A Historical Review, Path Choices, and Future Prospects of Building World-Class Universities in China

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Abstract
In the context of intensifying global competition and knowledge-driven economic development, the construction of world-class universities has become a central pillar of China's national strategy. The comprehensive performance of higher education in research, talent cultivation, social service, and cultural development is widely regarded as a key indicator of national competitiveness. This study systematically examines the historical evolution of China's world-class university construction, aiming to identify its major strategic pathways, stage-based transformations, and emerging characteristics. Drawing on literature review and policy analysis, the paper analyzes a series of landmark national initiatives, including Project 211, Project 985, the 2011 Plan, and the Double First-Class Initiative. The findings reveal that China's approach is marked by strong state leadership, targeted support for key institutions and disciplines, sustained financial investment, and an increasing emphasis on quality and performance. Over time, the development model has shifted from qualification-based allocation to performance-oriented governance, from inward institutional strengthening to coordinated internal external development, and from reliance on Western evaluation standards to a framework incorporating Chinese characteristics. The study argues that China's experience demonstrates a distinctive state-led model of world-class university construction, offering both strategic clarity for future reform and comparative insights for global higher education development.

Keywords: World-class universities; Higher education policy; Project 211; Project 985; Double first-class initiative

Introduction

Higher education is a core driving force for scientific and technological innovation, talent cultivation, and cultural transmission, and it also serves as an important benchmark for measuring a country's comprehensive strength and level of modernization. A review of modern world development shows that the rise of major Western powers has been closely associated with the prosperity of their higher education systems, while successive shifts in the global center of higher education have profoundly influenced changes in the international order. In the era of the knowledge economy and intensifying global competition,

building world-class universities has become a strategic consensus among countries seeking to enhance national competitiveness.

As a major developing country, China has experienced rapid economic and social development since the reform and opening-up period, generating an increasingly urgent demand for high-quality talent and scientific innovation. Building world-class universities is not only an intrinsic requirement for enhancing national scientific and technological strength and cultural soft power, but also an important component of realizing the "Chinese Dream" of national rejuvenation. From Project 211 to the Double First-Class Initiative, China has continuously promoted key higher education development at the national level, gradually forming a development pathway with distinctive Chinese characteristics. This paper aims to systematically review the historical process of China's efforts to build world-class universities, analyze policy evolution and path choices, summarize experiences and shortcomings, and offer prospects for future development.

Project 211 was the first national-level key construction initiative in China's higher education sector. Its emergence was closely related to major adjustments in national development strategies in the early 1990s. With the deepening of reform and opening-up and the preliminary establishment of a market economy, China's economic and social development increasingly demanded high-level talent and scientific innovation. At the same time, global scientific competition and the rise of the knowledge economy made higher education a critical pillar of national comprehensive strength. Against this background, the former State Education Commission began planning a higher education development program oriented toward the 21st century in 1990. After years of deliberation and preparation, the State Council officially approved the "Overall Construction Plan for Project 211" in 1995, marking the full launch of the initiative.

Project 211 derives its name from its objective: "facing the 21st century, focusing on the construction of approximately 100 higher education institutions and a group of key disciplines." In practice, 112 universities were included. Centered on discipline development and supported by improvements in institutional conditions and public higher education service systems, the project aimed to enhance the comprehensive strength and disciplinary capacity of selected universities through concentrated investment and targeted breakthroughs, thereby driving the overall development of higher education in China (Zhou Yuanqing, 2003). During implementation, Project 211 gradually formed a funding mechanism characterized by "joint construction by central and local governments, with local governments taking the lead," and introduced management tools such as project evaluation, mid-term inspections, and performance assessments, enhancing the scientific and effective allocation of resources.

In terms of outcomes, Project 211 significantly improved the educational and research capacity of participating universities. In discipline development, a number of key disciplines developed rapidly, with some fields approaching or reaching internationally advanced levels. In talent cultivation, graduate education expanded in scale and improved in quality, supplying the nation with a large number of high-level professionals. In scientific research, universities' capacity to undertake major national research projects increased substantially, and technology transfer and social service functions were strengthened (Chen

Xuefei, 2004). In addition, Project 211 promoted preliminary reforms in university governance and management mechanisms, stimulating institutional vitality and autonomy.

Project 985 represents a critical step in China's higher education development. Its origin is closely linked to the strategic repositioning of higher education at the turn of the century. On May 4, 1998, then President Jiang Zemin stated at Peking University's centennial celebration that "in order to achieve modernization, China must have a number of world-class universities." This marked the first time that building world-class universities was elevated to a national strategic level. In 1999, the State Council approved the Ministry of Education's "Action Plan for Education Revitalization in the 21st Century," formally launching Project 985.

Project 985 aimed to build world-class universities by providing intensive, concentrated support to 39 centrally administered universities, including Peking University and Tsinghua University. Its core construction focused on four aspects: advancing institutional and governance reform, strengthening faculty development, building high-level research platforms and innovation bases, and enhancing international cooperation and exchange. Compared with Project 211, Project 985 placed greater emphasis on "elite breakthroughs" and "international competitiveness," coordinating funding, policy support, and evaluation mechanisms to cultivate globally competitive higher education leaders.

In terms of outcomes, Project 985 significantly enhanced the overall strength and international influence of participating universities. Between 2000 and 2015, key indicators such as research funding, high-impact publications, and national science and technology awards increased dramatically (Li Liguo, 2016). These universities became the main base for graduate education and elite talent cultivation, supplying the nation with large numbers of high-level professionals with global perspectives. In discipline development, several disciplines entered the top ranks of global evaluations, with some fields transitioning from "catching up" to "keeping pace" or even "leading" (Zhou Guangli, 2015). Moreover, Project 985 promoted governance reform and industry university research collaboration, strengthening universities' capacity to serve national strategies.

The 2011 Plan, formally known as the "Higher Education Innovation Capacity Enhancement Plan," marked China's transition from key construction to collaborative innovation. On April 24, 2011, President Hu Jintao emphasized the importance of collaborative innovation at Tsinghua University's centennial celebration. In May 2012, the Ministry of Education and the Ministry of Finance jointly issued policy documents formally launching the plan.

The 2011 Plan aimed to break institutional barriers between innovation actors by promoting deep collaboration among universities, research institutes, enterprises, local governments, and international partners. It established collaborative innovation centers oriented toward scientific frontiers, industrial development, regional needs, and cultural innovation. In 2013, 14 national-level collaborative innovation centers were recognized in the first round (Zhao Qinping, 2013).

The plan effectively integrated innovation resources, gathering thousands of high-level scholars and hundreds of enterprises into cross-disciplinary, cross-regional innovation networks (Chen Jin, 2014). These centers produced internationally influential research outcomes in areas such as quantum communication and advanced manufacturing, while also driving reforms in personnel evaluation, research organization, and long-term funding mechanisms (Li Tuoyu et al., 2015). Strategically, the 2011 Plan provided a new paradigm by combining national needs with academic excellence, promoting open collaboration and innovation-driven development.

The Double First Class Initiative referring to the development of world-class universities and first-class disciplines represents a core milestone marking China's higher education key development strategy entering a new stage of comprehensive deepening and systematic advancement. In October 2015, the State Council officially issued the *Overall Plan for Coordinating the Development of World-Class Universities and First-Class Disciplines* (Guofa No. 64 (2015), which explicitly articulated a guiding principle centered on "socialist world-class standards with Chinese characteristics," oriented toward supporting the innovation-driven development strategy and serving economic and social development. Building upon earlier key initiatives such as Project 211 and Project 985, the plan aims to achieve connotative development and enhance overall system capacity by establishing a more open, dynamic, and competitive support framework.

Distinct from previous key construction programs, the Double First-Class Initiative emphasizes system-level design, dynamic adjustment, and equity in its institutional architecture. First, the scope of participation is no longer limited to a fixed group of elite universities; instead, a mechanism of classified support and rolling competition is adopted, allowing all higher education institutions to participate based on their disciplinary strengths. Second, a selection mechanism characterized by overall scale control, open competition, and dynamic adjustment is implemented, with five-year development cycles and periodic evaluations based on performance outcomes. Third, the initiative stresses the parallel advancement of construction and reform by incorporating institutional and governance innovation as a central component, promoting improvements in internal governance structures, deepening personnel system reform, and optimizing disciplinary ecosystems (Qu Zhenyuan, 2017). As of 2022, a total of 147 universities had been included in the Double First-Class Initiative, comprising 42 institutions designated for world-class university development and 105 institutions focused on first-class discipline development, covering all 31 provincial-level administrative regions in mainland China.

The implementation of the Double First-Class Initiative has produced significant outcomes across multiple dimensions. In terms of disciplinary development, the international influence of a number of leading disciplines has continued to increase. According to the 2023 QS World University Subject Rankings, universities in mainland China had 100 disciplines ranked among the global top 50, more than double the number in 2016. In scientific research and innovation, Double First-Class universities have significantly strengthened their capacity to undertake major national research tasks, producing internationally influential outcomes in areas such as fundamental research and key core technology development. In talent cultivation,

the initiative has promoted reforms in education and training models, including programs such as the Strong Foundation Plan and the Excellent Engineer Education Program, thereby reinforcing mechanisms for integrating education with research and for industry education collaboration (Zhou Guangli, 2021). Notably, the initiative has also accelerated the development of high-level local universities, enhanced regional coordination in higher education, and promoted greater diversity and differentiation within the higher education system.

Methodology

Path Selection: Concentrating Resources and Achieving Key Breakthroughs Through a Chinese-Style Development Model

National strategy oriented guiding principleFrom Project 211 serving the strategy of revitalizing the nation through science and education, to Project 985 supporting the construction of an innovation-oriented country, and further to the Double First-Class Initiative comprehensively aligning with national strategies such as innovation-driven development and cultural rejuvenation, the development of world-class universities has consistently functioned as a critical component of China's national strategic agenda. This strong coupling ensures that the direction of higher education development resonates with national priorities, positioning universities as core strategic scientific forces and primary bases for cultivating innovative talent (Ding Sanqing, 2018).

Breakthrough-oriented development through key construction

Under conditions of relatively constrained resources, China adopted an unbalanced development strategy characterized by "key construction to drive overall improvement." Through selective investment, Project 211 and Project 985 rapidly enhanced the institutional capacity and academic reputation of a group of universities, forming the "first tier" of the higher education system. Although this "supporting the strong and the excellent" approach initially intensified inter-institutional disparities, it objectively enabled China to cultivate a vanguard capable of competing in the global higher education arena and accumulated experience and resources for subsequent system-wide optimization (Hu Bingxian, 2017).

Discipline-centered development as the primary focal point.

Since Project 211 established the central role of disciplines, China's world-class university initiatives have consistently adhered to a discipline-oriented approach. Disciplines represent the intersection of talent cultivation, scientific research, and social service. Concentrated investment and development at the disciplinary level most effectively clarify research directions, assemble academic teams, and build institutional platforms. The Double First-Class Initiative further reinforces the foundational role of first-class disciplines by encouraging universities to strengthen existing strengths, support nationally needed fields, and cultivate emerging disciplines, thereby forming clusters of competitive disciplines that drive overall institutional advancement (Wang Jianhua, 2016).

Sustained Investment as A Make Sure Mechanism

Through dedicated funding programs and competitive research grants, central and local governments have provided sustained, high-intensity, and diversified resource inputs to key universities and disciplines. Such investment extends beyond improvements in physical infrastructure and includes mechanisms such as per-capita funding and performance-based incentives, supporting faculty development, reform of talent cultivation mechanisms, and optimization of academic ecosystems. These measures provide both a solid material foundation and institutional incentives for building world-class universities (Zhou Guangli, 2015).

Quality-oriented transformation toward connotative development.

As construction efforts deepened, policy priorities gradually shifted from early-stage expansion and condition improvement toward connotative development and quality enhancement. Evaluation criteria evolved from emphasizing quantitative indicators such as publication counts and research funding toward greater attention to originality, high-level talent cultivation outcomes, substantive contributions to major national needs, and cultural leadership. This shift marks China's entry into a new stage of pursuing excellence and cultivating distinctive institutional characteristics in world-class university development (Bie Dunrong, 2019).

Path Transformation: From Planning to Competition, From Closure to Collaboration, and From Imitation to Innovation

1. Development mechanism: from "status fixation" to open competition
   Under Project 211 and Project 985, the list of selected universities exhibited high stability and quasi-permanent status. The Double First-Class Initiative disrupted this fixed structure by introducing a mechanism characterized by overall scale control, open competition, and dynamic adjustment. Development eligibility is no longer a static identity label but a performance-based competitive status subject to periodic evaluation. This transformation introduces competition and mobility into key development policies, stimulates institutional initiative across the system, and creates an ecosystem characterized by both entry and exit (Chen Tingzhu, 2018).
2. Development model: from internal capacity building to collaborative innovation
   Early initiatives primarily focused on strengthening internal university capacities. The launch of the 2011 Plan marked a major conceptual shift, moving from isolated institutional development toward collaborative innovation systems integrating government, industry, academia, research institutions, and end users. The Double First-Class Initiative has continued and deepened this approach by encouraging universities to dismantle institutional barriers and actively engage in deep cooperation with research institutes, enterprises, local governments, and international innovation actors. This transformation has embedded universities more deeply into the national innovation system and enhanced their capacity to address major practical challenges and serve socioeconomic development (Li Liguo, 2016).

3. Evaluation standards: from international benchmarking to distinctive development
   In the initial phase, international university rankings and disciplinary evaluation indicators served as important reference points, promoting internationalization and standardization. However, excessive benchmarking also led to homogenization and a follower mentality. In recent years, policy emphasis has increasingly shifted toward developing universities rooted in China's national context. The Double First-Class Initiative explicitly integrates "Chinese characteristics" with "world-class standards," encouraging universities to form distinctive Chinese models, experiences, and evaluation standards in talent cultivation, scientific research, and cultural transmission, thereby contributing Chinese insights to global higher education development (Liu Zhentian, 2019).
4. System-level impact: from point-based breakthroughs to overall system enhancement
   While early key construction policies primarily yielded rapid improvements among a small number of elite universities, the Double First-Class Initiative expanded coverage through classified support, incorporating a large number of discipline-oriented local universities into the development framework. This shift has enabled policy benefits to extend more broadly across the higher education system, promoted diversity and ecological development, and fostered a landscape in which top universities pursue frontier excellence while specialized institutions develop distinctive strengths, thereby driving systematic improvements in overall quality (Zhang Yingqiang, 2020).

Results and Discussion

Major Achievements

1. Significant improvement in comprehensive institutional strength and global reputation
   The international rankings of China's leading universities have demonstrated systematic upward movement. Taking the QS World University Rankings as an example, in 2010 only three universities from mainland China were ranked among the global top 100; by 2023, this number had increased to six. Universities such as Tsinghua University and Peking University have achieved top-ten global rankings in multiple disciplines. Similar progress has been observed in other authoritative international rankings, including Times Higher Education (THE) and U.S. News. This progress reflects not merely numerical growth, but a comprehensive enhancement in educational quality, research output, and international recognition, indicating that Chinese universities have shifted from global "followers" to influential "participants" in higher education (Liu Niancai, 2019).
2. Leapfrog development in scientific research and innovation capacity
   Chinese universities have become core actors within the national innovation system. In major national science and technology awards, such as the National Natural Science Award and the

Technological Invention Award, universities consistently account for a high proportion of award recipients. High-quality research outputs have grown rapidly, with publication volumes in top-tier journals such as Nature and Science, as well as the number of highly cited papers, ranking among the world's leading countries. In frontier fields including quantum information, structural biology, aerospace engineering, and artificial intelligence, Chinese universities have achieved a series of original breakthroughs with global impact. Meanwhile, awareness and capacity for technology transfer have improved significantly through patent licensing and the establishment of university spin-off enterprises, effectively supporting industrial upgrading and economic transformation (Li Zhimin, 2021).

3. Initial formation of a system for cultivating top innovative talent
   Key development policies have driven profound reforms in talent cultivation models. Programs such as the Strong Foundation Plan and the Top Talent Training Plan have led to the establishment of training bases for outstanding students in fundamental disciplines and national colleges for excellent engineers. These initiatives have explored new models integrating education with research, promoting interdisciplinary collaboration, and enabling seamless undergraduate graduate training pathways. Graduates from Chinese universities have become increasingly competitive in the global labor market and top academic institutions, supplying large numbers of high-level leaders and backbone professionals across multiple sectors and providing strong talent support for national socioeconomic development (Zhong Binglin, 2018).
4. Continuous expansion in the scope and depth of higher education internationalization
   China's higher education system has shifted from a model dominated by "bringing in" to one that balances "bringing in" and "going out." Sino-foreign cooperative education programs have expanded rapidly, attracting many internationally renowned universities to collaborate in China. The quality and structure of international student education have improved, with a rising proportion of degree-seeking students. More importantly, Chinese universities have begun to proactively shape global agendas by leading or deeply participating in major international scientific programs and large-scale research projects. In areas such as engineering education and medical education, China has contributed to the development of international professional accreditation standards, with Chinese higher education concepts and practices increasingly informing global education governance.

Key Challenges

1. Persistent resistance in deep-stage institutional and governance reforms
   Despite ongoing efforts to advance administrative streamlining and decentralization, universities still face constraints on autonomy in areas such as disciplinary planning, faculty appointment and promotion, salary distribution, and organizational structure. Administrative intervention remains

significant. Evaluation reform aimed at moving beyond simplistic quantitative metrics has entered a critical phase, yet the establishment of scientific, diversified, and sustainable evaluation systems continues to encounter institutional inertia. Internal governance structures require further optimization, particularly in clarifying the boundaries between academic authority and administrative power, making the construction of modern university governance systems an ongoing challenge (Zhou Guangli, 2022).

2. Imbalances in disciplinary ecosystems and barriers to interdisciplinary integration
   Resource allocation remains uneven between traditional strong disciplines and emerging interdisciplinary fields, with a persistent tendency to prioritize science and engineering over the humanities. Some foundational disciplines and highly specialized fields face risks of marginalization or discontinuity. Rigid disciplinary organizational structures and entrenched departmental boundaries significantly constrain interdisciplinary collaboration aimed at addressing major scientific challenges and complex societal problems. Building a healthy, dynamic, and resilient disciplinary ecosystem remains a key challenge for achieving high-quality connotative development (Wang Jianhua, 2021).
3. Escalating external pressures from global talent competition and technological rivalry
   Shifts in the international landscape and intensifying technological competition have increased uncertainty in global talent mobility and scientific collaboration. Chinese universities face strong competition from leading institutions in developed countries when attracting top scientists and globally influential mid-career academic leaders. Moreover, in certain critical core technology areas, bottlenecks persist along the innovation chain from basic research to industrial application, underscoring the urgency of achieving high-level scientific and technological self-reliance (Li Fengliang, 2023).
4. Persistent internal imbalances within the higher education system
   Although the Double First-Class Initiative has expanded the range of beneficiary institutions, the "Matthew effect" of resource concentration in a small number of elite universities remains pronounced. Disparities among eastern and western regions, across provinces, and between centrally affiliated and local universities continue to be evident in funding levels, faculty quality, and student recruitment. Effectively promoting balanced regional development and differentiated institutional growth without weakening the construction of high-level "plateaus" and "peaks" remains a central challenge in advancing both educational equity and overall quality improvement (Zhang Yingqiang, 2022).

Conclusion

The development of world-class universities in China demonstrates that achieving global excellence requires a balanced integration of international standards with national priorities. Rather than simply adopting foreign models, Chinese universities emphasize serving national development while maintaining openness to global academic collaboration. This approach highlights that sustainable university development depends on aligning institutional missions, governance systems, disciplinary development, and talent cultivation with the country's long-term strategic needs, thereby strengthening both national competitiveness and international academic influence.

This study further indicates that continuous institutional reform is essential for enhancing the quality and competitiveness of higher education. Expanding university autonomy, improving governance mechanisms, reforming talent and research evaluation systems, promoting interdisciplinary innovation, and strengthening international cooperation are mutually reinforcing strategies that support the development of world-class universities. At the same time, forward-looking disciplinary planning and problem-oriented research are increasingly important for responding to technological change, industrial transformation, and emerging global challenges.

Finally, the pursuit of world-class universities should be accompanied by a commitment to equity and the balanced development of the entire higher education system. Strengthening regional higher education capacity, expanding access to high-quality educational resources through digital technologies, and implementing differentiated institutional development strategies can foster more inclusive and sustainable progress. Together, these efforts provide a comprehensive framework for advancing China's higher education modernization while offering valuable insights for other countries seeking to enhance university quality through reforms that are responsive to their own national contexts and development priorities.

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