Educating 'Socialist Innovative Graduates' for the Chinese Economy: An Analysis of Negotiations in China's Higher Education Reform

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Abstract- The Chinese government aspires to build its innovative capacity through 'science and education'. Central to this process is the higher education reform with the objective to educate graduates with innovative and practical capabilities. The paper sets out to explore how this reform in constructed. The paper shows how policy and official rhetoric construct the innovative graduate as a 'Socialist innovative graduate', who on the one hand should be independent and creative and on the other highly knowledgeable and disciplined. This requires a fundamental reform of Chinese higher education toward interactive learning, combining Western and Chinese educational practices. Secondly, using a case study approach, the paper shows how this official strategy is modified when translated into practice. New and existing educational ideas and practices are negotiated, and consequently, at the current stage of the reform, institutional conditions for learning can be interpreted as being modernized rather than fundamentally changed. The 'Socialist innovative agent' is thus in reality more problem-solving and practical than independent and creative.

Introduction

An essential part of China's economic development strategy is to build its innovative capacity and become less dependent upon importing knowledge and foreign technologies. The literature concerned with the development of China's innovation system mainly focuses on the development of research capacity and university-industry relations rather than education reform¹. Yet, the education of workers who can contribute innovatively to the economy is considered to be fundamental to innovation capacity building [3]. Especially since the mid-1990s when the government launched the development principles 'Revitalizing the Country through Science and Education' and 'Develop China through Talent' [4], the higher education reform with its potential to foster a large group of innovative workers has been a central strategy.

The Chinese innovation potential is indeed tremendous if measured by the number of university graduates. The student cohort in tertiary education has increased from 5.5 million in 1995 to over 20 million in 2006 [5]. Yet, one thing is the

potential; another is to carry out a complex teaching reform that increases the innovative competences of graduates. Since the 1980s a key objective of the higher education reform has been to abolish the traditional rote-learning teaching style and develop an interactive teaching style because it is perceived most effective in building students' soft skills such as problem-solving, creativity, and independent thinking [6] and [7].

The transformation of institutional conditions for learning is, however, a long and negotiated process, and Chinese reformers have repeatedly called for deeper reforms. To explore how concepts of 'innovative graduates' and 'interactive learning' are developing is therefore important to the understanding of how China is building its innovative workforce. This paper sets out to explore if the objective to educate innovative graduates and implement student-centered teaching breaks with traditional perceptions of 'the educated person' and 'quality education' or if existing practices are continued.

Taking an institutional approach the paper investigates how new and traditional, foreign and Chinese educational ideas shape the direction of the teaching reform in policy and practice. The paper shows how political leaders and intellectuals attempt to construct a new institutional logic - the 'Socialist innovative graduate' - who is taught innovative scientific skills through student-centered learning as well as patriotic and socialist skills through ideological education. It also shows how student-centered learning is negotiated when carried into practice and, therefore, students are taught how to put theory into practice but still within a teacher-centered teaching style². Consequently, the institutional conditions for learning are fundamentally the same but with modern high-tech and practical applications, and the innovative graduate can be interpreted as being problem-solving and practical than independent and creative.

THEORETICAL AND METHODOLOGICAL FRAMEWORK

The object of study is the reform of institutional conditions for learning as a lens to explore the process of building an innovative workforce³. The paper's theoretical framework is mainly sociological neo-institutional. This means that higher

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See for example [1] and [2].

² See [8] and [9] for other examples of how new policies of student-centered learning have been translated down through the system in China.

³ It is not an educational study, i.e. I do not have an opinion of whether the teaching reform is 'good' or 'bad' and the aim is not to examine whether the implementation of the reform is effective or not.

education is studied as an institution [10], i.e. as a construction of regulations, taken-for-granted assumptions, and shared logics⁴ about teaching and learning that regulate higher education.

Educational Borrowing and Negotiated Change

The paper draws on literature about educational borrowing and higher education development ⁵, which questions the assumption in educational policy that national higher education systems are developing according to changes in the economy. Instead they are understood to be mainly constructed according to global ideas about the role of higher education in development, which is based on faith in science, rationality, and human capital. This is not to say that there is no real link between higher education, labor competences, and development but that the dominant discourse about the causal links between them can be seen as a global script that can be negotiated and shaped locally.

Nevertheless, even though China borrows educational models to modernize the education system, the Chinese higher education reform should be studied as unique because new educational models are not introduced into a tabula rasa but rooted in national societal factors [16]. Therefore, like ref. [17], I experiment with merging institutional and cultural lines of arguments. That is, I assume that the process of educational change is a contested process of internationalization and indigenization. National interpretations of universal practices will typically lead to localized results or processes.

The focus of the paper is twofold and inspired by two different sets of theory: 1) how national reformers frame the development of a new educational model that can cultivate innovative graduates according to different interests, which can affect deeper value-changes ⁶, and 2) how university actors negotiate new ideas and methods with historical values and practices as well as contemporary transformations in China's larger modernization process, which affect the direction of the reform process⁷.

National Reform Rhetoric and Changing Institutional Logics of Higher Education

In China national legislation and other official documents are a useful barometer of official goals and values [23]. I therefore study documents of public policy, political statements and strategies as well as academic texts to investigate how Chinese higher education reformers frame the reform strategy through institutional logics about the need for innovative graduates and the need to introduce student-centred learning. Criteria for legitimacy are encoded within institutional logics about how things are or should be, and they can tell us something about shifts in what is considered legitimate teaching style, and thus a possible shift in shared educational values [24] and [25].

⁶ Inspired by [18]; and [19].

These official descriptions are interpreted as ideal types, which are supposed to be role models for practitioners and which are framed to position the reform among various political, economic and social interests.

Organizational Responses to National Reform Rhetoric

These ideals are then further negotiated with institutionalized practices, norms and values, local interests, available resources, etc. when they are translated into practice in education organizations [26]. Education organizations are understood as social sites in which actors continuously change or reproduce student identity ('the educated person' [27]) within and against the broader political economy and socio-ideological forces, and thereby shape the reform of conditions for learning.

Tensions between new and existing ideas can create a room for actors to shape a new path [28]. To study those tensions I have chosen to take a finance and economics university (FEU) as my case⁸. I select reform elements central to the case of fostering innovative graduates and study how teachers, students and leaders explain the drivers, barriers, and conditions for reform ⁹. Thereby the analysis provides a lens into the negotiations that construct the room for manoeuvre in changing institutional conditions for innovation competence building.

The case university XUFE is a provincial university¹⁰ located in an Eastern province and it has approx. 20,000 students in 22 Master's programs, 35 Bachelor's programs, as well as in two-year Certificate programs. It was founded in 1956 under the Soviet inspired system, and has been merged several times during the contemporary reform, the last time in 2000. As a result it is oriented to the disciplines of economics and management, coupled with those of law, humanities, science, and technology. It received the status as FEU in 2003 but the teaching reform has been running for longer than a decade. It is a dynamic university with focus on reform.

FRAMING THE NEED FOR 'SOCIALIST INNOVATIVE GRADUATES'

The higher education system that Chinese reformers inherited in 1978 was in a state of breakdown. They had to completely reframe higher education along the new road of economic modernization since the revolutionary educational ideals were no longer valid. The higher education reform was launched by Chinese Communist Party (CPC) Chairman, Deng Xiaoping, in April 1978 to ensure that education would support China's modernization process [29]. The overall goal of the first two reform blueprints (1985 and 1993) was constructed as a human capital approach for China's economic and social development.

⁴ This definition of an institution builds on [11].

⁵ E.g. [12]; [13]; [14]; and [15].

⁷ Inspired by [20]; [21]; and [22].

⁸ The category is a new construct in China and therefore they borrow management and business curriculum from Western universities; yet they are not new organizations but rather mergers of existing colleges. They must constantly negotiate between existing and new, local, and foreign ideas and practices, which make their teaching reform interesting to study.

⁹ The data for the case study are based on university strategy papers; speeches; websites; interviews with university leaders, teaching administrators, teachers and students conducted at XUFE in October 2006, May and July 2007 and March 2008; and to a lesser degree observations; and a student survey conducted with around 450 students in 8 majors.

¹⁰ Universities are divided within a hierarchy from national key universities down to municipality universities.

Higher Education should "prepare graduates "to meet the needs of economic, scientific, technological, and social development."" [30].

As China's economic restructuring took off in the 1990s, the focus on innovative competences increased. In 1998 the central government strengthened the argument that China should be part of the global knowledge economy [31], and that same year China passed its first Higher Education Law with the official goal to "train senior specialized talents with innovative spirit and practical capability" [32]. Driven by the objective to be able to compete on science and technology in the 21st Century the law was followed by an 'Action Plan of Revitalizing Higher Education' to develop "creative talents of the highest caliber" who are able to build a "globally competitive national innovation system" [33 and 34].

Like in many other countries today, China's higher education reform was increasingly legitimized with reference to the global knowledge discourse [35 and 36]. The discourse asserts that countries need to invest in higher education to educate human resources with science and technology skills, which will allow countries to compete in the knowledge economy and allow developing countries to catch up with developed countries [37]. In 1996, the President of Shanghai University since 1982 11 and influential higher education reform expert, Qian Weichang, for example contends, "If our country shall continue to exist, and our race develop and become rich and strong, ...it is extremely important that we cultivate the innovative spirit of our students." [38].

The Search for a Teaching Model that Fosters Innovative Graduates

The national entrance exam for higher education had been restored in 1977 as part of the reintroduction of the educational goal to educate intellectuals instead of revolutionists, and therefore once again education focused on preparing students for entrance exams through disciplined studying and memorizing large amounts of text [39]. However, educational reformers considered the traditional rote-learning style detrimental to fostering students' innovative ability because it teaches knowledge (which become outdated) instead of teaching methods to acquire new knowledge and reason logically [40]. Therefore, Chinese leaders opened up to intellectuals and schools for open discussion and experimentation of suitable educational models.

Already early in the reform Chinese educational policy was heavily influenced by foreign ideas about how interactive learning could foster innovative competences. The research discipline of Comparative Education was launched to learn about education models from successful foreign countries [41]. Chinese leaders looked to a range of countries for inspiration, and parts of academic models were introduced into different parts of the higher education system ¹².

Multilateral institutions, especially the World Bank, had "extensive and far- reaching foreign influences in Chinese universities" [43] ¹³. Furthermore, Chinese educational organizations carried out student and scholarly exchange programs with universities from many different countries [44]. After China's accession into WTO in 2001, fierce competition to attract joint educational programs and foreign university branches has contributed to a further adoption of international standards [45].

The Search for a Teaching Model with Chinese Characteristics

However, explaining the development of the reform strategy as buying into the 'Emerging Global Model' ¹⁴ would be a mistake. Chinese leaders want to develop a "socialist educational system with Chinese characteristics" (author's emphasis) [48]. They do not only want to educate a modern, innovative workforce but to develop students' moral integrity and motivation to work diligently and with devotion for the motherland in order to develop a modern, Socialist China [49].

The 'globalization discourse' lends legitimacy to the reform, and major structural changes have been standardized according to international norms. Nevertheless, how to educate the modern innovative graduate is developed in negotiations among new and existing, foreign and Chinese educational values and practices¹⁵. Chinese reformers do not borrow foreign models uncritically, and China has extensive experience with borrowing foreign education models.

The current reform is one in several struggles in the 20th Century over suitable educational forms that all have caused abrupt changes in educational goals and systems¹⁶. These early reforms left the Chinese reformers in the 1980s with a complex

and for technical education to the German Fachhochschule and Technische Hochschule models [42].

¹¹ Then Shanghai University of Technology.

¹² They looked to the British polytechnic and 'open university' models and the US teaching and research university and community college models. For engineering education they have looked to Japan, for agriculture to France,

¹³ From 1979, when China took its seat in the World Bank, to 1985, eight major higher education projects, totaling approximately one billion US dollars and several thousand international advisors, were conducted in 181 influential formal higher education institutions in all provinces and autonomous regions except Tibet. These projects were not forced onto China like in many developing countries. China used its strong negotiation skills to convince the World Bank that it should have higher education programs rather than primary education in the beginning of its transition period.
¹⁴ Due to increasing standardization around the world, scholars talk about the

¹⁹ Due to increasing standardization around the world, scholars talk about the 'Emerging Global Model' of the 21st Century university – a model that among other ideas includes international norms of university managerialism and 'quality education', as well as the idea that the university should build creative and entrepreneurial mind-sets of future workers in the global knowledge economy [46] and [47].

¹⁵ See also [50], [51], and [52] for examples of negotiations in the higher education reform.

¹⁶ In 1905 the traditional system that tested the student's knowledge of the Five Classics in the civil service exams was overthrown to give way to 'modern' curriculum and categories of 'modern' knowledge. The leaders looked to Japan for inspiration to modernize the system without rejecting the cultural system. In the 1920s leaders searched the US system for ideas of how to teach practical competences as opposed to exam competences. In the 1930s European models had a large influence on Chinese education policy. However, the reforms never got a chance to fully institutionalize before the Soviet education system was introduced in a unified and top-down manner in the 1950s in order to build congruence between political, cultural and economic ideas. Finally, in the 1960s-mid-1970s a nationalist response turned the system upside down by disregarding the intellectual system and letting universities grow out from local factories with the goal to educate revolutionaries through practice. See [53], [54], and [55] for an overview of higher education reforms in the 20th Century.

institutional legacy of traditional Confucius values, modern Capitalist perspectives as well as strong Socialist-Marxist ideas to draw on and to pay attention to in the negotiations of new ideas of how education could support China's modernization.

Suzhi Jiaoyu – Education for Quality

In the 1980s, to signal a different type of education than exam-oriented rote learning the Chinese reformers resorted to a concept that can embrace the Capitalist logic, the Socialist logic and the Confucian logic, i.e. the concept suzhi jiaoyu ('education for quality' 17).

The concept is not referring to quality of education as assigned by the UNESCO, OECD, and other international players even though it is often translated into 'quality education'. It is rather a reinvention of fully institutionalized Confucian and Marxist values of teaching 'all-round' competences through practice and mastery [57]. The concept is dynamic and was further developed in the 1990s with influence from Western theory to match the requirement in the 1999 Action Plan to educate "Socialist-minded people suited to modernization in the 21st Century" [58].

It draws on a Chinese discourse that developed in the early 1980s, which refers to a blurred recipe of how to modernize China by raising the quality (suzhi) of the population to make them development agents. Suzhi is perceived to be individual, hierarchical and relative, i.e. one can develop and possess a higher or a lower suzhi [59]. Suzhi is a widely discussed and researched concept¹⁸, and the qualities that people can claim on its behalf are numerous 19 but officially it includes three dimensions: the bodily (physical strength), the moral (character) and the mental (intellect) (hence the concept of 'all-round' education) [66].

During the 1980s suzhi developed into a sacred phenomenon that Chinese leaders could use to legitimize governance of the modernization process, including teaching reform, and in 1988 suzhi jiaoyu was introduced the first time in official papers.

Suzhi jiaoyu focuses primarily on two of the three characteristics; intellect and morals. The moral education, i.e. the teaching of 'Marxism-Leninism-Mao Zedong Thought and Deng Xiaoping Theory', should permeate all subjects to provide a guiding ideology of patriotism, collectivism, and socialism that should spur students' discipline, strength, and ethics. Within this Socialist ideological frame new interactive teaching methods should be introduced to spur independent and creative thinking of the students and cultivate their scientific skills to collect and analyze information and thus

¹⁷ There is no English word that fully captures the meaning of the concept. Chinese education reformers use different translations such as 'competence education', 'character education' or 'all-round education' but I borrow the concept of education for quality' from [56] in order to signal its goal of developing the population's quality.

¹⁸ Of English language literature can be mentioned [60], [61], [62], [63], and

analyze and resolve problems. Furthermore, it would teach them to express themselves and cooperate with each other [67]. Thus with suzhi jiaoyu the leaders wanted the best of both worlds; what could be coined a 'Socialist innovative graduate'.

Educating 'Socialist Innovative Graduates' – unity or translation?

Chinese leaders explain the integration of the innovative and the Socialist as a unity. In practice this means "the unity between studying book knowledge and devotion to social practice, the unity between materializing self-value and serving the motherland, and the unity between forming lofty ideals and being hardworking." [68]. This duality is also distinct in the Higher Education Law which states that higher education should be "implementing the strategy of reinvigorating the country through science and education" and "promoting the building of socialist material civilization and spiritual civilization" [69].

The assumption behind this duality is that you can separate scientific teaching from the ideological teaching [70] and therefore China can borrow student-centered teaching methods without borrowing the ideology behind. China has a public saying for this separation, "Chinese learning for fundamental principles, Western learning for practical application" (zhongxue wei ti, xixue wei yong) [71].

In reality the borrowed methods are not separate from but integrated into Chinese values. An example of how new methods are translated through the lenses of Chinese teaching values is Howard Gardner's 'Multiple Intelligence Theory', which has inspired a range of Chinese books and conferences as well as a national project. It is translated from a theory of how to nurture individual inborn talents of the child through different learning strategies to a theory of how to teach a child multiple skills through disciplined mastery [72].

Consequently, in public rhetoric Chinese teachers have to break with the rote-learning teaching style to nurture students' innovative ability, which is necessary for China to become competitive in the 21st Century's global knowledge economy. Yet, the actual education concept developed, suzhi jiaoyu, is drawing on a traditional Chinese education concept of all-round education, which is broad enough to cover an adoption of the new scientific teaching style as well as a continuation of Socialist education²⁰. In reality foreign teaching methods are interpreted through a lens of Chinese educational values, and these methods are therefore translated in the adaptation process.

TRANSLATING INTERACTIVE TEACHING INTO PRACTICE

The teaching reform strategy at the case university, XUFE, is consistent with the national discourse of the need to foster Socialist innovative graduates. This paper, however, does not focus on this integration but on how the new interactive teaching methods to foster students' innovative skills are translated when meeting existing teaching structures and values.

<sup>[64].

19</sup> If one for example does not have a higher education, one can claim *suzhi* on appearance (e.g. fashionable haircut or accessories) instead. Like with Bourdieu's concept of capital the value of qualities is rated differently by different groups and in different fields. See e.g. [65].

²⁰ The integration of the 'red' and the 'expert' has been tried in various forms in past reforms, however, has never been successful. This is partly because they require vastly different structural setups and therefore are difficult to combine

Developing students' 'innovative spirit' is an important goal if measured by its frequency in XUFE's strategy papers and on the website [74], [75], and [76]. In a speech to colleagues in 2004, XUFE's President, who is proactive in higher education reform discussions in the province, argues that innovation has become "the major force of economic development", and the historical task of higher business education should, therefore, be to cultivate the innovative spirit of the students in order for them to be successful [77]. The President also practices the norm of borrowing foreign methods and adapting them to the Chinese context [78].

The following example of how XUFE attempts to implement the borrowed method 'interactive lectures' shows how existing values, structures, and practices change the outcome of the method and actually reproduces the fundamental institutional conditions for learning.

Interactive Lectures with Chinese Characteristics

In order to teach students how to produce results rather than just demonstrating results to the students XUFE has borrowed the two methods: case studies and class discussion from American management education [79].

The introduction of case studies with the intention of motivating the students and teaching them 'real world' knowledge has been well received by teachers. XUFE's teachers often use foreign books, and when cases do not fit the Chinese reality they find or create Chinese cases [80].

However, in order to use case studies it is not necessary to apply the American style of discussing cases in class, and XUFE's teachers most often adapt case studies to the traditional Chinese lecture style where teachers inform and students listen. The typical way to handle cases is that the teacher explains them and asks the students short, central questions that these answer in unison. Sometimes students are asked to solve a case in groups between classes or in a short paper for next class but only rarely do they present and discuss it in class [81]. That is, the competence-building act of class discussion is not carried out in practice, and teachers are reproducing the existing teacher-centered lecture style but adding modern components to it like the use of PPT and real word knowledge.

Changing practice from a teacher-centered to a student-centered teaching is far away from the teachers' and students' practical embodied experience with lectures. Unlike many of the other reform elements that XUFE has introduced, which could be implemented in accordance with the traditional teaching style, this is not the case with interactive lectures.

Negotiating New and Existing Shared Beliefs

One issue on the cognitive level is the difficulty of changing shared beliefs of the appropriate teaching style, the ideal teacher, or student-teacher relationship. The traditional lecturing style is still to a certain degree considered an important strength of the Chinese teaching system by many of the teachers because it provides a systematic introduction to knowledge [83]. What is seen here is that the criterion that an 'educated person' should have a high level of factual

knowledge has survived the campaigns for interactive teaching methods²¹.

When asked about how to educate innovative methods, most teachers answered that students should develop these in extracurricular activities such as singing, playing sports or volunteering in a student union [84]. Thus, through extracurricular activities students' should learn how to work with the knowledge that they received in class.

Chinese teachers have also traditionally had the status of the expert, and opening up for discussion in class about appropriate solutions for a case you will have to accept that you do not monopolize the answer and might lose face. Instead, the teachers resort to the controlled questioning method of approaching the whole class with short questions, which is an existing teaching method in which teachers stay in control [82].

The result is that the belief that factual knowledge lays the ground for innovative thinking constrains a change away from the cramming method, which is also concluded in a study of a Chinese foreign language school [85]. It also has the repercussion that the criterion that a good teacher delivers a flawless speech in class has continued.

The Constraining Exam System

Another big obstacle to interactive teaching is China's exam system, which is officially criticized for rewarding disciplined studying and rote-learning [86]. Thus, Despite the rhetoric and apparent belief by students, parents, and teachers alike that test-centered learning is no longer the most efficient learning style to teach the competences needed in the 'information age' 22, the practice of studying excessively hard and memorizing books is reinforced due to the fact that the examination form has great impact on curricula and teaching methods [89].

Also the elite thinking have been reproduced, and the status of the university on the graduate's certificate is extremely important for his employment prospects, which increases the pressure to get into a prestigious university [90]. Combined with the exam system, it has given birth to the practice of *suzhi* cultivation. Numerous magazines and books on 'how to cultivate your child's suzhi step-by-step' started to flood the shelves in Chinese bookstores in the 1990s [91]. The cultivation approach reinforces the perception of education as something you learn to master though hard work, and thus counteracts the reform to interactive learning.

The Priority of Practical Skills

A last negotiation, which should be mentioned, is how the competitiveness of the individual university shapes the interpretation of the national strategy. For XUFE the competition for students is important, and students in turn look at the university's employment statistics [92]. XUFE considers its position in the higher education market to be in-between comprehensive universities with profound theoretical ability and

²¹ That this norm is deep seated can also be seen in that the character for study in Mandarin is the same as for imitate.

²² This type of examination was grounded back in the civil service exams where the student was evaluated on how well he knew the Five Classics by heart [87]. According to Shaw "It produced men of sound common sense and judgement but also men without imagination and originality" [88].

vocational colleges with profound practical ability; i.e. its students should have the ability to transform theory into practice [93]. Labor market reports, recipient companies, and alumnae are consulted in the process of creating new teaching plans [94]. Therefore, XUFE focuses more on the national goal of 'practical capability' than of 'innovative spirit'²³. The focus on practical skills is seen in a priority of laboratories and case studies and in the high presence in interviews, whereas innovation is more or less absent and not operationalized [95].

The case showed how persisting values and structures shape the implementation of interactive lectures into a Chinese version. The result is that students are taught practical skills rather than independent thinking.

CONCLUSION

Even though China's higher education reform is legitimized by the global knowledge reform, the innovative graduate is constructed in a particular Chinese context. In the 1999Action Plan "...a new type of Socialist-minded people suited to modernization in the 21st Century." is asked for [96]. The educated graduate should on the one hand be individual and creative and on the other be highly patriotic and disciplined, which is what I term the 'Socialist innovative graduate'.

The concept of 'education for quality' (*suzhi jiaoyu*) can be said to integrate interactive teaching methods within a traditional teaching norm of 'all-round' education, and the interpretation of the innovative graduate cannot consequently be understood as a break with the past.

When translated into practice the introduction of interactive learning is negotiated with existing criteria for 'quality education' and many teachers at XUFE are not willing to compromise the strong factual knowledge profile. Combined with the persisting exam system, which reinforces teacher-centered learning, and XUFE's interest in teaching practical skills, graduates therefore so far tend to be more problem-solving and practical than independent and creative.

On the other hand, the process is dynamic, and I see indications of value changes. Some teachers (of those who have studied or been visiting scholars abroad) have adopted the value of student-centered learning [97]. These teachers have the potential to be drivers of change if they can get the room to manoeuvre. Students might also be drivers of further change. Most of the students have embraced the interactive methods in foreign teachers' classes, and argued that they were bored in teacher-centered lectures [98]. Worth noticing is ref. [99]'s conclusion that a new generation of Chinese is thinking beyond copying Western products and adding Chinese characteristics and is instead aiming at setting world-class standards through a unique Chinese path of development.

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 $^{\rm 23}$ The core competences referred to in the Higher Education Law, Article 5.

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