Expanding Objects of Labor

As novel “instruments of labor,” digital-intelligent technologies have fundamentally reconstructed the talent cultivation system. First, Industrial Internet platforms precisely collect industrial data and construct demand forecasting models, enabling the consortium to dynamically optimize its schemes and avoid a disconnect between specialty settings and industrial demands (Zhou, 2023). By developing teaching cases based on authentic enterprise operation data, cutting-edge industrial challenges are directly transformed into authentic “objects of labor.” Second, technologies such as digital twins facilitate the expansion of “objects of labor” toward the integration of virtuality and reality. Students utilize novel instruments of labor like VR/AR to conduct machine tool operations and debugging in virtual environments. According to Yang et al. (Yang et al., 2025), a controlled experiment conducted at a higher vocational college in Hunan Province involving mechatronics students demonstrated that this approach boosts the mastery efficiency of core skills by over 30% and reduces operational error rates by 45% compared with the traditional physical-equipment-only training group. Finally, cloud computing constructs a cross-regional shared digital foundation, effectively bridging the shortfall of digital instruments of labor for vocational colleges in central and western regions.

2.2. Mechanism Integration: Creating a Governance Space for the Synergy of Productive Force Elements

The industry-education consortium is essentially a collaborative governance community that optimizes the allocation of productive force elements. On the one hand, the decentralized nature of blockchain constructs a trusted contract mechanism. As regulatory instruments of labor, smart contracts automatically execute resource inputs and revenue distribution, effectively reducing transaction costs (Yan & Wang, 2024). Based on this, the School of Industrial Internet at Geely University has constructed a traceability system to precisely allocate revenues and stimulate the endogenous driving force of bidirectional cooperation (Geely University of China, 2025). On the other hand, relying on cloud computing and the Internet of Things (IoT), an integrated data-sharing platform is established to facilitate the synergistic docking of government policies, authentic enterprise post demands (objects of labor), and scientific research in colleges, thereby achieving resource complementarity (Li & Chen, 2025). The seamless switching to online practical training demonstrated by this mechanism during unexpected events corroborates its high agile responsiveness.

2.3. Competence Reshaping: Reshaping the Core Literacies of New-Quality Talents

The innovation of digital-intelligent instruments of labor inevitably requires new-

quality talents, acting as laborers, to undergo competence reshaping. Concurrently, the industry-education consortium serves as the fundamental mechanism to break down traditional educational barriers and facilitate the dialectical unity of these three elements within authentic production/teaching scenarios. In the dimension of digital literacy cultivation, micro-majors such as “AI + Equipment Manufacturing” introduce authentic industrial projects (objects of labor), reconstructing students’ practical operation and R&D capabilities regarding digital-intelligent production tools (Zhu et al., 2024). As reported in the publicly available institutional data of Geely University (Geely University of China, 2025), eight modern industrial colleges co-constructed by the institution have cumulatively cultivated over 2800 graduates equipped with new-quality productive capacities, achieving a targeted employment rate exceeding 85%. These figures are drawn from institutional self-reporting and have not been independently verified through external evaluation. Furthermore, blockchain micro-credentials provide rights confirmation for laborers’ skills. After completing the deconstruction of high-order objects of labor, such as intelligent production line design, students obtain trusted certifications, bridging the data closed loop of “learning—certification—employment,” and thereby substantively enhancing the targeted relevance of talent cultivation (Wen, 2022).

The Geely University case is employed as the primary institutional illustration throughout this paper for the following reasons. First, Geely University represents one of the most comprehensive implementations of the industry-education consortium model in China, having co-constructed eight modern industrial colleges with enterprises spanning the automotive, intelligent manufacturing, and digital economy sectors. Second, its adoption of the “dual-dean system”—in which both an academic dean and an enterprise dean jointly manage each industrial college—provides a concrete governance innovation that directly reflects the theoretical framework of this study. Third, Geely University’s practices have been extensively cited in national policy discussions and peer-reviewed literature, making it one of the most well-documented cases for secondary analysis. However, it is important to acknowledge the limitations of relying on a single case. Geely University is located in the economically developed eastern region of China and benefits from substantial corporate investment by the Geely Group, conditions that are not easily replicable by institutions in central and western regions or by colleges without strong corporate partners. Furthermore, the data cited from Geely University are drawn from institutional self-reports, and independent verification or comparative data from peer institutions are not available. Future research should incorporate multi-case and multi-regional designs to enhance the external validity of the findings presented here.

3. Practical Dilemmas

Essentially, the innovation of digital-intelligent instruments of labor inevitably requires new-quality talents, acting as laborers, to undergo competence reshaping.

Concurrently, the industry-education consortium serves as the fundamental mechanism to break down traditional educational barriers and facilitate the dialectical unity of these three elements within authentic production and teaching scenarios. However, an examination of current talent cultivation practices in the equipment manufacturing category reveals that the operation of this mechanism remains constrained by multiple structural bottlenecks, such as the synergistic failure of productive force elements, which urgently require systematic resolution.

3.1. Imperfect Institutional Mechanisms and Insufficient Synergy Efficacy of Elements

Currently, industry-education consortiums have yet to establish a long-term governance mechanism for productive force elements, leading to a situation of “formal integration without substantive synergy.” First, the boundaries of power and responsibility among subjects are blurred. Under the inertia of government dominance, enterprise participation largely stems from policy pressure rather than endogenous drive. Consequently, according to a survey by [You et al. \(2024\)](#) covering vocational education institutions across multiple Chinese provinces, only 30% of enterprises are deeply involved in formulating cultivation programs for new quality laborers, mostly confined to large state-owned enterprises, while small and medium-sized enterprises (SMEs) exhibit extremely low participation due to resource constraints. Second, cross-departmental barriers are prominent. The fragmentation of policies among education, industry and information technology, and human resources and social security departments results in a disconnect between skill standards and authentic post demands. Third, there is an absence of benefit distribution mechanisms. The unclear rules regarding the conversion revenue of instruments of labor, such as technology and data resources between schools and enterprises, substantively impede the efficient flow of innovative elements within the consortium.

3.2. Lagging Supply of Novel Instruments of Labor and Structural Mismatch between Supply and Demand

The scaled supply of digital-intelligent instruments of labor presents significant regional and inter-school divides. Based on a nationwide survey of higher vocational colleges reported by [Zhou \(2023\)](#), as of the end of 2024, only 40% of higher vocational colleges nationwide had established industrial-grade digital twin platforms. Constrained by funding, colleges in central and western regions universally face outdated equipment and computing power bottlenecks, making it difficult to support the deconstruction of high-order objects of labor, such as complex engineering drills ([Zhou, 2023](#)). Furthermore, the lack of data circulation mechanisms induces “information silos”: the parameters of simulation models developed by colleges severely deviate from authentic enterprise production lines (objects of labor). Although most colleges in the eastern region possess basic instruments of labor like gigabit networks, some colleges in the central and western regions have

yet to cross the basic threshold of information-based teaching.

3.3. Weak Faculty Capability in Mastering Novel Instruments of Labor and Prominent Structural Shortages

As the crucial hub guiding the reshaping of new-quality talents, teachers' lagging digital literacy constitutes a core constraint. According to Yan and Wang (Yan & Wang, 2024), who analyzed national-level statistical data on higher vocational faculty composition, only 25% of specialized teachers in higher vocational colleges nationwide can proficiently master novel instruments of labor such as the Industrial Internet, and "dual-qualified" teachers with over three years of authentic enterprise production experience account for less than 15%. Existing faculty training heavily favors theoretical indoctrination and lacks authentic project experience with new intelligent processes (new objects of labor), causing the teaching supply to be severely detached from the industrial frontier. Geely University has mitigated this shortcoming to some extent by bringing enterprises into education through the "dual-dean system," but the large-scale replication of this model remains constrained by the willingness boundaries of deep enterprise participation (Geely University of China, 2025).

3.4. Lagging Course Evaluation Relative to the Expansion of Objects of Labor and Low Recognition of Competence Credentialing

The current curriculum system significantly lags in reflecting the novel objects of labor characterized by virtual-real integration. In terms of course content, as reported by Liu, Zhang, and Liu (Liu, Zhang, & Liu, 2025) based on a review of curriculum structures in equipment manufacturing programs at higher vocational colleges in China, most colleges still rely on traditional mechanical manufacturing modules for teaching, with courses related to new quality production, such as intelligent manufacturing and green manufacturing, generally accounting for less than 20%. Regarding evaluation orientation, the inherent logic of prioritizing theory over practice and identification over innovation has not been fundamentally reversed, and current assessment methods struggle to precisely measure the core literacies of new-quality talents. At the level of competence credentialing, novel digital certification tools like micro-credentials generally face low recognition from enterprises due to the lack of unified industry definitions and normative standards. Consequently, the employment channels for the orderly flow of new-quality talents into the real economy remain inadequately bridged (Li & Chen, 2023).

4. Practical Pathways

In response to the aforementioned dilemmas, there is an urgent need to systematically construct a four-in-one practical system centered on "mechanism innovation, resource optimization, faculty building, and teaching reform." From the per-

spective of the internal logic of productive force elements, the profound transformation of digital-intelligent instruments of labor inevitably compels new-quality talents, acting as laborers, to achieve a holistic reshaping of their competence structures. Concurrently, the industry-education consortium serves as the fundamental institutional vehicle to dismantle traditional educational barriers and promote the dialectical unity of the three productive force elements—laborers, instruments of labor, and objects of labor—within authentic production and teaching contexts.

To strengthen the coherence between the Marxist productive forces framework and the four proposed pathways, the following mapping clarifies the theoretical correspondence. First, “mechanism innovation” (Section 4.1) primarily addresses the institutional conditions governing the relations among all three elements—laborers, instruments of labor, and objects of labor—by constructing governance structures that enable their synergistic interaction within the consortium. Second, “resource optimization” (Section 4.2) directly targets the balanced supply and upgrading of instruments of labor (e.g., digital twin platforms, cloud computing infrastructure) and objects of labor (e.g., virtual-real integrated training projects derived from authentic production lines). Third, “faculty building” (Section 4.3) focuses on the laborers dimension, specifically on enhancing teachers’ capacity as the guiding agents who mediate between instruments of labor and the competence development of new-quality talents. Fourth, “teaching reform” (Section 4.4) centers on the credentialing and evaluation of laborers (new-quality talents), while simultaneously ensuring that the curriculum content accurately reflects the evolving objects of labor in the digital-intelligent manufacturing landscape. This four-pathway structure thus constitutes a systematic intervention across all three productive force elements, rather than an ad hoc set of recommendations.

4.1. Strengthening Mechanism Innovation: Constructing an Institutional Space for the Synergy of Productive Force Elements

Strengthen innovation fundamentally through mechanisms. First, perfect the top-level design. On the basis of clarifying the boundaries of power and responsibility among the government, industries, enterprises, and schools, the government should specify the revenue distribution rules for novel instruments of labor and incorporate the performance of enterprises in collaborative education into the credit evaluation system, thereby reinforcing the participation responsibilities of multiple subjects through institutional constraints. Second, innovate incentive mechanisms. Fully utilize policy tools such as tax deductions and specific subsidies to activate the endogenous drive of small and medium-sized enterprises (SMEs) to share authentic objects of labor and production equipment, thus resolving the practical dilemma of insufficient enterprise participation enthusiasm. Third, advance regional pilots. Relying on advanced manufacturing agglomeration areas such as the Yangtze River Delta, establish special zones for industry-

education integration. Actively explore cross-regional element circulation mechanisms and diversified collaborative governance paradigms, such as the “dual-dean system” at Geely University, to accumulate practical experience for broader institutional promotion.

4.2. Optimizing Infrastructure and Resource Allocation: Balancing the Supply of Novel Instruments of Labor and Objects of Labor

Promote the construction of a balanced and interconnected digital educational resource ecosystem. First, coordinate and integrate ministerial resources to build a national-level cloud service platform for industry-education integration, providing full-process element circulation support for all links of the education chain and industry chain. Second, guided by special funds, drive various colleges to systematically complete the large-scale deployment of novel instruments of labor, such as gigabit campus networks and intelligent practical training nodes, to consolidate the infrastructure foundation for digital teaching. Third, collaborate with leading industry enterprises and rely on authentic production lines, such as new energy battery assembly, to dynamically develop digital twin practical training projects, achieving the precise, cutting-edge, and continuous supply of virtual-real integrated objects of labor.

4.3. Building a “Dual-Qualified” Faculty: Strengthening the Core Hub for Guiding New Quality Laborers

Advance the systematic and holistic upgrade of faculty elements. First, implement a teacher digital literacy enhancement program, establishing the duration of practical experience in authentic enterprise production as a rigid assessment indicator and incorporating it into the core evaluation dimensions for professional title assessment and appointment. This institutional orientation drives the proactive iteration of teachers’ competence structures. Second, promote a “dual-post and dual-salary” mechanism to guide industry mentors toward deep participation in teaching, clarifying their pedagogical responsibilities in deconstructing complex objects of labor and realizing the substantive implementation of bringing enterprises into education. Finally, co-construct school-enterprise technology R&D centers to establish an effective channel for transforming scientific research achievements into teaching cases, systematically enhancing the comprehensive efficacy of the faculty in mastering novel instruments of labor.

4.4. Reconstructing the Curriculum and Evaluation System: Precisely Anchoring the Competence Credentialing of New Quality Laborers

Construct a teaching environment highly adaptable to the development needs of new quality productive forces. Regarding curriculum structure, implement a modular matrix design of “core courses + micro-majors,” introduce cutting-edge micro-major directions such as industrial big data analysis, and involve enterprise

experts in the whole-process review of course content to ensure its cutting-edge nature and industrial adaptability. Regarding the evaluation mechanism, introduce the concept of competence-based evaluation, utilizing multi-dimensional assessments to precisely profile the digital literacy and innovative capabilities of new-quality talents, thereby driving the transition of assessment methods from result-oriented identification to process-oriented diagnosis. Regarding the credentialing system, further perfect the construction of the micro-credential system, and actively promote the development of national certification standards and the formation of cross-enterprise certification alliances in the equipment manufacturing field, fundamentally enhancing the industry credibility and social recognition of skills credentialing for new-quality talents.

Guided by the logical main thread of “digital-intelligent technology driving—deep industry-education integration-cultivation of new-quality talents,” this study systematically constructs a “three-in-one” research framework encompassing the operating mechanism, practical dilemmas, and practical pathways. The specific framework structure is illustrated in **Figure 1**.

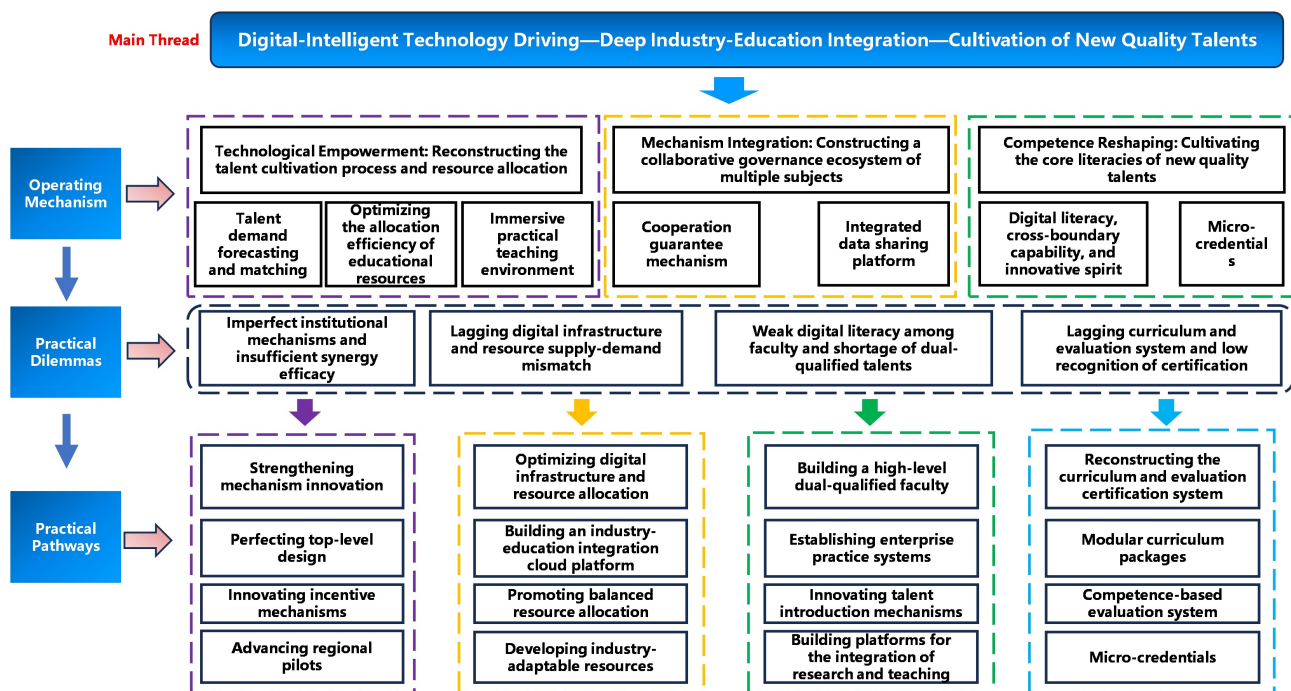


Figure 1. Research framework structure diagram.

5. Limitations

Several limitations of this study should be acknowledged. First, this paper is primarily conceptual and analytical in nature. The mechanism-dilemma-pathway framework is constructed through theoretical reasoning and secondary data analysis rather than through primary empirical investigation such as surveys, interviews, or controlled experiments. Consequently, the proposed pathways, while theoretically grounded, have not been empirically tested for effectiveness. Second,

the quantitative figures cited throughout the paper (e.g., the 30% enterprise participation rate, the 40% digital twin platform adoption rate, and the 25% faculty digital competency rate) are drawn from published surveys and institutional reports with varying scopes, methodologies, and sample characteristics. These figures are employed as illustrative indicators of systemic trends rather than as precise benchmarks, and readers should exercise caution when interpreting them outside their original research contexts. Third, the reliance on Geely University as the primary institutional case limits the generalizability of the findings. While Geely University offers a rich and well-documented example, it operates under conditions—substantial corporate backing, eastern coastal location, and strong policy support—that are not representative of the majority of higher vocational colleges in China, particularly those in underdeveloped regions. Fourth, the Marxist productive forces framework, while providing a coherent analytical lens, is one of several possible theoretical perspectives. Alternative frameworks, such as institutional theory, innovation systems theory, or human capital theory, might yield complementary or divergent insights that are beyond the scope of this study. Future research should address these limitations through multi-case comparative designs, primary data collection, and empirical validation of the proposed pathways.

6. Conclusion and Prospects

The digital-intelligent empowered industry-education consortium is a strategic choice for vocational education to proactively respond to the leap in new quality productive forces. By reconstructing the instruments of labor and expanding the objects of labor, this mechanism subsequently accomplishes the reshaping of laborers' core literacies, fundamentally resolving the deep-seated contradictions of traditional industry-education synergy. Faced with existing pain points such as element synergy barriers, the unbalanced distribution of novel instruments of labor, and a lagging evaluation system, a comprehensive breakthrough can only be achieved by relying on the four-dimensional synergy of “mechanism-resource-faculty-teaching.”

Future research can be deepened in three directions: First, focusing on the differences in regional element endowments to develop differentiated governance strategies for the eastern, central, and western regions. Second, strengthening empirical quantification to construct a digital-intelligent evaluation indicator system for the synergy of industry-education elements. Finally, examining technological ethics and data circulation security to fortify the fundamental baseline of digital education equity. Consequently, this will enable vocational education to genuinely empower the upgrading of the equipment manufacturing industry, providing solid laborer support for the incubation of new quality productive forces.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- Geely University of China (2025). Deepening the Fertile Ground of Industry-Education Integration and Building a New Ecosystem for Cultivating Application-Oriented Talents. *China Youth Daily*. (In Chinese)
https://zqb.cyol.com/pad/content/202511/13/content_418620.html
- Huang, Q. H., & Sheng, F. F. (2024). New Quality Productive Forces System: Factor Characteristics, Structural Carriers, and Functional Orientations. *Reform*, No. 2, 15-24. (In Chinese)
- Li, M. Q., & Chen, S. Y. (2023). The Construction Mechanism, Action Logic, and Practical Path of Municipal Industry-Education Consortia in China. *Modern Education Management*, No. 12, 83-90. (In Chinese)
- Li, Z. H., & Chen, Y. (2025). How Can Municipal Industry-Education Consortia Achieve Resilient Development from the Perspective of the SCGP Framework: A Case Analysis Based on Domestic and International Experiences. *Research in Educational Development*, No. 1, 49-58. (In Chinese)
- Liu, H. S., Zhang, H., & Liu, T. T. (2025). Innovative Teaching Practice of Courses in Intelligent Manufacturing Equipment Technology Majors in Higher Vocational Colleges Empowered by Digital Technology. *China Machinery*, No. 25, 173-176. (In Chinese)
- Wei, J., & Shao, W. (2025). System Logic and Pathways for Reconstructing Industry-Education Integration. *China University Students Career Guide*, No. 11, 26-33. (In Chinese)
- Wen, F. A. (2022). Digital Village Construction: Importance, Practical Dilemmas, and Governance Paths. *Guizhou Social Sciences*, No. 4, 147-153. (In Chinese)
- Yan, Z. L., & Wang, S. H. (2024). Vocational Education Empowering New Quality Productive Forces: Factor Allocation and Action Logic. *Chinese Vocational and Technical Education*, No. 7, 3-10. (In Chinese)
- Yang, J. F., Zhang, Y. M., Wang, C. Y., & Yu, J. (2025). Exploration and Practice of Practical Training Teaching for Mechatronics Majors in Higher Vocational Education Based on Digital Twins and VR. *Laboratory Research and Exploration*, 44, 184-188. (In Chinese)
- You, S., Hu, X., Zhang, Y., Yi, J., & Peng, D. (2024). Why Is There a Lack of Motivation for Enterprises' Participation in Industry-Education Integration in Vocational Education? Analysis of the Teachers' Enterprise Practice Policy Dilemma. *World Education Forum*, 2, 56-58.
- Zhou, Y. J. (2023). Research on Promoting the Construction of Municipal Industry-Education Consortia through Collaboration among Government, Schools, and Enterprises. *Education and Vocation*, No. 18, 64-69. (In Chinese)
- Zhu, Z. T., Dai, L., Zhao, X. W., & Shen, S. S. (2024). Cultivating New-Quality Talents: A New Mission of Education in the Digital-Intelligence Era. *E-Education Research*, No. 1, 52-60. (In Chinese)