Cultivating New-Quality Talents under the Development of New-Quality Productive Forces: Practical Experience from Vocational Education in China

Wang,Sike Li,Liangli*

The Institute of Technology and Vocational Education, Shenzhen Polytechnic University, Shenzhen, Guangdong, 518055, China

Abstract: New-quality talents constitute the decisive element in the shaping and advancement of new-quality productive forces. They ought to possess essential attributes such as forward-looking consciousness, digital and intelligent thinking, as well as a growth-oriented mindset. The concurrent mode of education and training represents a legal obligation of vocational education. Its training objective of "simultaneous cultivation of morality and skills", "task-oriented" training content, "integration of doing and learning" training process, "school-enterprise cooperation" training approach and "stage growth" training outcome are crucial paths for China to cultivate the requisite virtues of new-quality talents, enhance their quality and ability, reflect the evaluation criteria for new-quality talents, and ultimately facilitate the cultivation of new-quality talents.

Keywords: Education and training in parallel; New-quality productive forces; New-quality talents; Simultaneous cultivation of morality and skills

DOI: 10.62639/sspjiss22.20250203

The development of new-quality productive forces constitutes a significant initiative for China to comprehensively advance the construction of a powerful nation through Chinese-style modernization. The formation and evolution of new-quality productive forces initially demand the nurturing of a considerable number of new-quality talents who are capable of fully exploiting new-quality production tools and generating innovative production value. These talents encompass both research-oriented ones who can create new-quality productive forces and skill-oriented ones who can proficiently master new-quality production tools. Vocational education expedites the forging of new-quality productive forces through technological innovation, serving as a crucial channel for promoting technological progress and cultivating new-quality talents. The extensive application of digital technology provides the basic conditions for the formation of new quality productive forces as well as shortens the iteration cycle of industrial technologies. Constructing a "parallel education and training" talent cultivation model can alleviate the impact of industrial iteration on talent demand while effectively enhancing the quality of skill-oriented talent cultivation. Thus, it represents an important and effective approach for promoting the cultivation of new-quality talents and facilitating the formation of new-quality productive forces.

(Manuscript NO.: JISS-25-3-62021)

About the Author

Wang,Sike (1990-), male, Assistant Researcher at the Institute of Technology and Vocational Education, Shenzhen Polytechnic University, Ph.D. in Management, research focus: Educational Economics.

Corresponding Author

Li,Liangli (1990-), female, Assistant Researcher at the Institute of Technology and Vocational Education, Shenzhen Polytechnic University, Ph.D. in Education, research focus: Higher Education Management, Higher Vocational Education.

Funding

The Shenzhen Philosophy and Social Science Planning Project, “Research on the Optimization Strategies for Cultivating High-Skilled Talents in Shenzhen's Higher Vocational Education to Promote the Development of New Quality Productivity” (SZ2024C030).

The Shenzhen Philosophy and Social Science Planning Project, "A Comparative Study on the Economic Contribution and Its Mechanism of Typed Education under the Background of the Digital Economy" (SZ2022C007).

1. Interpretation of the Connotation and Analysis of the Traits of New-Quality Talents

Humans constitute the most vigorous and decisive agents in the generation of new-quality productive forces. Absent the leap in human capital, the formation and development of new-quality productive forces would be impossible. New-quality talents are the originators of new models, leaders of new industries, formers of new business formats, pioneers of new fields, and providers of new impetus. They are innovative talents endowed with stronger scientific thinking, learning capabilities, collaborative spirit, and green concepts. They are also practical talents who make full use of modern information technology, adapt rapidly to advanced equipment, actively engage in transforming the world, and drive the development of new-quality productive forces. They represent the decisive factor in the formation and development of new-quality productive forces.

Therefore, the new-quality talents must meet the needs of the digital and intelligent era and satisfy the demand for innovative talents in strategic emerging industries and future industries. Specifically, they must possess three core traits. First, they must have a forward-looking consciousness. This means looking ahead and far, possessing broad vision, great morality, a strong sense of responsibility, and a comprehensive industrial chain awareness. New-quality talents are both users and creators of new technologies, as well as guardians and promoters of humanistic values and technological ethics. In their use and promotion of technological innovation, they must adhere to human-centered principles, focus on enhancing human well-being, maintaining social equity, and upholding ecological concepts, ensuring the coordinated development of science and technology with ecological civilization. Second, they must possess digital and intelligent thinking. Digital intelligence is the synthesis of digital wisdom and intelligent digitization, forming a new ecosystem of "humans in machines, machines in humans" with intelligence as the link. Thus, New quality talents should possess the digital and intelligent concepts and thinking of "coexisting with machines"1. Third, they must have a growth-oriented mindset. Unlike a fixed mindset that struggles to accept social changes and rejects new experiences, new-quality talents should value learning and pursue excellence, striving to form a "growth-oriented mindset" through lifelong learning and the combination of doing and learning. This mindset enables them to innovatively solve various challenges that may arise in the development of strategic emerging industries and future industries, keeping pace with rapidly iterating technological advancements.

2. The Logical Foundations of Promoting the Cultivation of New-Quality Talents through Parallel Education and Training

While improving the quality of education and teaching, vocational colleges should actively engage in vocational training that serves the construction of a skill-oriented and innovation-oriented society. The "parallel education and training" talent cultivation model advocates integrating vocational qualifications and skill level certificates into the education and teaching process. It is an inevitable choice for promoting the cultivation of new-quality talents and achieving effective alignment between the talent supply of vocational education and the talent demand of industrial development, with its profound logical foundations.

(1) The theoretical logic of promoting the cultivation of new-quality talents through parallel education and training

New-quality talents are the key resource of new-quality productive forces, and modern industries are the important carriers of new-quality productive forces. The parallel and equal emphasis on school education and vocational training is an inevitable choice for promoting the high-quality cultivation of skilled talents and optimizing the modern vocational education system. The modern vocational education system should have characteristics such as multiple intersections, organic connections, and demand alignment. First, from the perspective of "multiple intersections," the employment issue not only affects the direct interests of graduates and vocational colleges but also involves the interests of multiple stakeholders such as enterprises, governments, and society. Building a

modern vocational education system with the participation of multiple stakeholders is conducive to optimizing the educational capabilities of vocational education, forming an open and cooperative talent cultivation model, and compensating for the resource deficiencies of vocational colleges, enhancing the relevance, practicality, and novelty of talent cultivation. Second, from the perspective of organic connections, as preparatory education closely related to employment, vocational education has a crucial impact on industrial development. The "parallel education and training" talent cultivation model emphasizes both school education and vocational training, striving to promote the high-quality development of vocational education through school-enterprise cooperation and industry-education integration, thus serving as an important method for promoting the cultivation of new-quality talents. Third, from the perspective of demand alignment, as the key to building a modern industrial system, strategic emerging industries and future industries are also the main battlefields for developing new-quality productive forces. Unlike traditional industries, strategic emerging industries and future industries are largely supported by cutting-edge technologies that may have a disruptive impact on existing mature technologies. Guiding students to maintain good habits of continuous and lifelong learning, as well as fostering a culture of continuous and lifelong learning are essential to meet the new requirements of new-quality productive forces for talent cultivation.

(2) The historical logic of promoting the cultivation of new-quality talents through parallel education and training

The "combination of education and training" is a concentrated reflection of the development model of vocational education with Chinese characteristics and the foundation for promoting the "parallel education and training" talent cultivation model. The "combination of education and training" in China has generally gone through three stages. The first stage is the "unidirectional demand" of vocational colleges. The prototype of the "combination of education and training" originated from the unidirectional talent cultivation demand of the supply side (vocational colleges): schools actively contacted enterprises to cultivate students' operational skills and improve their employment competitiveness. However, schools and enterprises belong to different fields, and without subordinate relationships, in the absence of binding force and lack of interest-driven motivation, the problem of "hot schools and cold enterprises" emerged. "School education" dominated talent cultivation, and "vocational training" struggled to be effectively carried out and achieve practical results. The second stage is "education-oriented, combined with training". Under the dual influence of policy guidance and enterprise demand, the forms of cooperation between schools and enterprises became increasingly diverse, and the scope of cooperation continued to expand, giving rise to various cooperation models such as order-based training, school-run enterprises, and enterprise-run schools. At this stage, although students had more opportunities to participate in vocational training within enterprises, and the interaction between the two sides significantly increased, "school education" and "enterprise training" had not yet reached the level of "parallel and equal emphasis", and the talent cultivation model still primarily relied on school education. The third stage is the "active participation" of enterprises. Subsequently, the government has successively issued multiple policy documents aimed at deepening the integration of industry and education in vocational education and enhancing school-enterprise cooperation, explicitly proposing to improve the modern vocational education system that equally emphasizes academic education and training, and unblock the growth channels for technical and skilled talents, and setting specific target requirements for establishing "industry-education integration enterprises", marking the entry of the "combination of education and training" into a new stage of active and deep participation by enterprises. The evolution of the "combination of education and training" from the "unidirectional demand" of vocational colleges to "education-oriented, combined with training", and then to the "active participation" of enterprises is also a process of "from the surface to the inside, from shallow to deep, and continuously strengthening" vocational training. The main position and role of enterprises in this process have been continuously consolidated, which is not only conducive to strengthening the cultivation of new-quality talents but also promotes the high-quality development of industries and the economy.

(3) The practical logic of promoting the cultivation of new-quality walents through parallel education and training

From the specific goals of vocational education talent cultivation, whether it is the initially proposed "applied talents", "technical talents", or the later proposed "practical talents", or the currently proposed "high-skilled talents", all particularly emphasize the cultivation of vocational skills. The cultivation of vocational skills, in addition to being based on school education, requires vocational training and practical experience in specific positions. Influenced by various factors, both educators and vocational college students tend to prioritize school education, somewhat underestimating the importance of vocational training and production practice. Based on the needs of developing new-quality productive forces, the capabilities that new-quality talents should possess mainly include practical abilities, innovative abilities, employment abilities, and entrepreneurial abilities. Among these, "practical ability" is the key and the foundation for cultivating innovative abilities, employment abilities, and entrepreneurial abilities. Building a "parallel education and training" talent cultivation model around the development of new-quality productive forces can not only better meet the demand for high-skilled talents in strategic emerging industries and future industries, achieving mutual promotion between industrial development, technological innovation, and talent cultivation, but also take this opportunity to build a platform for integrating heterogeneous resources and gathering new-quality talents, promoting the extension of the industrial chain in new industrial fields, releasing the potential of new industrial development, and providing strong support for accelerating the formation of new-quality productive forces. From this perspective, the"parallel education and training"model advocates fully integrating the advantages of school education and vocational training, continuously increasing the intensity of vocational training, which is effective in supporting the transfer of skilled talents from traditional and declining industries to emerging and expanding industries, quickly adapting to technological iterations, and preventing skill depreciation. Therefore, it is an effective path and method for promoting the cultivation of new-quality talents.

(4) The value logic of promoting the cultivation of new-quality talents through parallel education and training

The development of new-quality productive forces requires new-quality talents to possess basic skills and core competencies that adapt to the continuously changing industrial environment while being prepared for continuous and lifelong learning, rather than being satisfied with mastering specific vocational skills for a particular job. When workers' job positions, job nature, or work units change, their previously accumulated work skills and experience may not be promptly recognized, potentially increasing the difficulty of entering new industries, new enterprises, or new positions. At the same time, if universally recognized authoritative proof materials cannot be obtained, many people may be reluctant to invest too much time, energy, and funds into "vocational training" as a form of informal learning. Conversely, if an effective skill recognition mechanism is established, it can effectively eliminate the impact of information asymmetry on industrial iteration and encourage people to maintain good habits of continuous and lifelong learning. This will promote the gradual replacement of past "time-based" vocational training with "outcome-based" skill training. "Skill level certificates" focus on the interests of individuals, enterprises, and society, encourage the occurrence of informal and lifelong learning, and ultimately provide an effective recognition mechanism for such informal learning in the form of "certificates." From the perspective of social demand, "parallel education and training" meets the era's demand for "quality improvement and excellence enhancement" in vocational education, and the "1+X" certificate system is the inherent requirement and key measure for realizing the organic combination of school education and vocational training. Through the organic combination of school education and vocational training, achieving the complementary advantages of academic resources and industrial resources, and promoting the organic coordination of vocational education and industrial development, the value of vocational education and the effectiveness of talent cultivation can be more directly reflected2.

3. Feasible Paths for Promoting the Cultivation of New-Quality Talents through Parallel Education and Training

New-quality productive forces call for new-quality talents. The parallel approach of education and training advocates the training goal of"simultaneous cultivation of morality and skills,""task-oriented"curriculum teaching,"combination of doing and learning"training process, and"school-enterprise cooperation"training methods. These are important paths for cultivating the necessary virtues of new-quality talents, enhancing their innovative abilities, professional skills, and comprehensive qualities, reflecting the evaluation standards for new-quality talents, and ultimately promoting the formation of new-quality talents.

(1) Training goal: "simultaneous cultivation of morality and skills" promotes the cultivation of virtues in new-quality talents

The fundamental purpose of vocational education talent cultivation is to meet the demand for professional talents in economic and social development. In the past, vocational education's understanding of "competency-based" was biased, narrowly focusing on the training of professional skills while somewhat neglecting the cultivation of professional ethics, innovative spirit, and humanistic qualities. With the continuous acceleration of technological innovation and job iteration, technological progress brings new professions, new business formats, and new positions while also phasing out some traditional professions and positions. Pure vocational skills can hardly adapt to the needs of job changes. The "simultaneous cultivation of morality and skills" is an effective way to cultivate high-quality skilled talents and a specification requirement for the ideal vocational education talent cultivation. New-quality productive forces are high-quality productive forces, and the "simultaneous cultivation of morality and skills" of skilled talents is a powerful guarantee for promoting the fundamental transformation of economic development from "quantity-based" to "quality-based" and the core of promoting industrial transformation and upgrading and forming new-quality productive forces. Cultivating skilled talents with "simultaneous cultivation of morality and skills" is an important mission of vocational education reform and development in the new era, reflecting the response of vocational education to the needs of the digital and intelligent era. The "parallel education and training" talent cultivation model emphasizes the equal emphasis of school education and vocational training, requiring students to master solid theoretical knowledge and cultivate proficient professional skills while also emphasizing the cultivation of students' professional ethics, innovative abilities, and other comprehensive qualities, striving to achieve the goal of "simultaneous cultivation of morality and skills " through "parallel education and training".

(2) Training content: "task-oriented" enhances the innovative abilities of new-quality talents

"Task-oriented" originates from "task-driven," which refers to the behavior of guiding and regulating tasks, emphasizing the guiding and regulating role of tasks. Task-oriented teaching is an important model for cultivating skilled talents in vocational colleges, with the main purpose of stimulating, strengthening, and maintaining students' achievement motivation through "tasks". New-quality talents should not only possess new scientific and technological concepts but also be proficient in mastering new technologies and using new tools, and creatively solve economic, social, and cultural problems in the new era. In the past, the curriculum design of vocational education mostly followed the model of general education, and the curriculum and teaching content struggled to keep up with the rapid iteration of industries, making students feel that it was difficult to acquire useful knowledge through course learning, and enterprises felt that students' knowledge structure could not meet the needs of job positions. Strategic emerging industries and future industries are important carriers of new-quality productive forces, and the process of forming new-quality productive forces is also the process of accelerating the development of strategic emerging industries, the rise of future industries, and the accelerated iteration and upgrading of industries. From the perspective of cultivating new-quality talents, vocational colleges should abandon the past tendency of emphasizing theory over application and academic qualifications over abilities, and build a curriculum

system that connects market demand and talent growth, curriculum goals and ability cultivation, teacher support and teaching resources, and establish a curriculum development mechanism involving multiple stakeholders such as schools, enterprises, and administrations to ensure the practicality, scientificity, and frontier nature of the curriculum system and training content. From this perspective, adhering to the "task-oriented" principle in the vocational education curriculum system and training content is an effective means of promoting the cultivation of innovative abilities in new-quality talents.

(3) Training process: "combination of doing and learning" enhances the professional skills of new-quality talents

In the process of cultivating skilled talents, it is very necessary to involve students in production practice activities, promoting personal growth and skill enhancement through the combination of "education" and "skill training". The combination of doing and learning emphasizes "learning while working, working while learning, achieving the combination of learning and work, and the mutual promotion of theory and practice". The "combination of doing and learning" aligns with the philosophy of vocational education talent cultivation, is a scientific choice for improving the skill quality of talents, and is an inevitable requirement for cultivating skilled talents in the context of new-quality productive forces. The core element of new-quality productive forces is innovation, which originates from practice. The development of practice provides increasingly complete cognitive tools, which extend the cognitive organs of learners, promote the development of students' cognition, and thus stimulate innovative abilities. In the past, we overemphasized the educational function of vocational education, neglected the "skill training function", weakened the vocational characteristics of vocational education, resulting in a disconnection between school talent cultivation and market demand, and exacerbating the structural contradiction in the talent market supply and demand. The "parallel education and training" model emphasizes the "combination of doing and learning", striving to break through the barrier between theoretical knowledge and professional skills through the integration of the two, helping learners achieve the leap from specific job skills to general professional skills, and from immediate application skills to lifelong innovative skills. These are the skills and traits that new-quality talents need and should possess, and they are also the differences between new-quality talents and past "skilled talents".

(4) Training methods: "school-enterprise cooperation" enhances the comprehensive qualities of new-quality talents

Comprehensive qualities play a crucial role in an individual's career and personal growth, encompassing the knowledge level, moral qualities, and social cultivation that an individual must possess at a specific time, as well as the values and adaptability demonstrated in the processes of learning, working, and living. The characteristics of new-quality productive forces are innovation and quality. Comprehensively improving the comprehensive qualities of workers and preparing for the "digital and intelligent era" are not only necessary for the development of strategic emerging industries and future industries but also the direction for the comprehensive and innovative development of new-quality talents. The cultivation of comprehensive qualities cannot be separated from the collaborative efforts of schools and enterprises. Industry-education integration and school-enterprise cooperation are important ways to implement parallel education and training and achieve collaborative efforts between schools and enterprises. Although vocational education has a strong systematic nature, it belongs to the category of academic education, and students can hardly gain a deep understanding of industrial culture and professional culture solely through campus scenarios and textbook knowledge, as they would through in-depth enterprise and production service front-line experiences. Schools and teachers also find it difficult to flexibly set majors and adjust curriculum content based on the subtle changes in the labor market supply and demand. Under the talent cultivation model that equally emphasizes school education and vocational training, vocational colleges and enterprise organizations focus on job talent demand, refine professional quality standards, jointly build professional and curriculum systems, and jointly promote the high-quality development of vocational education. While systematically learning theoretical

and professional knowledge, students have more opportunities to enter enterprises for internships and practical training3. Under the guidance of experienced "masters", they can practice skills while experiencing the influence of corporate culture and professional spirit, making it easier to quickly grow into new-quality talents with high comprehensive qualities.

4. Conclusion

With the accelerated transformation of society, shortened skill renewal cycles, and the continuous emergence of emerging and future industries, the traditional talent cultivation model of vocational colleges finds it difficult to meet the requirements of these industries. By building a talent training model of "education and training in parallel", China's vocational education has alleviated the impact of industrial iteration on talent demand, effectively improved the quality of skilled talent training, and provided valuable reference experience for the formation of global skills.

References

[1] Zhiting Zhu, Ling Dai, Xiaowei Zhao, Shenshu Sheng. Cultivating Novel-Quality Talents: A New Mission for Education in the Age of Digital Intelligence[J]. E-educ Res, 2024(1):52-60.

[2] Yuqian Li. Research on the Construction of Industry-Education Integration Community from the Perspective of New Quality Productivity[J]. Social Sciences in Nanjing, 2023(12):122-129.

[3] Yuhuan Chen. Research on the Construction of Vocational Training System in Vocational Colleges under the Background of Integration of Education and Training[J]. Chinese Vocational and Technical Education, 2022(22):50-53.