

Research on the Construction Path of Industry-Education Integration Communities in Local Universities Driven by New Quality Productive Forces

Lili Zhang

Science and Technology Department, Wuhan Technology and Business University, Wuhan Hubei, China

zhanglili@wtbu.edu.cn

Abstract. Vigorously promoting the construction of modern industrial system and accelerating the development of new quality productivity has become the key to China's economic development. Local universities, as an indispensable part of regional development, should follow the pace of national development, put their energy into the development of new-type productive forces, combine with the actual development of the school, and actively join hands with enterprises to jointly research technological and innovative teaching ability and production technology, in order to adapt to the requirements of the national high-quality development.

Keywords: New Quality Productivity; Local Universities; Industry-Teaching Integration Community.

1. Introduction

General Secretary Xi first put forward "New Quality Productive Forces" in September 2023 during his investigation in Heilongjiang province. In February 2024, Xi made a systematic elaboration on the development of new quality productive forces during the eleventh collective study of the Political Bureau of the CPC Central Committee, and in the 2024 Government Work Report, he made "vigorously promoting the construction of modern industrial system and accelerating the development of new quality productive forces" as the primary task for the whole year, and new quality productive forces became the keyword of China's economic development. The new quality of productivity is the productivity that is mainly based on scientific and technological innovation, the productivity that is free from the traditional growth path and meets the requirements of high-quality development, and the productivity that is more integrated and embodies new connotations in the digital era [1]. It refers to the productivity nurtured by the new generation of scientific and technological revolution and industrial transformation represented by information technology, which has not only changed the mode of production, economic structure and social pattern, but also reshaped the way of life and work of human beings [2]. In this process, innovation, knowledge, information technology and other key elements to drive economic and social development, and the deep integration of higher education and industrial development is a bridge to realize the new quality of productivity. On the one hand, the integration of industry and education spans the two systems of education and industry, and is an important hand in the supply side of talent cultivation and economic transformation; on the other hand, under the perspective of the new quality of productive forces, how to deal with the problems and difficulties that have arisen in the process of the development of the integration of industry and education, and how to make the community of integration of education and industry better adapt to the new quality of productive forces in the new form of the problem needs to be explored in-depth.

2. Review of the Current State of Research

Since the introduction of the concept of new quality productive forces, domestic scholars have primarily focused on exploring its core principles and extensions, as well as strategies for enhancement. However, research remains in its nascent stages, with a notable gap in studies examining the integration of industry and education within this framework. Current investigations predominantly address the following areas.

2.1 Internal Characteristics of New Quality Productive Forces

Han Yuchen conceptualizes new quality productive forces as an integrated framework comprising six interrelated dimensions: connotation theory, formation theory, status theory, subject theory, path theory, and methodology[3]. This theoretical construct positions innovation as the driving force and scientific-technological advancement as the core element, with technological breakthroughs serving as the primary catalyst. Supporting this perspective, Pu Qingping and Huang Yuanyuan argue that scientific-technological innovation enhances production tools and optimizes processes, thereby driving productivity growth and socioeconomic development[4].

2.2 Development Path of Higher Education in the Context of New Qualitative Productivity

New quality productive forces represent an advanced form of productivity that facilitates the virtuous integration of education, science, technology, and talent. Scholars have identified significant connections between this concept and higher education development. Dai Xiang posits a reciprocal relationship between new quality productive forces and higher education, suggesting this synergy will drive the restructuring of higher education within China's urban agglomerations[5]. Similarly, Wan Xin emphasizes the alignment between new quality productive forces and the educational mission of fostering comprehensive human development, viewing it as a catalyst for institutional advancement[6]. The evolution of new quality productive forces necessitates universities to strengthen ideological foundations, cultivate innovation, enhance scientific literacy, and upgrade practical competencies. In the era of mass higher education, Liu Yan advocates for redefining undergraduate education by emphasizing high-level, interdisciplinary talent cultivation. This approach involves deepening industry-academia collaboration, improving cooperative education systems, and developing integrated educational pathways that combine vocational training with academic education, ultimately enhancing the overall quality of undergraduate education [7].

2.3 Personnel Training Methods for New Quality Productive Forces Development

Li Mingliang identifies new-type workers as the pivotal element in advancing new quality productive forces. This category encompasses strategic scientists, technological leaders, exceptional engineers, innovative entrepreneurs, along with master craftsmen and highly skilled professionals proficient in new quality applications [8]. Complementing this perspective, Liu Xiaoxuan proposes that higher education institutions should establish robust quality assurance mechanisms to foster scientific innovation and technological transformation. Such systematic approaches aim to enhance students' comprehensive competencies, ensuring their alignment with the demands of new quality productive forces [9].

2.4 Research on Mechanisms for Integration of Industry and Education

A search conducted on the China Knowledge Network using the keywords "new quality productive forces" and "industry-teaching integration community" yielded only one relevant article: Cui Fazhou's "Functional Positioning of Industry-Teaching Integration Community in the Context of New Quality Productive Forces," which approaches the topic from the perspective of vocational education. The majority of existing research primarily focuses on the broader concept of industry-education integration. Industry-education integration, rooted in market principles, aims to address challenges related to the top-level design and operational mechanisms of university-enterprise collaboration. Zhang Pei argues that high-level applied universities, characterized by their emphasis on high-quality practical teaching, sustainable outcomes transformation chains, and stronger societal connections, not only constitute a vital component of the diversified development landscape of higher education but also serve as a driving force for innovation in promoting industry-education integration within vocational education [10].

2.5 Research Review

In general, the theoretical research on the new quality productive forces has achieved considerable depth, with most studies adopting a macro-level perspective. These studies provide comprehensive discussions on the development of industry-education integration under the framework of new quality productive forces, while also delineating the future trajectory of China's economic and social development. However, there remains a significant research gap regarding how local universities should adapt and evolve within the context of new quality productive forces, particularly in terms of the future development of industry-teaching integration communities. Currently, there is an urgent need to enhance the synergy between industry and education in this new context. Persistent challenges include the pronounced disconnect between talent supply and industrial demand (often referred to as the "two-skin" phenomenon), as well as the substantial gap between policy requirements and theoretical implementation. The industry-teaching integration community in this new era must urgently explore innovative methodologies and countermeasures, clarify its functional positioning, and expand its service capabilities to foster mutually reinforcing development among all stakeholders.

3. Fundamental Framework for Industry-Education Integration Communities in Local Universities under New Quality Productive Forces

3.1 Theoretical Foundations of Industry-Education Integration

The establishment of an industry-education integration community fundamentally relies on resource integration, the enhancement of multi-stakeholder synergies, and the collective innovation of operational mechanisms. These elements are crucial for optimizing industrial chain structures and strengthening the core competitiveness of universities. In this study, "new quality productive forces" refers to the capacity of local universities to drive scientific and technological innovation through resource integration, thereby facilitating the development of emerging industries and expanding novel industrial models. This concept represents the core driving force behind the efficient development of social productivity. From the perspective of innovation resource theory, industry-education integration emerges as an effective pathway for developing new productive forces. Both concepts share inherent logical connections and are grounded in common theoretical foundations for development.

3.2 Historical Foundations of Industry-Education Integration

Industry-education integration, initially termed "university-industry cooperation," represents a collaborative educational model between academic institutions and enterprises. Historically, this integration has evolved through three distinct phases: the initial phase characterized by a singular talent cultivation model, followed by the school-enterprise cooperation model, and culminating in the current phase driven by national policy initiatives [10]. In its nascent stage, industry-education integration was predominantly concentrated within the vocational education sector, primarily aimed at cultivating enterprise-oriented professionals, optimizing academic program structures, enhancing student employability, and ultimately fostering mutually beneficial collaboration between academia and industry.

A significant milestone occurred in 2017 when the 19th National Congress of the Communist Party of China explicitly emphasized "deepening industry-education integration" in its working report. This declaration marked the transition to national institutional leadership in industry-education integration, establishing it as a crucial bridge between talent supply and demand [11]. The development of new quality productive forces must be fundamentally oriented toward "high-quality development," guided by scientific and technological innovation, and grounded in emerging industries to accelerate industrial upgrading. From this perspective, the objectives of constructing university industry-education integration communities have become more clearly defined within the framework of new quality productive forces.

3.3 The Practical Foundation of Industry-Education Integration

The development of new productive forces fundamentally relies on the integration of resources for science, technology, and innovation, which is achieved through the synergistic combination of resource elements, including their co-construction and sharing mechanisms. The concept of new quality productive forces emphasizes the imperative transformation of scientific and technological innovations into tangible productive outcomes. The industry-education integration community emerges from the collaborative efforts of educational systems and industrial enterprises, encompassing two critical elements: scientific and technological innovation and actual productivity.

Universities and enterprises represent the most direct and significant stakeholders in industry-education integration. This integration should adhere to the principle of "dual-track advancement," facilitating the sharing of resources such as talent, technology, facilities, funding, and curricula between academic institutions and enterprises. Consequently, it is evident that industry-education integration shares a substantial practical foundation with the development of new quality productive forces.

4. Challenges in Constructing Industry-Education Integration Communities in Local Universities from the Perspective of New Quality Productive Forces

4.1 Overcoming Traditional Challenges in Industry-Education Integration

Despite the Chinese government's clear policy directives and substantial support for industry-education integration, evidenced by the successive issuance of numerous supportive policies, significant challenges persist in aligning talent cultivation with socioeconomic transformation and upgrading through intensive internal growth pathways. These challenges primarily encompass reducing transaction costs, clarifying training property rights, optimizing governance mechanisms, resolving collective action dilemmas, and establishing integrated platforms [12]. In light of the developmental requirements of new quality productive forces, local universities must proactively explore innovative approaches to overcome these barriers. This entails focusing on the development of cross-disciplinary and cross-regional collaborative platforms, thereby fostering a novel model of industry-education integration characterized by openness and pluralism.

4.2 Embodying the Contemporary Characteristics of New Quality Productive Forces

New quality productive forces are characterized by their dominant, forward-looking, and purposive nature. The dominant characteristic is manifested in their capacity to lead and propel new scientific and technological revolutions. The forward-looking aspect enables the empowerment of emerging industries, while the purposive nature is demonstrated through the promotion of high-quality industrial development. In constructing industry-education integration communities, it is essential to organically incorporate traditional material information and data into labor processes. This integration should encompass multiple elements, including "government, industry, academia, research, and application," thereby forming an innovative cooperative community aligned with new quality productive forces. Figures and Tables

4.3 Aligning with the Developmental Mission of New Quality Productive Forces

The emergence of new quality productive forces has imposed elevated requirements on the construction of industry-education integration communities in local universities. From the perspective of digital productivity, the paramount challenge lies in achieving effective integration between the digital and traditional economies, facilitating digital technology-driven transformation and development of conventional productivity, and enhancing the digital sophistication of industries. Regarding green productivity, collaboration with enterprises may encounter synergistic pressures, particularly in balancing economic benefits with social and environmental considerations.

5. Research on the Construction Path of the Community of Industry-teaching Integration in Local Universities from the Perspective of New Quality Productive Forces

5.1 Clarify the General Line of the Construction of the Integration of Industry and Education in Local Colleges and Universities

Under the perspective of new quality productive forces, the community of industry-education integration should undertake the new mission of empowering industrial development. It should effectively integrate local educational resources, establish close contact with upstream and downstream enterprises, and jointly plan implementation programmes for sustainable development. For instance, prestigious institutions can collaborate across disciplines to tackle key challenges, jointly construct platforms for the transformation and application of scientific research achievements, establish off-campus training bases, and engage in targeted talent training activities together. Such initiatives are aimed at achieving a cross-category, cross-regional synergistic knowledge spillover effect.

5.2 Playing the Main Role in the Construction of Industry-Teaching Integration Community in Local Universities and Colleges

Emerging technologies play a dominant role in the development of new quality productive forces. The construction of industry-education integration communities must adhere to the principle of local universities taking the lead, following a path of connotative development. Universities should promote the alignment of disciplinary and professional layouts with industrial structure layouts. It is essential to uphold the principle of mutual benefit and flexibly choose models of industry-education integration. Based on the needs of both parties, suitable models should be selected to effectively safeguard the interests of the university, particularly in terms of talent cultivation benefits, while also securing practical teaching resources. For enterprises, the focus should be on economic benefits, gaining human resource support, and intellectual backing, thereby solidifying the cooperative relationship.

5.3 Exploring the Technological and Professional Advantages of Local Universities in Building Industry-Education Integration Communities

Local universities should maximize their technological and professional advantages, aiming for high-quality development, and carry out forward-looking and practical scientific and technological innovation research activities. For instance, universities can provide venues and supporting resources, inviting enterprises to invest in and establish scientific research facilities on campus for actual operational activities. This includes mutual faculty appointments, shared facility construction, joint project undertakings, and collaborative talent cultivation. Additionally, channels and mechanisms for equal and rational consultation and communication among all participating parties should be established. A goal system should be formulated and managed effectively.

Universities should sign school-enterprise cooperation agreements with leading industry enterprises and large corporations to jointly develop professional training programs, construct science and technology courses, and organize internships and practical training. Together, they can establish off-campus science and technology practice bases and collaborate on innovative project research. This ensures that professional development aligns with the innovative needs of the industry, teaching content meets the requirements of technological positions in enterprises, the teaching process integrates with actual operational processes, and scientific research supports enterprise technological upgrades. This achieves a collaborative school-enterprise effort throughout the entire talent cultivation process.

Finally, all parties should work together to develop a comprehensive set of result application procedures. This ensures that industry-education integration activities become more standardized, institutionalized, and sustainable.

5.4 Integrating Innovative Resources for the Construction of Industry-Education Integration Communities in Local Universities

The development of new quality productive forces must be supported by outstanding talent. It is essential to deeply leverage the resource advantages of both enterprises and universities. By jointly constructing training bases and conducting professional practical activities, the alignment between specialized talent and industry development demands can be enhanced, using "real-world problems" to cultivate students' creativity and execution capabilities. At the same time, it is important to establish diversified collaborative innovation platforms. By fully utilizing the resource advantages of the community, diverse cooperative entities can be created through the construction of university science parks, science and education cities, and innovation alliances, promoting the innovative application of industry-education integration outcomes and fostering multidimensional innovation through multi-party collaboration.

Additionally, an international development orientation should be adopted. Under the "Belt and Road" initiative, the connotation of new quality productive forces should be enriched, resource complementarity should be strengthened, industrial linkage spaces should be expanded, and technological exchanges with foreign entities should be promoted. This will accelerate the international development of industry-education integration.

5.5 Enhancing the Teaching Capacity of Local Universities in Industry-Education Integration Communities to Demonstrate New Quality Standards

Firstly, the teaching skills of teachers need to be further improved, and efforts should be made to build a new type of teacher team with "one specialty, multiple abilities" and "dual teachers, multiple habitats". Only by integrating the concept of new quality productive forces into teaching practice can teachers help students build the ability to support the new quality industry. Secondly, the content and format of the textbooks should be further optimized to develop "intelligent and smart" textbooks. Display voice interaction, video demonstrations, virtual experiments, etc. through the client, focusing on combining textbooks with cultivating students' practical operational abilities. At the same time, construct a "fusion precision" teaching method. Facing the new quality industry, teaching methods should break the linear teaching organizational form and construct more three-dimensional and flexible teaching methods.

5.6 Expanding the Functional Services of Industry-Education Integration Communities in Local Universities

Expanding functionality is an inevitable requirement for industry-education integration in the context of developing new quality productive forces. On one hand, leveraging the unique identity of these communities, efforts should be made to explore and expand their pathways for participating in government educational decision-making, consulting, and governance, thereby achieving functional expansion. On the other hand, it is essential to establish service functions that integrate educational, innovative, and industrial capabilities at a high level, effectively linking the education chain, talent chain, industry chain, and innovation chain. A framework should be built that focuses on goal achievement and involves the collaborative participation of all stakeholders, fostering a model of co-construction, co-governance, and co-management. This model should exemplify democratization, market orientation, modernization, and specialization. Additionally, research should be conducted to establish an information platform for industry-education integration, making activity processes transparent and providing regular practical teaching management services for schools or social institutions.

6. Conclusion

The vigorous development of new quality productive forces represents a critical imperative for China's current developmental stage. As pivotal contributors to regional economic advancement,

local universities must synchronize their development with national progress by actively engaging in collaborative endeavors with enterprises to explore innovative teaching methodologies and production technologies. It is imperative to fully harness the leadership role of local universities in establishing industry-education integration communities. This entails, on one hand, capitalizing on the technological and professional advantages inherent in these communities, and on the other hand, integrating innovative resources to jointly establish training bases and conduct professional practical activities. Concurrently, sustained efforts should be directed toward enhancing the pedagogical competencies of faculty members, ensuring that the instructional capacity of local universities' industry-education integration communities reflects new quality standards. Ultimately, it is essential to expand the functional services of these communities by creating a comprehensive framework focused on goal attainment with the collaborative participation of all stakeholders. This framework should provide systematic practical teaching management services for educational institutions and social organizations, thereby fostering a model characterized by co-construction, co-governance, and co-management.

Acknowledgments

This research was supported by the following funding sources: the Hubei Provincial Education Science Planning General Project, titled "Research on the Realization Path of Industry-Education Integration Communities in Local Universities from the Perspective of New Quality Productive Forces" (Grant No.: 2024GB502), and the Doctoral Research Fund of Wuhan Technology and Business University, titled "Research on the Development Strategy of High-Level Applied Private Universities in the New Era" (Grant No.: D2019011).

References

- [1] GAO Shuguo. The value point and strategy choice of higher education layout adjustment in urban agglomerations under the background of developing new quality productivity[J]. Modern Education Management,2024(6):1-10.
- [2] HU Wanshan, YE Lin. Historical Evolution, Realistic Basis and Development Trend of Industry-Teaching Integration in Higher Vocational Education[J]. Modern Education Management, 2022(10):12-16.
- [3] ZHANG Pei. Accompaniment and Coupling: High Quality Development of Vocational Education in the Perspective of New Quality Productivity[J]. Higher Education Management,2024(5):44-50.
- [4] WANG Yi. The mission and path optimisation of vocational education to serve the construction of skill-based society under the background of developing new quality productivity[J]. Modern Education Management,2024(6):11-20.
- [5] WANG Zhuli. Optimisation of the mission and path of vocational education to serve the construction of skill-based society under the background of developing new quality productivity[J]. Modern Education Management,2024(6):15-23.
- [6] ZHANG Tingting, Li Chong. Relationship and Path: Research on the Action Logic of Industry-Education Integration to Cultivate Excellent Engineers[J]. China Higher Education Research,2023(5):48-54.
- [7] PU Qingping, Huang Yuanyuan. The generative logic, theoretical innovation and epochal value of General Secretary 's important discourse on new quality productivity[J]. Journal of Southwest University (Social Science Edition),2023(6):1-11.
- [8] DAI Xiang. Promoting high-quality development by developing new quality productivity[J]. Tianjin Social Science, 2023(6):103-110.
- [9] HAN Yuchen, GAO Zhengli. The logical system of 's important discourse on new quality productivity[J]. Contemporary Economic Management,2024(5):3-8.
- [10] WAN Xin, NIE Qinyong. Civic and political education in colleges and universities to empower the development of new quality productivity: internal logic, practical needs and relief measures[J]. Contemporary Education Forum,2024(5):1-16.

- [11] LI Mingliang. The Rational Reflection on Cultivating New Skilled Talents to Promote the Development of New Quality Productivity[J]. Vocational Education Forum,2024(4):17-19.
- [12] LIU Zhibiao, LING Yonghui, SUN Ruidong. Direction and strategy of industrial development under new quality productivity--Taking Jiangsu as an example[J]. Nanjing Social Science,2023(11):59-66.
- [13] ZHU Zhiting. Integration and Innovation: Digital Intelligence Technology Enabling New Qualitative Development of Higher Education[J]. Open Education Research,2024(6):4-13.
- [14] KUANG Ying. The key to deepening the integration of industry and education in vocational education is to achieve the physical operation of cross-border organisations[J]. Journal of Hebei University (Philosophy and Social Science Edition),2024(3):81-91.
- [15] SONG Hongqiao. Digital Transformation Enabling New Quality Productivity: Mechanisms, Challenges and Path Choices[J]. Journal of Beijing Institute of Technology (Social Science Edition),2024(6):1-10.
- [16] CHEN Fengying. The coupling mechanism of new quality productivity and high-quality development of vocational education[J]. National Education Research,2024(5):20-28.