



Original Article

Version 2.0 of Building World-Class Universities in China: Initial Outcomes and Problems of the Double World-Class Project

Jie Gao^a  and Chunna Li^b

^aSchool of Foreign Studies, Northwestern Polytechnical University, 127 Youyi West Road, Xi'an 710072, People's Republic of China.

E-mail: gaojie@nwpu.edu.cn

^bSchool of Astronautics, Northwestern Polytechnical University, 127 Youyi West Road, Xi'an 710072, People's Republic of China.

E-mail: chunnali@nwpu.edu.cn

Since the launch of the double world-class (DWC) project in 2015, China has entered into a new stage of building world-class universities. What makes China give up the existing projects for a new one? Towards the end of its first five-year cycle, has the version 2.0 of building world-class universities in China achieved the desired results? This study tries to answer these questions by giving an explanation about the relevant policies and an overview of changes brought by the DWC project. Based on the data and documents released by the Chinese government, selected universities and some international organizations as well as an extensive literature review, we find that this new project has been functioning effectively and has achieved remarkable preliminary success. However, there still remain problems such as vicious competition among institutions and unhealthy academic utilitarianism due to the heavy competitive pressure. Meanwhile, the project takes a selective concentration approach that sacrifices the majority to benefit the minority, which may exacerbate the already imbalanced development of China's higher education system and hinder its overall development in the long run.

Higher Education Policy (2022) 35, 397–413. <https://doi.org/10.1057/s41307-020-00211-z>; published online 9 November 2020

Keywords: the double world-class project; world-class university; higher education institutions; imbalance in allocation

Introduction

Since the 1990s, the world has seen an upsurge of efforts in building world-class universities (WCUs) (Byun *et al.*, 2013). It is believed that WCUs play a crucial role in providing the talents and innovation capacity required for a country to shift toward knowledge-based economy and thus grow sustainably and be internationally



competitive (Altbach, 2009; Ma, 2007). As an active participant in this upsurge, China has adopted a selective concentration approach and initiated a series of world-class building projects across its higher education (HE) system since the late 1980s; and the latest one is the double world-class (DWC) project. The coined term “double world-class” refers to WCUs and world-class disciplines (WCDs).

With the goal of building a number of world-class universities and disciplines by the end of 2050 (The State Council, P. R. China, 2015), the new project is viewed as an essential part of China’s national development strategy. It is hoped that the long-term implementation of this project will greatly facilitate China’s transformation from a “big” HE power to a “strong” one (The State Council, P. R. China, 2015). Many agree that China has achieved remarkable results in the early stage of building WCUs (Marginson, 2011; Zhang *et al.*, 2013), so what is the point of giving up the existing projects for a new one? How should we look at the launch of the DWC project? Towards the end of the first five-year cycle of the DWC project, has China’s HE been improved to a level expected by the policy makers? What are the initial outcomes of this new project? In response to those questions, this study proposes a framework based on Elster’s framework for intentional explanation to explain the choice of the Chinese government at its progress stage of building WCUs. By comparing the DWC project with previous WCUs building projects such as the 211 project and the 985 project, this study analyzes the actions, cognitions, and desires of the DWC project and summarizes what has led to the adjustments and changes along the way. Based on the documents, reports, and figures released by the government and some of the representative universities as well as an extensive literature review, this study attempts to provide a close examination of both the outcomes and problems in the initial stage of the new project. Using the DWC project as a case study, this study seeks to reveal the logic and conflicts behind China’s quest of building WCUs at its progress stage.

Explanation About the Policy Choice for the DWC Project

Elster’s framework (2009) for intentional explanation holds that performers are agents who take actions intentionally based on their cognitions. Hence, an action can be interpreted by an action (A), desire (D), cognition (C) triadic relation. Based on the assumption that “human action is rational” and the supporting evidence obtained by collecting, analyzing, and evaluating information (I) from the external context, cognitions can be formed and lead to rational choices. To successfully perform an action, there must be logical consistency among C, D, and A (Elster, 1994). If HE policies are considered as actions taken by a country, then they should be rational choices intentionally made by the policy makers (Tsang, 2014). In this sense, the DWC project is an action taken by the Chinese government to realize the desire of building WCUs and WCDs with the cognitions formed based on a

complete set of related information. Based on Elster’s framework, we propose a modified framework to explain both the initial and progress stages of making a policy choice, as shown in Figure 1. F represents feedback from the initial stage, which constitutes an important part of the information that drives the formation of cognitions for the progress stage. Based on this information, which includes feedback from the previous building stage and other information, policy makers modify their cognitions (C_1), develop new desires (D_1), and adjust the action (A_1).

Information

In the case of the DWC project, there have been multiple sources of information for the policy makers to refer to, including the economic and political contexts, the local and international HE situations, various resources available for the development of HE, and the results and feedback of the early building period.

Feedback from the initial stage can be summarized as follows: (1) It is believed that China’s previous stage of building WCUs has achieved remarkable results. The infrastructure and education environment of most higher education institutions (HEIs) have been improved in a relatively short period of time. The country’s overall strength in HE as well as its economy has been enhanced through the previous projects (The State Council, P. R. China, 2015). (2) However, there is still room for improvement in China’s HE strength. According to Liu (2012), the vice premier of the State Council, China’s HE is “big but not strong” (p. 5). Additionally, data from various international league rankings indicated that only a few universities in China were close to world-class standards before the launch of the new project (QS, 2014; THE, 2015). The number of highly cited researchers was limited, even at the best universities in China, and their citation influence was comparatively weak, suggesting the doubtful quality of their international published articles (Guo and Sun, 2014). (3) Problems such as solidification of universities’ status, lack of competition, and redundant development arose in previous WCUs building projects (The State Council, P. R. China, 2015). The only-

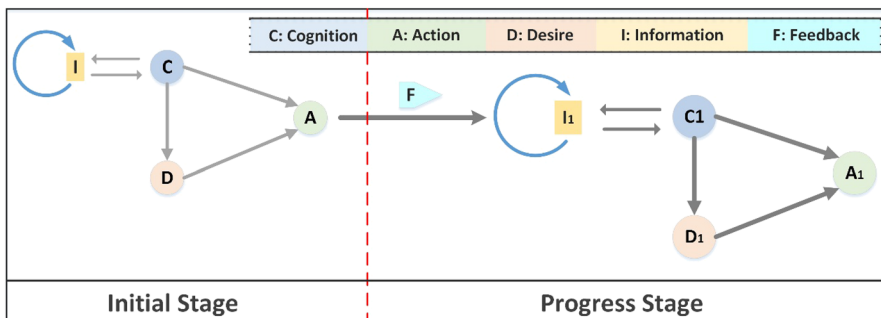


Figure 1. A framework for understanding policy making at the progress stage.



in-no-out approach adopted for the previous projects deprived HEIs out of the lists of the possibility of being allocated with sufficient education resources and changing their inferior status. This situation has aroused growing discontent among the large number of local and non-211 and 985 project HEIs.

Cognitions

For policy makers, cognitions should be formed by making sense of the collected information (Tsang, 2014). The above-mentioned information has led China's policy makers to believe that improvements must be made to alleviate or solve the problems with the previous building stage. Besides, it has always been believed that WCUs play a significant role in promoting China's economy and transforming its economic development model into one driven by high technology. The achievement at the initial stage further confirms the belief that building WCUs will improve the overall strength and international competitiveness of China's HE. As the case stands, the best solution to this would still be allocating a concentration of funding to a group of selected HEIs. Therefore, it is necessary to continue to follow the path of selective concentration in the endeavor to build WCUs.

However, as the overall strength of China's HE has improved a lot since the initial stage, China's policy makers now refuse to settle for copying the Western WCUs. They believe that Chinese HEIs must seek their own way of building WCUs, instead of following the Anglo-Saxon models, for China to become a world-leading HE power.

Desires

The DWC project is aimed to achieve the "double world-class" status, i.e., WCUs and WCDs. This explicit aim implies an implicit desire of seeking the transformation toward a highly value-added and efficient economy. In addition, this desire entails the intrinsic aspirations to gain competitive advantages in education and research in the international HE arena, to attract and retain talented researchers, teachers, and students, and to enhance China's national economic and technological strength utilizing the technological innovation and incubation capabilities of HEIs. To sum up, this strong desire is similar to the one defined in previous WCUs building projects.

Another desire of the DWC project, one that is distinctly different from that in the previous stage, is to move away from the WCUs model dominated by the Anglo-Saxon world and create a WCU and HE culture with Chinese characteristics¹. PRC president Xi Jinping has emphasized that Chinese WCUs should "be rooted in China" (Qu, 2014). It has also been made clear that Chinese WCUs should not be built by copying Western models, but with an emphasis on "Chinese characteristics" (The State Council, P. R. China, 2015).

According to official documents, the new project also intends to remedy problems with previous projects, so as to promote more optimized development of China's HE system (The State Council, P. R. China, 2015). This is also an important reason for giving up the former 211 and 985 projects for the current DWC project.

Actions

The DWC project is an action to realize the desires/goals for WCUs and WCDs. This comprehensive action needs to be concretized into a specific implementation mechanism. According to the three strategic DWC project policy documents, namely *Overall Plan* (The State Council, P. R. China, 2015), *Implementation Measures* (MoE, MoF and NDRC, P. R. China, 2017a), and *Guiding Opinions* (MoE, MoF and NDRC, P. R. China, 2018), the specified measures can be divided into three categories: management actions, support actions, and building actions. Management and support actions are mainly implemented at the level of central and local governments; building actions are implemented more at the institutional level under governmental guidance, involving institutional strategies for curriculum development, performance assessment, talent attraction and training, and international exchanges and cooperation.

Compared with previous WCUs building projects, the DWC project makes the support available more broadly, focuses more on management strategy adjustment, and calls for more engagement of HEIs in the implementation process. The DWC project continues to provide strong financial support to the selected HEIs and has increased the number of funded institutions to 137. In terms of the management strategy, the DWC project has changed from “only-in-no-out” to “dynamic adjustment”; specifically, funded HEIs will be re-assessed every five years, and those rated as unqualified may be eliminated from the funding list. In terms of building actions, the DWC project covers a wider range of aspects. The 211 project and 985 project were mainly focused on training talent, improving research capabilities, facilities and infrastructure, and promoting international exchanges. According to Zhou and Hu's (2019) analysis of the three DWC project policy documents, the DWC project has gone a step further to cover teaching staff development, research promotion, cultural development and inheritance, academic research commercialization and internationalization, and more. Comparatively speaking, the DWC project puts more emphasis on cultural development and requires extending the depth and breadth of research, teaching excellence, and international exchanges.

Initial Success and Achievement of the DWC Project

In the previous section, we took a close look at the cognitions/beliefs, desires/goals and actions of the DWC project. Now, we are going to discuss how successful



China's new WCUs building efforts have been as the first five-year assessment cycle is coming to end. Statistics from various resources reveal that the project has brought about some significant improvements, suggesting the initial success of this new policy.

Improved league ranking

Since the implementation of the DWC project, significant improvements have been achieved in the international league rankings of selected universities. In 2017, only four universities broke into the Top 100 QS World University Ranking. This figure has remained at six since 2018². Zhejiang University, in particular, has jumped from 110th spot in 2017 to 54th in 2020 (QS, 2017, 2020). From 2015 to 2020, the two most prestigious universities in China – Peking University and Tsinghua University – made a leap from 48th and 49th places to 24th and 23rd, respectively, in THE World University Rankings. In 2020, this ranking list included 81 universities from China, which put the country in 4th spot in terms of number of universities, only after the USA, Britain, and Japan (THE, 2019a). Evaluation indicators such as teaching, scientific research, teaching staff quality, and international outlook are often used to generate university rankings (QS Staff Writer, 2019; THE, 2019b; Shanghai Ranking Consultancy, 2019). In this sense, the rising rankings suggest that Chinese HEIs have made improvement at least in the areas of teaching, citation influence, share of international staff, and share of international co-authorship (Bothwell, 2019a).

Admittedly, the improved performance on these charts does not make China surpass its European and American competitors. There is still a big gap between the *status quo* of Chinese universities and their goal of being “world-class” (THE, 2019a; Shanghai Ranking Consultancy, 2019). However, just as Bothwell (2019b) commented, this change reveals “how the country has improved in terms of representation and individual institutional performance over the past five years” (<https://www.timeshighereducation.com/world-university-rankings/world-university-rankings2020china-powers>).

Higher research productivity

Consistent with what the league ranking statistics indicate, statistics from some commercial organizations also demonstrate a significant increase in both the number and quality of papers published from China. According to LetPub³, there has been continued growth in the number of scientific research papers published by Chinese researchers. In 2018, the total number of SCI papers published by Chinese researchers reached more than 390,000, ranking second in the world. Among them, the total number of papers published by Chinese colleges and universities in JCR Q1 journals exceeded 51,000 – an increase of about 18.6% over 2017 (LetPub, 2018).

Enhanced internationalization

Another prominent improvement is reflected in the increasing internationalization of DWC universities. Based on the model from Salmi (2009), internationalization is one of the key factors that indicate the talent concentration characteristic of a WCU, and a response to the “requirements and challenges related to globalization” (Wende, 1997, p. 23). Internationalization should at least involve integrating international content and perspectives in disciplines, recruiting international students and teaching staff, and promoting international cooperation and exchanges among teaching staff and students (Kreber, 2009; Thune and Welle-Strand, 2005). To meet the requirements of the DWC project for strengthened engagement in international HE and research (The State Council. P. R. China, 2015), many universities have accelerated their pace in going international. For example, Tsinghua University has established nearly 600 English medium instruction (EMI) courses and 28 English-taught graduate degree programs (<https://www.tsinghua.edu.cn/publish/thu2018/index.html>); Peking University offers 77 EMI courses from 24 different departments to their undergraduate students (<https://www.pku.edu.cn/>). Statistics from Ministry of Education (MoE) of China show that the number of international students studying in China has increased steadily, including those studying for master’s and doctor’s degrees (MoE, P. R. China, 2017, 2019). The total number of foreign teachers working in China’s HEIs in 2019 was 18,421, an increase of 2989 compared with the number 15,432 in 2014. There has been an increase in the number of foreign teachers with a doctor’s degree, and a decrease in that with lower academic degrees (Development Planning Division of MoE, P. R. China, 2015, 2019). This indicates a higher academic degree requirement for foreign teachers and improved quality of international teaching staff.

International cooperation and exchanges among universities have also been strengthened, both in education and scientific research. As two leading universities in terms of internationalization (Southwest Jiaotong University, 2019), Tsinghua University has signed cooperation agreements with 285 institutions and organizations in 50 countries (<https://www.tsinghua.edu.cn/publish/thu2018/index.html>), and Peking University has launched a number of Sino-foreign joint schools with universities in Belgium, the UK, and Singapore (<https://www.pku.edu.cn/>).

Extended funding scope

Besides improving the performance of China’s HEIs, the new project has also included a broader range of institutions in its funding list, promoting the status of some former non-985/211 institutions. The funding is provided separately for institutions and disciplines, which can financially benefit a larger number of institutions and make room for the development of disciplines in relatively weak institutions. It was reported that a total of 25 former non-211 and 985 project



universities have been included in the first DWC project building list (MoE, MoF, and NDRC, P. R. China, 2017b).

It is also worth noting that some of the 25 newly selected HEIs are specialized in Chinese medicine and culture, i.e., five in Chinese medicine and four in Chinese culture and arts. Clearly, the intention of this choice is, to some extent, in line with the DWC project's emphasis on "Chinese characteristics" (Shi, 2018).

Challenges and Problems

While the new project features performance-based evaluation, dynamic management, and other adjustments that have simulated competition and promoted productivity across China's HE system, problems still remain due to the high competitive pressure. With the new "in-and-out" system, every participating HEI is faced with the risk of being excluded and thus losing governmental support and funding. In response to a shortened assessment cycle, selected HEIs must act quickly to find ways to improve their capabilities as required by the government. Therefore, a series of targeted reforms have been carried out on the personnel system and performance assessment, which has led to not only enhanced productivity but also controversial debates.

Growing vicious competition and unhealthy academic utilitarianism

Recruiting qualified personnel has become a shortcut for Chinese universities to rapidly improve their scientific research and teaching capabilities (Yan and Zhou, 2017). To recruit high-quality teaching staff, some universities were willing to pay huge amounts of money, and even promised employment without going through appropriate transfer procedures (General Office of the MoE, P. R. China, 2013). While generous treatment helps to attract talent, job-hopping is of frequent occurrence among a number of professors (Dang, 2018). Yu (2019) claimed that about one-fifth of foreign scholars in China would leave their universities every year. The problems of brain drain and disordered flow of teaching staff arose during the competition among universities (Xin and Fan, 2017).

Another way that may work in the short term to stay qualified for the DWC project is to quickly popularize indicators used in local and international evaluation systems. Without a clear official explanation, many universities tend to conceptualize WCUs and WCDs using international standards such as league rankings (Allen, 2019), and develop their own building plans based on evaluation benchmarks, especially academic indicators such as Essential Science Indicators (ESI) (Zhao and You, 2019). It is common for universities to introduce incentives overly related to research results (Mei and Li, 2018). Teaching staff promotion and evaluation are usually tied with academic productivity. As a core part of recent personnel system reforms implemented by many Chinese HEIs, newly recruited

teaching staff who cannot deliver the required research results will be dismissed during the term of the employment contract. To pass the performance assessment, teachers have to shift their focus from teaching or other academic activities to short-term and high-yield research output (Yuan, 2016). It has been reported that such orientation toward research leads to teaching staff's prioritizing research and depreciating teaching (e.g., Parker, 2008; Young, 2006). Tian and Lu (2017) claimed that teaching was negatively affected and academic power hierarchies were exacerbated under the new reforms at the institutional level. Overwhelmed by the demand for academic output, young lecturers generally felt intensified pressure, insecurity and anxiety (Tian and Lu, 2017), echoing what Yu (2009), and Mok (1999) found.

The indicator-oriented evaluation policy has caused both institutions and teachers to show a certain degree of unhealthy academic utilitarianism (de Grijns, 2017). Kim *et al.* (2018) quoted a Chinese college interviewee to illustrate the orientation toward benefits resulting from the performance evaluation system: "No one can calm down to do research, and you need to produce results every year" and "the trend now guides people to do easy, short, and result-oriented research" (p. 14). Eager for quick successes and instant benefits, some universities attach great importance on "packaging" reporting materials to the government, but pay less attention to quality improvement. Instead of quality improvement, decent data have become the goal of some institutions and individuals, which has in turn intensified academic utilitarianism and egoism (Wang, 2019).

Limited change in the institutional hierarchy

When new problems arise, old ones still exist. In order to change people's fixed perception of universities' status, the DWC project has canceled the "life-long" qualification of selected universities in an attempt to provide more opportunities to former non-211/985 universities. Nonetheless, it is impossible to break the institutional hierarchy in a short period of time. With decades of sustained support from the central government, former 211/985 project universities, especially 985 project universities which are directly run by the central ministries, have accrued significant advantages in teaching, faculty, students, scientific research, etc. On the contrary, a large number of local HEIs which were not on the list of previous projects might not get sufficient financial support, especially when the local fund input was deficient⁴. With the previous long-term selective concentration approach, the gap among these HEIs has already fixed and widened. This situation has unsurprisingly led to the fact that former 211/985 project universities still account for an absolute majority in the new list. Only one former 211 project university was excluded from the new list.

Although the official authorities have clearly stated a "three equalities" principle, namely "equality in attention, equality in building, and equality in



evaluation,” toward all selected institutions (MoE, MoF, and NDRC, P. R. China, 2017b), hierarchy is still evident in the new list. Institutions selected for the DWC project are generally divided into two groups, one for building WCUs and the other for building WCDs. Former 985 project universities with a superior status dominate the group for building WCUs, which means that they will continue to get more attention and support.

For most former 211 and 985 project universities, the DWC project simply makes an addition to their reputation, for other institutions are at a distinct disadvantage when competing with them. Admittedly, the DWC project offers more opportunities to the newly funded institutions, but it makes little change to the institutional hierarchy of China’s HE system.

Imbalance in resource allocation

Imbalanced allocation of China’s HE resources has been a long-standing issue at the institutional, regional, and disciplinary levels (Chen *et al.*, 2019; Li and Wang, 2014). Universities directly run by central ministries, located in developed regions or with significant strengths in science and engineering disciplines, often get much more fund and support. This situation is very likely to hinder the long-term overall development of China’s HE. Although the DWC project does not target the development of every institution nor explicitly address the imbalance in resource allocation, the Chinese government has obviously noticed this problem and has taken actions to alleviate it. For example, 25 non-211 and 985 project universities were added into the new funding list; three universities from less developed regions – Zhengzhou University, Yunnan University, and Xinjiang University – were deliberately put into the group for building WCUs.

However, this minor adjustment is far from enough to address the overall imbalance within China’s HE system. Financial allocation has continued to be heavily weighted toward a small number of elite universities. Even within the new list, there is a huge gap in terms of financial support between HEIs subordinate to central ministries and those run by local governments. For example, in 2018, Tsinghua University, which is subordinate to MoE, received about 5.2 billion yuan of financial support (Tsinghua University, 2019), while the amount for Xinjiang University, which is run by the local government of Xinjiang Uygur Autonomous Region, was only about 0.3 billion yuan (Xinjiang University, 2018).

If the regional imbalance does not continue to aggravate because of the DWC project, at least it still exists. As Gao (2017) commented, “the gap between the rich and poor areas also remains prominent” (<https://thediplomat.com/2017/09/a-closer-look-at-chinas-world-class-universities-project/>). Selected HEIs are heavily concentrated in better developed regions. HEIs in the developed eastern region hold a dominant position in the new list, accounting for 22 out of the total 42 HEIs belonging to the group for building WCUs, greater than the sum of the other three

regions (see Fig. 2)⁵. While 34 HEIs in Beijing are selected for the new project, only one university in Yunnan Province (located in the less developed southwestern part of China) is shortlisted. Since the financial support of the two levels of government (central and local) is the most important funding source for most Chinese HEIs, those located in the eastern region often receive better support and more development opportunities due to the more developed regional economy. With more eastern HEIs being listed in the DWC project, the central financial support is also be weighted toward these HEIs, thus further widening the regional gap across China’s HE system.

Besides, there is also imbalanced development and resource allocation at the disciplinary level. To gain competitive advantages, universities tend to strategically distribute more resources to disciplines that produce academic results more easily and are favored by the government for their close connection with economy and national interests. According to Liu (2018), material science and engineering, chemistry, biology, mathematics, and computer science are the top five favored disciplines in the DWC project, but none of them falls into the category of humanities. Song (2018) made a case study and found that humanities were in a weak position. The study also suggested that the university management prefers to invest more in “key subjects” in the science and engineering fields simply because they can help to improve the university’s performance by producing more patents and attracting more government funding (p. 736).

Conclusion and Discussion

Based on Elster’s framework for intentional explanation, this paper explains the policy making logic for the DWC project by analyzing its cognitions, desires, and actions. At the progress stage of the WCUs building efforts, China has made various adjustments based on the collected information, including the experience

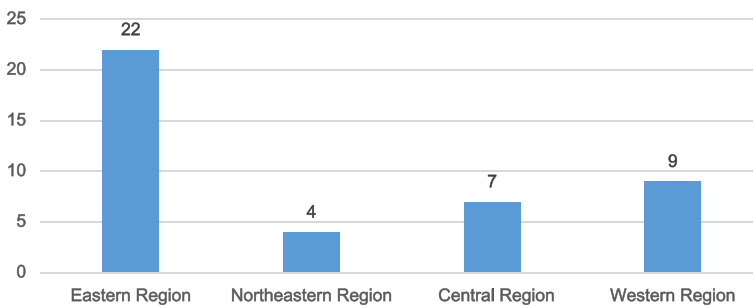


Figure 2. Distribution of 42 world-class universities in the four economic regions of China.
Source: MoE, MoF, and NDRC, P. R. China (2017c).



and lessons from the previous stage. The DWC project is both a continuation and revision of previous projects. It demonstrates the Chinese government's belief in developing economy through science and education and its preference for the selective concentration approach. Besides the goal of building WCUs defined in previous projects, the new project implies some other desires, including developing WCUs with Chinese characteristics and correcting problems encountered in previous projects.

The outcomes over the past five years suggest that the new policy has indeed stimulated competition among Chinese HEIs and helped to produce desirable results. Even so, the shortened evaluation cycle and unstable funding status have also brought unprecedented pressure to the selected institutions. Moreover, the fierce recruiting competition and the prevalent personnel evaluation system that “prefers diplomas, seniority, and academic papers over actual contributions” have further driven the indicator- and benefit-oriented academic utilitarianism (Cao, 2019; Dang, 2018).

Meanwhile, unlike what the policy makers were expecting, there has been no clear evidence of improvement in the problems of solidification of HEIs' status and redundant development. Under the current funding pattern of the DWC project, financial support is still heavily weighted toward to the same group of HEIs.

By extending the funding scope and including several HEIs from less developed regions in the list for the sake of “regional coverage” (Liu, 2018, p.149), policy makers intend to address the existing imbalance in resource allocation of the DWC project. However, these measures are so limited that they can bring neither overall balance in resource allocation nor regional equality to the development of China's HE system. Furthermore, the regional imbalance in economy is bound to widen the gap among HEIs.

To some extent, these problems stem from the fact that institutions, which are both the subject and the managed of the policy, may have different cognitions, desires, and actions from the government. Despite the same goal of building WCUs and WCDs, the government cares more about promoting economic progress and technological advances, but institutions focus more on obtaining sustained funding and maintaining their status in the new round of competition. Therefore, institutions tend to orient their actions toward indicators and develop coping strategies when implementing the policy. Accordingly, college teaching staff may be manipulated by assessment indicators and become more benefit-driven and utilitarian.

The inner inconsistency among the cognitions, desires, and actions of the DWC project may also be a cause of the above-mentioned problems. Although the DWC project puts an emphasis on the goal of “Chinese characteristics,” there is neither a detailed official explanation about what this goal entails nor clear criteria to evaluate how this goal is fulfilled. Therefore, there is a lack of appropriate actions to realize the desire of building WCUs with Chinese characteristics. Many selected HEIs still set their goals by following mainly the Western academic paradigm (Allen, 2019). The Chinese characteristics have not been well embodied, and it has

been infeasible in practice to realize the desire of creating an independent culture for China's HE.

As a project at the progress stage, the DWC project seems to be an attempt to strike a balance between efficiency and fairness. However, some of the newly funded universities are far from competent to get away from the hierarchy of the existing system. The selective concentration nature of the DWC project fundamentally goes against the balanced development of the whole system. The recruiting competition among institutions may cause more talent to flow to developed regions. Therefore, there will be an increasingly widened gap between funded and unfunded institutions and between developed and undeveloped regions, aggravating the imbalance in China's HE system.

After about 20 years' efforts, China has now taken its quest of building WCUs to a new level through the DWC project. The project is not only an attempt to accelerate the pace and correct previous problems; it also presents a more contextualized desire of building WCUs. The initial achievement of the project demonstrates that the continued priority-based development strategy has been working effectively in the Chinese environment. However, the feasibility and effectiveness are not sufficient to prove the integrality and flawlessness of a policy. Obscure concepts as well as inconsistency between the cognitions, desires, and actions still exist in the policy for the DWC project. This consequently leads to the failure to fully realize some desires/goals.

Besides, with its selective concentration approach, the DWC project will be unable to avoid the pitfall of "sacrificing the majority for the success of the minority" and thus unable to balance the development of China's entire HE system (Deem *et al.* 2008, p. 91). On the contrary, it is more likely to aggravate the imbalance and it indeed has developed a more competitive and indicator-oriented academic culture in China. The DWC project aims to stimulate competition, rather than cooperation, among HEIs, but can this mechanism bring more benefits to China's HE system as a whole? The answer would be no. As Altbach (2004) argued, "putting too much stress on attaining world-class status may...divert energy and resources from more important...goals....It may set up unrealistic expectations that harm faculty morale and performance" (p. 23). How to make China's HE system achieve more coordinative development in the long run and how to avoid imbalances in the country's HE are always considerations policy makers need to take into account when making WCUs building policies for the country.

Funding

The funding was provided by Shannxi Education Science Plan (CN) (Grant No. SGH18H031).



Compliance with ethical standards

Conflict of interest The authors declare that there is no conflict of interest to this work.

Notes

1. According to some scholars (see for example Shi, 2018; Zhou *et al.*, 2020), “Chinese characteristics” can be understood from at least two perspectives: ideological education and cultural inheritance. But these are not official explanation.
2. The DWC project is inapplicable to universities in Hong Kong, Macao, and Taiwan. Therefore, only universities from mainland China are covered here.
3. LetPub is a professional brand owned by ACCDON (USA) which provides paper editing and related services for non-English speaking researchers. All statistical data used for the reports are from the Web of Science core collection database and only included in the number of papers with the literature types of article and review.
4. In terms of ownership, HEIs in China can be divided into those run by central ministries and those by local governments. The former are supported by both central and local finance.
5. The Chinese government divides the country into four economic regions. See more information by visiting http://www.stats.gov.cn/zjtj/zthd/sjtjr/dejtjkfir/tjkp/201106/t20110613_71947.htm.

References

- Allen, R. M. (2019) ‘Commensuration of the globalised higher education sector: how university rankings act as a credential for world-class status in China’. *Compare: A Journal of Comparative & International Education*. 19 November. <https://doi.org/10.1080/03057925.2019.1686607>.
- Altbach, P. G. (2004) ‘The costs and benefits of world-class universities’, *Academe* 90(1): 20–23.
- Altbach, P. G. (2009) ‘Peripheries and centers: research universities in developing countries’. *Asia Pacific Education Review* 10(1): 15–27.
- Bothwell, E. (2019a) ‘THE World University Rankings 2020: reaching critical mass’. <https://www.timeshighereducation.com/world-university-rankings/world-university-rankings-2020-reaching-critical-mass>, accessed 9 September, 2019.
- Bothwell, E. (2019b) ‘THE World University Rankings 2020: China powers up’. 11 September. <https://www.timeshighereducation.com/world-university-rankings/world-university-rankings2020-china-powers>, accessed 9 September, 2019.
- Byun, K., Jon, J. E. and Kim, D. (2013) ‘Quest for building world-class universities in South Korea: outcomes and consequences’. *Higher Education* 65(5): 645–659.
- Cao, T. (2019) ‘The five-only problems: consequences, roots and ways to solve difficulties of teachers’ evaluation’. *University Education Science*, (01): 27–32.
- Chen, Z., Yang, Z. and Yang, L. (2019) ‘How to optimize the allocation of research resources? An empirical study based on output and substitution elasticities of universities in Chinese provincial level’. *Socio-Economic Planning Sciences*. 69, available online 4 May. <https://doi.org/10.1016/j.seps.2019.04.004>.
- Dang, Y. (2018) ‘College teachers’ job-hopping, problems and countermeasures under background of ‘Double First-Class’ construction’. *Heilongjiang Researches on Higher Education* 36(09): 1–4.

- de Grijjs, R. (2017) 'Double first-class universities plan needs careful thought'. 5 November. from http://www.china.org.cn/opinion/2017-11/05/content_41840405.htm, accessed 11 September, 2019.
- Deem, R., Mok, K. H. and Lucas, L. (2008) 'Transforming higher education in whose image? Exploring the concept of the 'world-class' university in Europe and Asia'. *Higher Education Policy*, 21: 83–97.
- Development Planning Division of MoE, P. R. China. (2015, 2019) 'Number of academic qualifications of full-time and part-time teachers in HEIs (total)'. http://www.moe.gov.cn/s78/A03/moe_560/jytjsj_2014/2014_qg/201509/t20150909_206893.html, http://www.moe.gov.cn/s78/A03/moe_560/jytjsj_2018/qg/201908/t20190812_394273.html, accessed 15 September, 2019.
- Elster, J. (1994) 'The nature and scope of rational-choice explanation'. In M. Martin & L. C. McIntyre (Eds.). *Readings in the philosophy of social science* (pp. 311–322). Cambridge, Mass.: The MIT Press.
- Elster, J. (2009) *Reason and Rationality*. Princeton: Princeton University Press.
- Gao, C. (2017) 'A Closer Look at China's World Class Universities project', *The Diplomat*, 22 September. <https://thediplomat.com/2017/09/a-closer-look-at-chinas-world-class-universities-project/>, accessed 12 December, 2019.
- General Office of the MoE, P. R. China (2013) 'Opinions of the general office of the Ministry of Education on further strengthening and standardizing the work of talent introduction in colleges and Universities'. 24 December. http://www.moe.gov.cn/srcsite/A04/s8132/201312/t20131224_16.html, accessed 10 September, 2019.
- Guo, C. and Sun, Q. (2014). 'Questions and countermeasures of the construction of world-class universities in China: based on comparative analysis on five well-known universities in Asia in the THE university rankings'. *Education Research Monthly*, (12): 3–9, 37.
- Kim, D., Song, Q., Liu, J., Liu, Q., and Grimm, A. (2018) 'Building world class universities in China: exploring faculty's perceptions, interpretations of and struggles with global forces in higher education'. *Compare: A Journal of Comparative & International Education*, 48(1): 92–109.
- Kreber, C. (2009) 'Different perspectives on internationalization in higher education'. *New Directions for Teaching and Learning*, 2009(118): 1–14.
- LetPub (2018) *Comprehensive ranking report of SCI papers published by Chinese universities in 2018*. http://www.letpub.com.cn/uploads/sci_china_2018/sci_report_2018.pdf, accessed 11 September, 2019.
- Li, Y. and Wang, C. (2014) 'Comparative analysis of resource allocation efficiency—taking regional higher education resources as an example'. *Soft Science* 28(10): 22–26.
- Liu, X. (2018) 'The 'Double First Class' initiative under top-level design', *ECNU Review of Education* 1(1): 147–152.
- Liu, Y. (2012) 'Deepening the reform of higher education and taking the road of connotative development by focusing on quality improvement' (in Chinese). *China Higher Education*, (11): 4–9.
- Ma, W. (2007) 'The flagship university and China's economic reform', in P. G. Altbach and J. Balán (eds.) *World Class Worldwide: Transforming Research Universities in Asia and Latin America*. Baltimore: Johns Hopkins University Press, pp. 31–53.
- Marginson, S. (2011) 'Higher education in East Asia and Singapore: rise of the Confucian model'. *Higher Education* 61(5): 587–611.
- Mei, X. and Li, Z. (2018) 'Evaluation Criteria and Indicators for "Double First Class" Universities: A Literature Review'. *Modern University Education* (02): 76–84.
- MoE, P. R. China. (2017) '2016 Statistics of international students in China'. 1, March. http://www.moe.gov.cn/jyb_xwfb/xw_fbh/moe_2069/xwfbh_2017n/xwfb_170301/170301_sjtj/201703/t20170301_297677.html, accessed 10 September, 2019.
- MoE, P. R. China. (2019) '2018 Statistics of international students in China'. 12 April. http://www.moe.gov.cn/jyb_xwfb/gzdt/s5987/201904/t20190412_377692.html, accessed 10 September, 2019.
- MoE, MoF and NDRC, P. R. China. (2017a) *Implementation Measures for Promoting the Construction of World-Class Universities and First-Class Disciplines (Interim)*. Beijing: The Ministry of



- Education, the Ministry of Finance and the National Development and Reform Commission, P. R. China. http://www.moe.gov.cn/srcsite/A22/moe_843/201701/t20170125_295701.html, accessed by 5 September 2019.
- MoE, MoF and NDRC, P. R. China. (2017b) ‘Solidly promote the building of world-class universities and disciplines with Chinese characteristics—leaders of the Ministry of education, the Ministry of Finance and the National Development and Reform Commission answered reporters’ questions on the construction of Double World-Class’. 21 September. http://www.moe.gov.cn/jyb_xwfb/s271/201709/t20170921_314928.html, accessed 10 September, 2019.
- MoE, MoF and NDRC, P. R. China. (2017c) *Ministry of education, Ministry of finance, national development and Reform Commission on announcing the construction list of world-class universities and disciplines*. Beijing: The Ministry of Education, the Ministry of Finance and the National Development and Reform Commission of China. http://www.moe.gov.cn/srcsite/A22/moe_843/201709/t20170921_314942.html, accessed by 5 September 2019.
- MoE, MoF and NDRC, P. R. China. (2018) *Guiding opinions on speeding up the building of double world-class in higher education institutions*. 27 August. http://www.gov.cn/xinwen/2018-08/27/content_5316809.htm, accessed 2 June, 2020.
- Mok, K. H. (1999) ‘The cost of managerialism: the implications for the ‘McDonalised’ of higher education in Hong Kong’. *Journal of Higher Education Policy and Management* 21(1): 117–127.
- Parker, J. (2008) ‘Comparing research and teaching in university promotion criteria’. *Higher Education Quarterly* 62(3): 237–251.
- QS (2014). *QS World University Rankings 2014/2015*. <https://www.topuniversities.com/university-rankings/world-university-rankings/2014>, accessed 6 September.
- QS (2017, 2020). *QS World University Rankings*. <http://www.topuniversities.com/university-rankings>, accessed 9 September.
- QS Staff Writer (2019) ‘Methodology’. 19 June. <https://www.topuniversities.com/qs-world-university-rankings/methodology>, accessed 9 September.
- Qu, Z. (2014) ‘Developing modern education with China’s characteristics and world level (deeply studying and implementing the spirit of Xi Jinping’s important speech)’ (in Chinese). *Renmin Ribao [People Daily]*. 10, September.
- Salmi, J. (2009) *The challenge of establishing world-class universities*. Washington, DC: The World Bank.
- Shanghai Ranking Consultancy. (2019) ‘Ranking criteria and weights’. <http://www.shanghairanking.com/ARWU-Methodology-2019.html#>, accessed 9 September, 2019.
- Shi, J. (2018) ‘Similarity in form and similarity in spirit: constructing world-class universities with Chinese characteristics’. *China Higher Education Research* (03): 8–12, 23.
- Song, J. (2018) ‘Creating world-class universities in China: strategies and impacts at a renowned research university’. *Higher Education* 75(4):729–742.
- Southwest Jiao Tong University (2019). *University Rankings by Internationalization 2019*. <https://news.swjtu.edu.cn/shownews-19605.shtml>, accessed 10 September, 2019.
- THE (2015) *Academic Ranking of World Universities 2015 results*. https://www.timeshighereducation.com/sites/default/files/breaking_news_files/academic_ranking_of_world_universities_2015_results.xlsx, accessed 9 September, 2019.
- THE (2019a) *THE World University Rankings 2020*. <http://www.betteredu.net/rankings/THE/2019-2020/top-800.html>, accessed 9 September, 2019.
- THE (2019b) ‘THE World University Rankings 2020: methodology’. 2 September, <https://www.timeshighereducation.com/world-university-rankings/world-university-rankings-2020-methodology>, accessed 9 September.
- The State Council. P. R. China. (2015) *Overall Plan for Promoting the Construction of World-class Universities and First-class Disciplines*. Beijing: The State Council. http://www.gov.cn/zhengce/content/2015-11/05/content_10269.htm. Accessed 5 September, 2019.

- Thune, T. and Welle-Strand, A. (2005) 'ICT for and in Internationalization Processes: A Business School Case Study'. *Higher Education*, 2005, 50(4), 593–611.
- Tian, M. and Lu, G. (2017) 'What price the building of world-class universities? Academic pressure faced by young lecturers at a research-centered university in China'. *Teaching in Higher Education* 22(8): 957–974.
- Tsang, Wing-kwong. (2014) 'Explaining Education-Policy Action'. *Peking University Education Review*, 12(1): 68–89.
- Tsinghua University. (2019) *Final accounts of Tsinghua University in 2018*. August, 2019. <https://www.tsinghua.edu.cn/publish/newthu/openness/cwzcsfxx/2018.htm>, accessed 20 March, 2020.
- Wang, J. (2019) 'Talents competition, resource allocation and idea rethinking: thoughts on Double First-Class construction'. *China Higher Education Research* (01): 16–21.
- Wende, M. V. D. (1997) 'Internationalising the Curriculum in Dutch Higher Education: An International Comparative Perspective'. *Journal of Studies in International Education* 1(2): 53–72.
- Xin, F. and Fan, Y. (2017) 'Reflection and correction on the disorder of talent flow in colleges and universities under the background of 'Double World Class' construction' (in Chinese). *Higher Education Exploration* (10): 25–29.
- Xinjiang University. (2018) 'Public statements on final accounts of Xinjiang University in 2018', 14, February, 2018. <http://www.xju.edu.cn/info/1024/4347.htm>, accessed 6 June, 2020.
- Yan, L. and Zhou, H. (2017) 'Institutional motivation of talents hunting under the construction of Double World Class' (in Chinese). *Jiangsu Higher Education* (8): 9–12.
- Young, P. (2006) 'Out of balance: lecturers' perceptions of differential status and rewards in relation to teaching and research'. *Teaching in Higher Education* 11(2): 191–202.
- Yu, Q. (2019) 'Analysis of the gathering status of international scholars and its restrictive factors in China's top universities: based on the data survey and analysis of 30 top-ranking universities'. *China Higher Education Research* (08): 62–69.
- Yu, X. (2009) 'Faculty employment policy shift in Chinese higher education'. *Journal of Education*, 188(3): 51–60.
- Yuan, R. (2016) 'Understanding higher education-based teacher educators' identities in Hong Kong: a sociocultural linguistic perspective'. *Asia-Pacific Journal of Teacher Education* 44(4): 379–400.
- Zhang, H., Patton, D. and Kenney, M. (2013) 'Building global-class universities: assessing the impact of the 985 project'. *Research policy*, 42(3): 765–775.
- Zhao, K. and You, Z. (2019) 'Isomorphism, diversification, and strategic ambiguity: goal setting of Chinese higher education institutions in the Double World-Class Project'. *Higher Education Policy*, 32(5): 1–20.
- Zhou, F. and Hu C. (2019) 'Research on the choice of Double First Class Initiative Policy tools from the perspective of policy tools: based on the analysis of policy tools and construction elements'. *Journal of Educational Studies*, 15(3): 84–93.
- Zhou, W., Niu, J. and He, S. (2020) 'Analysis of the connotation of Chinese characteristics of 'Double First-Class' Initiative'. *Journal of Northwestern Polytechnical University (Social Sciences)*, (2): 23–30.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.