

Research on the Construction Path of Modern Vocational Education System from the Perspective of New Quality Productivity

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Abstract: The core of new-type productive forces lies in technological innovation and innovative allocation of production factors, characterized by three key attributes: high technology, high efficiency, and high quality. These elements will fundamentally reshape societal expectations for the knowledge, skills, and competencies of technical professionals. The modern vocational education system currently faces new challenges, including misalignment between traditional academic structures and emerging industry demands, disconnect between talent cultivation models and innovative practice requirements, as well as inadequacies in governance systems and cross-sector integration trends. To address these challenges posed by new-type productive forces, it is imperative to systematically reconstruct the modern vocational education framework. This requires establishing a philosophy that unifies the development of new-type productive forces with the comprehensive development of individuals; building a modernized system with vertical integration and horizontal connectivity; promoting digital and green upgrades in academic programs and dynamic curriculum iterations; deepening industry-education integration and science-education convergence based on real-world industrial scenarios; and developing a "dual-qualified" faculty team while optimizing governance ecosystems. These efforts aim to achieve systematic and holistic restructuring across conceptual frameworks, institutional systems, substantive content, operational models, and support mechanisms.

Keywords: new quality productivity; vocational education system; industry-education integration; talent cultivation

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The concept of new-type productive forces has not only charted the course for technological innovation and industrial upgrading, but also created pressing demands for systemic transformation in vocational education systems tasked with supplying skilled professionals. Confronted with emerging industries, business models, and operational paradigms catalyzed by these forces, alongside rapid shifts in occupational structures and accelerated skill updates, the current vocational education framework exhibits notable deficiencies in adaptability, foresight, and impact. Therefore, systematically restructuring modern vocational education systems to transition from merely adapting to industrial upgrades to actively driving the development of new-type productive forces represents a critical theoretical and practical challenge that demands immediate resolution.

1.The Connotation of New Productivity and Its Structural Influence on the Demand for Talents

New quality productivity is not merely a single technological breakthrough, but an advanced state of productivity catalyzed by revolutionary technological advancements, innovative allocation of production factors, and profound industrial transformation. Its core drivers are disruptive and frontier technologies — such as artificial intelligence, quantum information, and genetic engineering — emerging in clusters and deeply integrating. This integration drives systematic reorganization and efficiency leaps in traditional production factors like labor, capital, land, knowledge, technology, management, and data. The process propels industrial structures toward higher-end, intelligent, and green development, giving rise to numerous knowledge-and technology-intensive emerging and future industries.

The development of new productive forces has fundamentally reshaped the demand for technical and skilled professionals, manifesting in four key aspects. First, knowledge structure diversification. Workers now need interdisciplinary integration capabilities. For instance, smart manufacturing scenarios require employees to master

mechanical principles, information technology, data analysis, and production management simultaneously. Second, advanced competency dimensions. As repetitive tasks are increasingly replaced by automated and intelligent equipment, demands for critical thinking, complex problem-solving skills, digital literacy, innovation capabilities, and sustainable learning abilities have reached unprecedented levels. "Digital craftsmen" and "green craftsmen" have become essential. Third, comprehensive quality requirements. Soft skills like professional resilience, teamwork, communication, social responsibility, and engineering ethics are now as crucial as hard skills in adapting to rapidly changing environments. Fourth, lifelong learning processes. With shortened skill update cycles, single-stage education can no longer support entire careers. Lifelong learning has evolved from a concept to an essential survival and development necessity. This demand transformation requires the vocational education system to undergo profound self-revolution from the supply side.

2.Challenges and Existing Problems of New Productivity to Modern Vocational Education System

In response to the demands of new productive forces, China's vocational education system has achieved significant progress through years of reform, yet still faces challenges and issues at multiple levels. First, the lag and misalignment in professional structure and development dynamics. The current vocational education system lacks flexible mechanisms for setting up and adjusting majors, with insufficient forward-looking planning for strategic emerging industries and future-oriented sectors. Some traditional majors have failed to keep pace with digitalization and green transformation, resulting in a "time gap" and "skill gap" between talent supply structures and industrial demands. Second, the deep disconnect between training models and innovative practices. The current talent cultivation process still exhibits a "three emphases and three neglects" tendency: prioritizing theory over practice, skills over innovation, and single competencies over comprehensive qualities. Additionally, the separation between teaching scenarios and real-world production or R&D environments leaves students with limited opportunities to solve complex engineering problems or participate in technological innovation, thus failing to effectively integrate the cultivation of innovative spirit and practical abilities throughout the entire process. Third, the superficial dilemma in governance systems and industry-education integration. Some vocational colleges still experience the phenomenon of "hot schools, cold enterprises" in school-enterprise cooperation, with collaboration content mostly remaining at superficial levels such as on-the-job internships and order-based training. There is insufficient motivation and inadequate mechanisms for deeper integration, including jointly developing standards, creating courses, forming teams, and tackling technical challenges, which require further improvement. Fourth, the capability gap between faculty teams and industry frontiers. The current shortage and structural imbalance of dual-qualified teachers persist. Many still lack timely updates on cutting-edge industrial technologies, production processes, and management models, with their digital literacy and teaching innovation capabilities needing enhancement to effectively cultivate future digital and innovative craftsmen. Fifth, institutional barriers hinder systemic integration and lifelong learning. Vertical pathways from secondary to higher education remain underdeveloped, while horizontal integration between vocational education, general education, and continuing education faces challenges. Supportive mechanisms like credit banks and qualification frameworks for lifelong learning are still underdeveloped.

3.The Construction Path of Modern Vocational Education System from the Perspective of New Productive Forces

In order to effectively deal with the new challenge brought by the development of new quality productivity and serve the development of new quality productivity, the modern vocational education system needs to be reconstructed systematically and holistically from the aspects of concept, system, connotation, mode and guarantee.

3.1 Establish the concept of unifying service development with promoting the all-round development of human beings

Vocational education must redefine its philosophy, moving beyond the narrow focus on employment to establish

its unique role as a "type-specific education" that fulfills dual missions: serving development while promoting holistic human growth. On one hand, it should proactively align with the evolution of new productive forces, becoming a key driver for technological innovation, skill development, and practical application. On the other hand, it must prioritize a people-centered approach, focusing on students' lifelong development to cultivate sustainable employability, entrepreneurial spirit, and the comprehensive qualities needed to thrive in a changing society.

3.2 Building a Modern Vocational Education System with Vertical and Horizontal Integration

To address the multi-tiered and interdisciplinary demands of new quality productivity development for technical and skilled professionals, we will accelerate the establishment of a modern vocational education system that breaks institutional barriers. This system will create a "vertical integration" pathway connecting academic degrees and horizontally integrate diverse resources, building an "overpass" for talent development and providing targeted support for industrial upgrading. First, we will strengthen the vertical talent cultivation chain by eliminating academic barriers, establishing a seamless progression from secondary vocational education to higher vocational diplomas, vocational bachelor's degrees, and professional master's programs. Second, we will deepen horizontal resource integration mechanisms to promote collaborative development, creating a deeply integrated development framework encompassing "education chains, talent chains, industrial chains, and innovation chains." Third, we will enhance institutional safeguards by improving supporting management systems, standardizing credit standards, student record management, and quality supervision, thereby providing solid institutional support for the modern vocational education system.

3.3 Driving the Upgrade of Professional Clusters and Dynamic Iteration of Course Content

Guided by the development of new quality productive forces and anchored in industrial upgrading and technological innovation, it is imperative to drive the deep restructuring of vocational education programs and curriculum systems. This requires synchronizing professional clusters with industrial chains, aligning course content with technological iterations, and solidifying the core foundation for cultivating technical and skilled talents. First, establish an industrial linkage mechanism by addressing weaknesses in core industrial chains through the addition of interdisciplinary emerging programs and the creation of compound professional clusters. This will foster synergistic development between these clusters and regional pillar industries or strategic emerging industries, enhancing their support capacity and adaptability to industrial growth. Second, build a dynamic iteration system featuring real-time curriculum response mechanisms and innovative teaching formats. Develop an "online + offline" blended model that equally emphasizes theory and practice, ensuring curriculum content remains industry-aligned while comprehensively improving teaching quality and practical training effectiveness.

3.4 Deepening Industry-Education Integration and Science-Education Convergence Based on Real-World Scenarios

Based on the essence of vocational education talent cultivation, and with real production scenarios and technological innovation needs as the link, we promote deep integration of industry and education, mutual empowerment of science and education, and build a collaborative development ecosystem of "joint scenario construction, resource sharing, joint talent cultivation, and joint innovation research," injecting fresh vitality into the development of new-quality productivity and achieving precise alignment between the education chain, talent chain, industrial chain, and innovation chain. First, optimize collaborative layouts to create high-level integrated carriers. Focusing on key areas of new-quality productivity, integrate resources from both schools and enterprises to form a layout pattern of "school-local symbiosis and school-enterprise win-win." Second, deepen apprenticeship system reforms to implement precise talent cultivation paths. Using China's distinctive apprenticeship system as a starting point, focus on the demand for skilled talents in key industries, forming a collaborative education pattern where "school mentors strengthen theory and enterprise mentors refine skills," ensuring that cultivated talents precisely meet the needs of enterprise positions. Third, promote the convergence of science and education to establish an

innovation symbiosis mechanism. Focusing on technical bottlenecks, process innovation, and product development needs in enterprise production, carry out project research, technological breakthroughs, and achievement transformation, achieving a virtuous interaction of teaching quality improvement, production efficiency enhancement, and innovation empowerment, providing important support for driving the development of new-quality productivity.

3.5 Building a High-Level "Dual-qualified" Team and Optimizing the Collaborative Governance Ecosystem

Implement the "Dual-qualified" Teacher Development Initiative for Vocational Education in the New Era. First, establish a sustainable mechanism for two-way faculty mobility and cross-institutional appointments between schools and enterprises, creating industry mentor positions to attract master craftsmen, skilled artisans, and engineering professionals. Second, deepen teacher evaluation reforms by emphasizing practical skill proficiency and teaching effectiveness. Additionally, optimize a multi-stakeholder collaborative governance system, strengthen provincial-level coordination, ensure schools' operational autonomy, and enhance mechanisms for industry, enterprises, and social organizations to participate in education. This will foster a high-quality vocational education ecosystem characterized by government coordination, industry guidance, corporate involvement, school autonomy, and societal support.

4. Conclusion and Outlook

Accelerating the development of new productive forces is an inevitable choice for building Chinese-style modernization, while also presenting a historic opportunity for reforming and advancing the modern vocational education system. Establishing a modern vocational education system compatible with this vision requires a complex systemic effort, demanding radical conceptual innovation, deep structural restructuring, continuous content renewal, fundamental model transformation, and comprehensive enhancement of safeguards. Moving forward, we must persistently refine the modern vocational education system through practical implementation, transforming it into a true cradle for cultivating high-quality technical professionals, master craftsmen, and national artisans. This will make irreplaceable contributions to strengthening new productive forces and solidifying the talent foundation for Chinese-style modernization.

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