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2026 Volume 4, Issue 2
Educational Innovation Research
ISSN: 3029-1844(Print) ISSN: 3029-1852(Online)

Reform and Practice of Higher Education Management System under the Perspective of Industry-Education Integration

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Abstract: Against the backdrop of accelerating technological revolution and industrial transformation, industry-education integration has emerged as a pivotal pathway to drive high-quality development in higher education and support China's innovation-driven development strategy. However, China's higher education management system still faces deep-seated challenges including unequal status between universities and enterprises, rigid resource allocation mechanisms, and misaligned evaluation frameworks, which severely hinder the organic integration of educational, talent, industrial, and innovation chains. This paper examines the theoretical logic and practical dilemmas of higher education management system reform through the lens of industry-education integration. It analyzes key reform dimensions such as governance restructuring, operational mechanism innovation, evaluation system redesign, and support system enhancement. The study advocates breaking away from traditional administrative dominance to establish a collaborative governance framework featuring government coordination, industry guidance, enterprise participation, and university-led initiatives. It proposes institutional innovations to stimulate enterprises' intrinsic motivation for educational participation and establish market-driven resource allocation mechanisms. Simultaneously, it calls for reforming the single-academic-oriented evaluation system to adopt diversified criteria emphasizing contribution and adaptability. This research aims to provide theoretical support and practical references for deepening higher education management reforms, enabling precise alignment between educational supply and industrial demands, and cultivating more high-quality applied, interdisciplinary, and innovative talents.

Keywords: industry-education integration; higher education; management system; governance structure; operational mechanism; evaluation system

Online publication: February 26, 2026

1. Introduction

As the global economic landscape undergoes profound restructuring and China's economy enters a new normal, industrial upgrading has raised higher demands on human resource supply. Higher education, serving as the convergence point of technological productivity, talent resources, and innovation drivers, directly impacts national core competitiveness through its talent cultivation quality. Industry-education integration, acting as a bridge between educational and industrial systems, represents the fundamental solution to structural contradictions between talent supply and industrial demand. In recent

years, China has issued policy documents including “Several Opinions on Deepening Industry-Education Integration” and “National Pilot Implementation Plan for Industry-Education Integration,” elevating this initiative to a national strategy and clarifying its pivotal role in socioeconomic development. However, despite the continuous release of policy dividends, the lagging management system in higher education has increasingly become a bottleneck constraining the in-depth development of industry-education integration.

The traditional higher education management system is deeply rooted in planned economy characteristics and administrative features, resulting in limited institutional autonomy, closed governance structures, and sluggish responsiveness to market demands. On one hand, universities often prioritize disciplinary logic over industrial needs in program design, curriculum development, and faculty recruitment, creating a disconnect between talent cultivation and market requirements. This has led to frequent occurrences of “graduates facing unemployment” and “labor shortages” coexisting. On the other hand, enterprises, as key employers and innovators, show low participation enthusiasm in education due to inadequate compensation mechanisms and legal protections, resulting in a passive “hot schools, cold enterprises” scenario. Furthermore, the current evaluation system overemphasizes academic metrics like research papers and projects while neglecting practical indicators such as technology transfer, commercialization, and social training, exacerbating homogenization and impractical tendencies in university development.

Therefore, under the perspective of industry-education integration, re-examining and reforming the management system of higher education is not only an inherent requirement for the development of education itself, but also an inevitable choice to adapt to the economic and social development of the new era. This requires starting from top-level design, breaking down departmental barriers and entrenched interests, restructuring the power and responsibility relationships among multiple stakeholders such as the government, universities, enterprises, and industries, and establishing a modern university system that adapts to the laws of the market economy and the development of education. This paper aims to explore the core issues and implementation paths of the reform of the higher education management system under the background of industry-education integration through a combination of theoretical analysis and practical exploration, in order to provide beneficial insights for building a higher education system with Chinese characteristics and world-class standards.

2. The realistic dilemma of higher education management system in the process of industry-education integration

Although the idea of industry-education integration has been deeply rooted in people’s hearts, there are still many institutional obstacles in the concrete management practice, which are rooted in the traditional administrative management mode and the single school-running system, and hinder the free flow and efficient allocation of educational elements and industrial elements.

2.1. The imbalance of governance structure and the blurred boundary of power and responsibility

Under the current higher education management system, the government continues to act as an “omnipotent” regulator, excessively interfering in the day-to-day operations of universities. Meanwhile, industry organizations and enterprises, as key stakeholders, are marginalized in governance structures, lacking substantive decision-making power. Most university boards of directors remain formalities, with corporate representatives often serving only symbolic roles, unable to genuinely participate in core decisions such as institutional development plans, program offerings, and talent cultivation strategies. This structural imbalance creates information asymmetry between academia and industry: universities remain unaware of the latest technical standards and evolving talent demands, while enterprises lack understanding of academic teaching methodologies and research potential. Additionally, blurred boundaries of authority and responsibility between institutions and enterprises lead to frequent buck-passing during collaborations. For instance, when jointly establishing training bases, unclear definitions of equipment investment, maintenance costs, and safety liabilities often result in

unsustainable projects. Furthermore, industry associations fail to fully leverage their roles in standard-setting and quality certification, failing to effectively bridge the gap between government and academia. This leaves industry-education integration without robust sectoral guidance or regulatory frameworks.

2.2. The rigidity of resource allocation mechanism and the lack of market orientation

The allocation of higher education resources has long relied on administrative directives and fiscal allocations, with market mechanisms playing an insufficient role in resource distribution. In terms of funding, government budgets are primarily allocated based on traditional indicators such as student enrollment and academic disciplines, lacking targeted support for industry-education integration outcomes. This results in universities lacking motivation to proactively align with corporate needs. Regarding faculty allocation, current personnel management systems strictly restrict two-way mobility between university teachers and corporate technicians. University faculty promotions mainly depend on academic papers and research projects, while corporate internships are often perceived as "diverting attention from core responsibilities" and face multiple obstacles in securing permanent positions, salaries, and professional title evaluations. Conversely, high-skilled professionals from enterprises entering academia encounter rigid barriers like educational qualifications and professional titles, making it difficult to obtain formal positions and corresponding benefits. This rigid resource allocation mechanism has led to a severe shortage of dual-qualified teachers, causing teaching content updates to lag behind industrial development. In terms of research resources, university research topics often stem from academic interests or vertical project guidelines, disconnected from urgent technical challenges in enterprises. A large number of research achievements remain shelved with low conversion rates. The lack of market orientation prevents educational resources from flowing to where they are most needed, resulting in significant resource waste and efficiency losses.

2.3. The single evaluation and assessment system and the deviation of value orientation

Evaluation serves as a guiding principle, yet the current education assessment system severely hinders the deep integration of industry and education. Existing evaluations of universities, academic rankings, and faculty assessments predominantly adhere to standards for research-intensive institutions, overemphasizing metrics like SCI-indexed publications, national research grants, and academic awards while neglecting social relevance of talent development, contributions to technological services, and economic returns from research commercialization. This "paper-only, title-only, degree-only, award-only" evaluation paradigm compels universities and scholars to focus solely on academic output, leaving little room for industry-education collaboration. Enterprises participating in university-industry partnerships face inadequate social responsibility evaluation systems and incentive policies, resulting in unreasonably low returns on educational investments and potential short-term economic losses, which dampens their enthusiasm. Furthermore, student evaluations predominantly emphasize theoretical knowledge assessment while overlooking practical skills, professional ethics, and innovative thinking, leading to insufficient hands-on capabilities and problem-solving skills. Such singular value orientation confines industry-education integration to superficial formalities like contract signings and plaque displays, failing to address the core issues of talent cultivation reform.

3. Reform path of higher education management system from the perspective of industry-education integration

In the face of the above difficulties, we must promote the reform of higher education management system with systematic thinking, break the institutional barriers through institutional innovation, build a multi-party collaborative governance ecology of government, university, enterprise and society, and stimulate the endogenous motivation of all parties to participate in the integration of industry and education.

3.1. Reconstructing the multi-stakeholder collaborative governance structure and decision-making mechanism

The primary task of reform is to break the traditional pattern where the government monopolizes all aspects, establishing a diversified collaborative governance structure characterized by "government coordination, industry guidance, corporate participation, and school autonomy." The government should transform its role from "providing education" to "managing education" and "serving education," primarily through macro-regulation via planning guidance, policy support, and supervision evaluations. It should delegate school autonomy, granting universities greater flexibility in areas such as program establishment, personnel management, and fund utilization. Simultaneously, the status of industries and enterprises in governance must be substantially enhanced. Universities should establish and improve council or board systems composed of government departments, industry experts, corporate executives, and school representatives, empowering them with decision-making authority and advisory rights in strategic planning, major project development, and talent cultivation program approval. A regular school-enterprise dialogue mechanism should be established, with periodic industry-education integration joint meetings to jointly analyze industrial trends and dynamically adjust program layouts. Additionally, third-party industry organizations should be vigorously cultivated and empowered to conduct professional accreditation, quality assessment, and standard formulation, serving as bridges and regulators in industry-education integration. This will create a new governance framework featuring coordinated efforts among government, industry, enterprises, and schools, where each party fulfills its responsibilities and collaborates efficiently.

3.2. Innovation of flexible and open operation and resource allocation mechanism

Establishing a flexible and open operational mechanism that meets market economy requirements is key to revitalizing industry-education integration. In personnel systems, we should break down identity barriers by adopting a "fixed position + rotating position" model, creating roles like "industry professors" and "special-appointed experts" to facilitate the flow of highly skilled talents from enterprises into academia. Implementing a regular enterprise practice system for faculty, with corporate experience becoming a mandatory requirement for professional title evaluation, along with corresponding compensation and performance incentive mechanisms, encourages teachers to bring projects to enterprises and bring technologies back to classrooms. In resource allocation, market competition mechanisms should be introduced, exploring performance-based fiscal allocation systems and establishing special funds for industry-education integration to reward outstanding universities and enterprises. Universities and enterprises should collaborate to establish mixed-ownership secondary colleges, industrial colleges, or R&D centers, exploring equity diversification reforms with clear ownership and profit-sharing mechanisms to achieve shared risks and benefits. In research management, reforming project approval and technology transfer mechanisms encourages joint applications for major scientific projects, establishing market-oriented evaluation systems for technology transfer, simplifying approval processes, increasing researchers' income from technology transfer, and stimulating innovation and entrepreneurship among faculty and students.

4. Guarantee strategies and practice outlook of deepening the reform of higher education management system

The vitality of the system lies in its implementation. To ensure the effective implementation of the reform of higher education management system under the perspective of industry-education integration, it is necessary to build a comprehensive safeguard system and continuously explore innovative models in practice.

4.1. Strengthening the rule of law and policy coordination

A robust legal framework serves as the cornerstone for successful reform implementation. It is imperative to expedite the revision of key legislation including the Higher Education Law and Vocational Education Law, which should explicitly define enterprises' primary role and legal responsibilities in talent cultivation. Detailed provisions must be established

regarding the rights, obligations, property rights, and risk-sharing mechanisms between educational institutions and enterprises in cooperative programs, ensuring that industry-education integration is legally grounded. Concurrently, systemic policy coordination must be strengthened. The education authorities should collaborate with departments such as development and reform, finance, human resources and social security, taxation, and industry and information technology to establish a joint working mechanism, effectively addressing the "last mile" challenge in policy implementation. For instance, tax authorities must rigorously enforce tax incentives for corporate participation in vocational education, while financial departments should optimize the management of special funds. The human resources and social security authorities should refine the evaluation system for skilled professionals and establish a seamless career progression mechanism. Through coordinated policy efforts, institutional transaction costs can be eliminated, creating a favorable external environment for reform advancement.

4.2. Building a digital information platform and resource sharing network

Leveraging modern information technologies including big data, cloud computing, and artificial intelligence, we will establish a national and regional industry-education integration information service platform. This platform will aggregate massive datasets encompassing industrial talent demand forecasts, university program distributions, corporate technical challenges, academic research achievements, and internship opportunities, enabling precise matching and intelligent recommendation of supply-demand information. Through this platform, enterprises can publish technical requirements and hiring criteria, universities can showcase their research accomplishments and talent development strengths, while students can access personalized career planning guidance.

4.3. Cultivating typical models and cultural identity

Reform requires the power of role models and cultural support. Nationwide, we should select universities and enterprises with solid foundations, strong commitment, and proven achievements to establish industry-education integration cities and pilot units. We must summarize and promote replicable and scalable best practices, such as modern industrial colleges and school-enterprise community models. Through media campaigns, experience-sharing, and on-site demonstrations, we should effectively communicate the success stories of industry-education integration, fostering a social atmosphere that values skills, respects labor, and encourages innovation. Simultaneously, we need to cultivate an integration culture within universities and enterprises, breaking down the cultural divide between "ivory towers" and "production lines." By advocating the organic combination of craftsmanship and innovation, we can make industry-education integration a conscious choice for both faculty and students, as well as a strategic priority for enterprises.

5. Conclusion

Looking ahead, with the continuous deepening of the management system reform, China's higher education will be more closely integrated into the overall economic and social development. A modern higher education governance system will gradually take shape, featuring strong government macro-management, effective market resource allocation, orderly school autonomy, and extensive social participation. This will not only greatly enhance the overall strength and international competitiveness of China's higher education but also provide strong talent support and intellectual backing for the comprehensive building of a modern socialist country. The integration of industry and education will undoubtedly usher in broader prospects, becoming a powerful engine for promoting the modernization of China's education and the high-quality development of industries.

Disclosure statement

The author declares no conflict of interest.

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