Innovation Practice Education for International Students in China: Challenges and Strategies

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Abstract: Driven by the "Educational Powerhouse" strategy and the deepening internationalization of higher education, education for international students in China is transitioning from scale expansion to quality-driven, intensive development. Innovation practice education, serving as a critical nexus for knowledge acquisition, capability cultivation, and cultural identity, plays a pivotal role in enhancing training quality and global educational influence. However, a systematic review of the current landscape reveals that universities face structural challenges, including a misalignment between educational supply and diverse student demands, uneven resource allocation, insufficient cross-cultural support, and lagging evaluation mechanisms. To address these issues, the PDCA (Plan-Do-Check-Act) cycle theory is utilized to construct a comprehensive improvement framework. Strategies are proposed involving differentiated supply design, multi-stakeholder collaborative resource allocation, and reinforced process evaluation. It is argued that these measures effectively facilitate the transition of innovation practice education from fragmented exploration to systematic, sustainable development. Ultimately, this study provides an analytical framework with theoretical and practical implications for enriching the "Study in China" brand and advancing the construction of an educational powerhouse.

***Keywords*:** innovation practice education; international students in China; PDCA cycle; quality assurance

1. Introduction

In the macro-context of advancing Chinese modernization and building an education powerhouse, education, science, and technology have been placed at a strategic height of synergistic development. As a vital component of the opening-up of education, education for international students in China is undergoing a critical transition from scale expansion to connotative development. [1]The Plan for Building an Education Powerhouse (2024–2035) further clarifies the need to "expand an open and mutually learning international cooperation system, strengthen the 'Study in China' brand, and improve the training quality of international students." This marks a comprehensive shift in education for international students from a stage of scale expansion to a new stage centered on "quality improvement and connotative development." In this process, innovation practice education, serving as a key bridge connecting knowledge learning with social application, and capability cultivation with cultural identity, is becoming increasingly prominent. It is not only an important pathway for enhancing the global competence and innovation and entrepreneurship capabilities of international students but also a key lever for cultivating international talents with cross-cultural understanding and global competence, thereby enhancing the international competitiveness of China's higher education.

However, a scrutiny of current educational practices reveals that the development of innovation practice education still lags behind national strategic needs and the personal growth expectations of international students. Although some universities have carried out beneficial explorations, overall, there remain multiple dilemmas such as vague goal positioning, fragmented curriculum systems, scattered platform resources, shallow industry-education integration, and rigid evaluation mechanisms. These issues result in ineffective cultivation of international students' innovation practice abilities, making it difficult to meet the urgent demand for top-notch innovative international talents under the "Education Powerhouse" strategy. Therefore, systematically diagnosing current dilemmas and designing scientific, operable improvement paths is an urgent priority for promoting the connotative development of education for international students.

The PDCA cycle theory emphasizes achieving spiral improvement in work through the continuous closed loop of "Plan — Do — Check — Act" . [2]Its systematic, dynamic, and feedback optimization characteristics provide a suitable theoretical framework for building an innovation practice education system with self-improvement capabilities. This paper aims to integrate historical context, realistic scrutiny, and problem analysis, using the PDCA cycle as a theoretical perspective to systematically explore improvement paths for innovation practice education for international students in universities,

thereby providing a solution with both theoretical depth and practical validity for building a high-quality study abroad education system.

2. Development Evolution and Current Landscape of Innovation Practice Education for International Students

2.1 Historical Context: Functional Transformation from Diplomatic Auxiliary to Strategic Pillar

Education for international students in New China has undergone over seventy years of development. Its functional positioning and educational focus have continuously evolved with national development strategies and the process of opening up, roughly divided into four stages:

Initial Exploration Period (1950–1978): In the early days of the People's Republic of China, education for international students was primarily positioned to serve the overall situation of national foreign exchanges, presenting distinct characteristics of "unidirectional aid." [3]During this period, constrained by the international environment and domestic higher education resources, the training of international students focused mainly on language advancement and professional crash courses, with a highly centralized and single teaching model. The practice education segment had not yet formed an independent pedagogical significance during this period; it served more as an auxiliary means for professional learning, with its educational function in a latent budding state. The training goal focused on enhancing international understanding and cultural exchange.

Recovery and Development Period (1979–1999): The wave of reform and opening up promoted a substantial unbundling of policies regarding education for international students. Self-funded students rapidly rose to become the main body, and the landscape of source countries and major choices became increasingly rich. [4]Although universities were granted more autonomy in enrollment and management and began attempting personalized schooling paths, the educational paradigm of that time had not yet fully escaped the traditional inertia of "knowledge-based" education — practice links had sprouted but appeared scattered and weak due to a lack of systematic design, failing to be truly embedded into the core architecture of talent training.

Rapid Expansion Period (2000–2011): [5]China's accession to the WTO injected strong impetus into the internationalization of higher education, and the scale of studying in China saw explosive growth, breaking the 290,000 mark by 2011 . [6]During this period, institutional construction followed closely; the promulgation of the Regulations on the Administration of Acceptance of Foreign Students by Institutions of Higher Education marked the entry of international student management into a standardized track . [7]With the significant climb in the proportion of degree students and the continuous enhancement of the attractiveness of graduate education, the student base and institutional framework required for practice education had initially taken shape; however, constrained by the development focus of that time, innovation practice had not yet been truly embedded into the core chain of talent training and remained in an accumulation stage ready to spring into action.

Connotative Improvement Period (2012–Present): Entering the new era, with the in-depth advancement of the "Belt and Road" Initiative and the implementation of the education powerhouse strategy, education for international students in China has reached a critical node of structural transformation. The policy orientation has shifted from "scale expansion" to "quality improvement and efficiency enhancement," which is not merely an iteration of numbers but a fundamental change in the educational paradigm. Against this backdrop, innovation practice education has gradually leaped from a marginalized "second classroom" to a core element of the talent training system, becoming an important indicator for measuring the quality of education for international students and the level of international schooling. Universities have begun exploring the deep integration of innovation practice into the professional education system, marking the entry of this field into a new stage led by quality connotation construction.

2.2 Current Status Scrutiny: A Complex Pattern of Coexisting Achievements and Shortcomings

Although education for international students in China has a large volume and optimized structure, the development of its innovation practice education remains unbalanced and insufficient.

Educational Supply: The system is initially established but lacks depth. The absence of top-level design has led to a "tokenistic" approach in practice education, disconnected from professional curricula. Teaching content prioritizes theory over practice, and there is a severe scarcity of faculty possessing both industrial experience and cross-cultural capabilities.

Student Participation: Channels have widened, but outcomes are differentiated. Pathways for international students to participate in innovation competitions (e.g., the "Internet+" international track), university-enterprise projects, and social practice have increased. However, participation rates and depth are generally insufficient, and performance varies

significantly due to diverse student backgrounds. Language barriers (especially in Chinese-taught programs), cultural adaptation pressures, differences in home-country education models (e.g., students from some African and Central Asian countries are accustomed to exam-oriented education and are unfamiliar with project-based learning), and difficulties in cross-cultural team collaboration lead to their easy marginalization in teams, making it hard to unleash their innovation potential.

Collaborative Ecosystem: The mechanism is fragile, and cooperation is shallow. University-enterprise and university-local cooperation mostly remains at the level of observation visits and short-term internships. Enterprises lack the motivation and mechanisms for deep participation in curriculum co-construction and project R&D. The "government-industry-academia" triple helix structure for collaborative education is not yet solid, and resource integration efficiency is low.

According to a 2025 survey of 200 STEM international students at a "World-Class" university in Southwest China, 60% of respondents indicated that they "could not accurately express innovative ideas due to language barriers," while in cross-cultural team projects, the proportion of international students serving as core persons in charge (team leaders) was only 10%, far lower than that of domestic students. In interviews, a student from a South Asian country frankly stated: "We really want to participate in innovation and entrepreneurship competitions, but the interpretation of competition rules and roadshow coaching are all aimed at Chinese students; it's like listening to a foreign language to us, and in the end, we can only give up." Such "hidden thresholds" directly weaken students' willingness to participate.

In summary, while innovation practice education for international students in universities has achieved a "breakthrough from zero," it is far from "systematically mature." Its supply quality, participation effects, and collaboration levels show a significant gap compared to the strategic goal of cultivating top-notch innovative international talents.

3. Deep-seated Dilemmas: Structural Contradictions Restricting High-Quality Development

Based on the analysis of the current situation, the core dilemmas facing innovation practice education for international students in universities involve multiple deep-seated structural contradictions, which have become key factors restricting the improvement of educational quality and the release of educational efficacy.

First, there is a structural mismatch between the educational supply system and the diverse needs of international students. [7]Most universities still focus on domestic students in the design of innovation practice education. Curricula and projects related to international students often appear as "subsidiary" or "supplementary" features, lacking systematic design based on their professional development, language abilities, and cultural backgrounds. The unified and standardized curriculum and project models fail to effectively respond to the significant differences in practical abilities, learning styles, and participation expectations of international students from different countries and educational backgrounds. This results in a situation where some students have "platforms but struggle to integrate" and "projects but struggle to delve deep," indicating insufficient pertinence and effectiveness of educational supply.

Second, uneven resource allocation and restricted platform openness limit the fairness of practice opportunities. There is a significant gap in innovation practice platforms, financial support, tutor resources, and international teaching capabilities between "World-Class" universities and ordinary universities. Key universities can provide international students with research projects, incubation platforms, and competition channels, while some local institutions are constrained by conditions where practice activities mostly remain at the level of observational experiences or short-term participation, making it difficult to form a continuous training chain. This structural imbalance objectively exacerbates the differentiation in opportunities and quality of innovation practice education for international students.

Third, the weak language and cross-cultural support system amplifies the hidden barriers in the participation process. Although the number of bilingual courses and English-taught programs is gradually increasing, language support, cross-cultural guidance, and team collaboration mechanisms remain insufficient in most practice links. International students are easily marginalized in projects due to limited expression, cultural differences, or psychological adaptation issues, preventing their innovation potential from being fully utilized. This issue essentially reflects the structural shortcomings of universities in terms of faculty internationalization level, cross-cultural teaching capabilities, and institutional inclusivity.

Furthermore, lagging evaluation and incentive mechanisms weaken the internal driving force for practice-based education. Currently, the effectiveness assessment of innovation practice education for international students mostly remains at the level of participation numbers or displayed outcomes. There is a lack of a unified data monitoring system and process evaluation standards, and the linkage mechanism between practice performance and scholarship evaluation, academic development, and employment support is not yet perfect. This makes the expected returns of continuous deep participation unclear for some international students, affecting their input and stability.

Finally, there is a disconnection between institutional design and operational mechanisms. While the policy level continuously emphasizes the cultivation of international innovative talents, specific implementation lacks clear norms and collaborative mechanisms in project selection, tutor matching, fund usage, and achievement transformation. This makes it difficult to effectively convert policy dividends into stable and sustainable practice education outcomes.

Overall, innovation practice education for international students faces not a single-level deficiency but a structural dilemma formed by the interweaving of multiple factors such as supply models, resource allocation, cultural support, and institutional mechanisms. Resolving these contradictions requires universities to shift from "homogeneous management" to "differentiated support," and from "formal participation" to "deep integration," promoting high-quality and connotative development through systematic reform.

4. Systematic Response: Improvement Paths Based on the PDCA Cycle

The enhancement of innovation practice education for international students in universities urgently needs to shift from "fragmented improvement" to "systematic reconstruction." PDCA cycle theory, with its governance logic emphasizing goal orientation, process control, and continuous improvement, provides an operable analytical framework for solving the aforementioned problems. Based on this, this paper constructs a systematic improvement scheme with the main line of "Plan Optimization — Collaborative Implementation — Monitoring & Evaluation — Feedback & Adjustment," achieving item-by-item response and overall repair of structural problems.

4.1 Plan: Reshaping the Supply Model with a Differentiation Orientation

Addressing the structural mismatch between current innovation practice education supply and the diverse needs of international students, universities urgently need to transition from "homogeneous supply" to "precision supply" in the top-level design stage.

First, clarify stratified and classified training goals for innovation practice education. Universities should formulate differentiated capability training goals based on the training level (undergraduate, graduate), professional attributes (engineering technology, humanities and social sciences, interdisciplinary), and language background, avoiding the simple transplantation of domestic student training plans to international student groups. On this basis, innovation practice capability should be explicitly incorporated into the core indicator system of the talent training plan for international students, elevating it from a "subsidiary requirement" to a "rigid training goal."

Second, reconstruct a supply system featuring deep integration of curriculum and practice. Design "Professional Practice Module — Interdisciplinary Innovation Module — China Context Application Module" through modularization, promoting the transition of innovation practice from extracurricular activities to embedded curricular system. In particular, introduce Project-Based Learning (PBL) oriented towards real-world problems, guiding international students to achieve synergistic improvement of professional capabilities and innovation capabilities in the process of solving practical problems in China.

Finally, synchronize the improvement of faculty and capability support design in the planning stage. Configure faculty with cross-cultural teaching capabilities and industrial experience in advance around innovation practice education needs. Enhance teachers' understanding of the characteristics of international students' innovative learning through training and certification, avoiding formalistic supply where there are "projects without guidance."

4.2 Do: Optimizing Resource Allocation through Collaborative Linkage

In the execution stage, the focus is on addressing uneven resource allocation and insufficient platform openness, promoting the transition of resources from "scattered possession" to "collaborative sharing."

First, build a multi-subject collaborative practice platform operation mechanism. Universities should actively link with local governments, industry enterprises, and research institutions to build innovation practice platforms open to international students around regional leading industries and national strategic needs. By jointly publishing project demands and sharing experimental conditions and practice scenarios, international students can participate in real, continuous innovation practice processes rather than just observation visits.

Second, enhance the openness and accessibility of innovation practice platforms. Clarify the equal participation rights of international students in university-level research projects, innovation competitions, and entrepreneurship incubation platforms through institutional design, reducing hidden thresholds caused by identity differences. Simultaneously, utilize digital platforms to unify the release, application, and matching of practice projects, reducing the restrictions on international students' participation opportunities due to information asymmetry.

Third, promote the transformation of university-enterprise cooperation from "shallow participation" to "process embedding." During practice execution, guide enterprises to shift from providing internship positions solely to deeply

participating in project design, process guidance, and outcome evaluation, enabling international students to complete the complete innovation chain from problem identification to solution implementation in real industrial contexts.

4.3 Check: Strengthening Cultural Support and Learning Experience through Process Evaluation

Addressing hidden barriers caused by language barriers and insufficient cross-cultural adaptation, the Check stage should dynamically diagnose the participation status of international students in innovation practice through systematic monitoring and process evaluation.

First, construct a multidimensional evaluation system covering capability development and cultural integration. In setting evaluation indicators, besides focusing on innovation outcomes, synchronize the examination of international students' performance in teamwork, cross-cultural communication, and problem-solving, avoiding the neglect of the learning process due to a single outcome orientation.

Second, strengthen formative evaluation and immediate feedback mechanisms. Continuously track the learning experience and difficulties of international students during practice through stage reports, tutor comments, and peer evaluations, timely identifying issues such as insufficient language support, cultural conflicts, or role marginalization.

Third, emphasize the feedback function of evaluation results in cultural support. Through the analysis of evaluation data, summarize the common obstacles of international students from different countries and backgrounds in practice participation, providing a basis for subsequent improvement of language support, cross-cultural training, and psychological counseling, shifting cultural support from "experience judgment" to "evidence-driven."

4.4 Act: Promoting Continuous Improvement through Institutional Linkage

In the Act stage, the focus is on addressing the disconnection between institutional design and operation, driving institutional perfection through evaluation results to achieve a spiral enhancement of innovation practice education.

First, improve the institutional incentive mechanism for innovation practice outcomes. Link international students' innovation practice performance with key institutional links such as annual scholarship review, academic evaluation, and employment recommendation to enhance their internal motivation for continuous participation. Simultaneously, clarify the weight of practice outcomes in credit recognition and graduation requirements to increase the binding force of institutional incentives.

Second, establish a cross-department collaborative governance mechanism. Establish a coordination mechanism involving international affairs departments, academic affairs departments, research departments, and student management departments to break down fragmentation and ensure institutional consistency in project setting, resource usage, and outcome recognition.

Third, promote institutional optimization into the next PDCA cycle. Incorporate the institutional adjustment results formed in the Act stage into the top-level design of the new round of Plan stage, enabling innovation practice education to achieve structural optimization and quality leap in the continuous "evaluation — adjustment — re-implementation" process.

This improvement scheme based on the PDCA cycle has its core value in building a self-evolving ecosystem. It is not a scattered repair of treating the head when the head aches, but integrates supply optimization, resource sharing, cultural support, and institutional guarantees. Through the continuous "evaluation — adjustment — re-implementation" cycle, it ensures that the innovation practice education system can constantly adapt to new challenges, achieving a leap from quantitative change to qualitative change.

5. Conclusion and Outlook

In the context of the "Educational Powerhouse" strategy, a systematic improvement path integrating goal planning, practice execution, and evaluation optimization is constructed by applying PDCA cycle theory to address the structural dilemmas in innovation practice education for international students. This framework dismantles the fragmentation of educational elements, integrating supply, resources, culture, and institutions to foster a self-evolving ecosystem that transforms cultural diversity into an innovation advantage. The implementation of this mechanism is expected to enhance the global competence of international students, empower the "Study in China" brand, and contribute Chinese perspectives to global education governance. Future research should be directed toward the school-based adaptation of the model and the construction of long-term mechanisms to address practical challenges such as collaborative governance, thereby promoting high-quality educational development.

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