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Alistair R Anderson and Xiuxiang Zhang

Enterprise education with Chinese characteristics; policy, practices and uneven development in PRC

Introduction

Although enterprise education is well established in many countries (Fayolle, 2013), it is still fairly novel in China. From tentative beginnings some 15 years ago, the accelerating rate of dissemination of university enterprise programmes is such that many Chinese universities offer some form of entrepreneurship programme. In 2010, HEIs hosted more than 20,000 entrepreneurship activities (Wang et al, 2012). This growth has taken place in a context which is both extraordinary and unique. The socio-political environment has dramatically changed from one where entrepreneurship was anathema, even illegal, to one where entrepreneurs now hold influential political positions (Chen et al, 2011). The economic environment was transformed from a rigid command economy to one where China's remarkable economic growth was founded on an ability to deliver good, cheap products that met international market demand. Yet this first tidal wave of economic change may be running out of steam as the singular benefits from a cheap productive workforce become internationally challenged (Kriz, 2011). These drivers may need to be replaced by an entrepreneurial capacity to innovate and an ability to work smarter rather than simply harder (Choi et al, 2011). This suggests that China has to recapture historic innovation and universities, especially the top-tier institutions, should play a critical role. Moreover, economic growth in China has accompanied a shift from elite to the massification of higher education (Chan and Ngok, 2011; Wu and Bao, 2013). However, the increasing number of university graduates is matched by worrying levels of graduate unemployment (Ren et al, 2011), especially from less prestigious universities. Entrepreneurship, as starting a new business (*chuangye*), may offer a solution as self-employment, or for creating new jobs (Tang et al, 2014). Thus entrepreneurship education has considerable policy appeal (Bernhofer and Li, 2014; Jack and Anderson, 1999). Nonetheless, these developments take place in a political context that values control over autonomy and where this control is mirrored in the hierarchal structure of higher education. Hence we believe it will be both interesting and useful to examine how entrepreneurship education is emerging in response to policy in the changing Chinese environment and how it is shaped by the unique context. Thus, the purpose of this paper is to examine the nature and practices of entrepreneurship education in China.

The study examines how entrepreneurship education has emerged in the unique context of the Chinese socialist market economy. We first discuss the Chinese economic, social and political system that underpins both entrepreneurship and Chinese Higher education. This forms the context for our description of the nature and variety of entrepreneurship education. We then consider some of the practical and pedagogic issues that have arisen. Although entrepreneurship education is now a worldwide phenomenon, the unique circumstances in China seem to have shaped how entrepreneurship is taught. In particular we explain the importance of the ranking and the location of universities, especially of the elite institutions and how this affects the distribution of resources and entrepreneurial talent.

Accordingly the paper contributes descriptively in showing how policy and university management practices help to explain the unequal distribution of expertise and the consequent implications. The

paper contributes conceptually by relating how well the sociological, political and educational constraints associated with entrepreneurship education are addressed in a socialist market economy. We argue that the concern for centralised control, manifest in the hierarchal structure of Chinese higher education, creates both ideological and pedagogical problems in delivering quality entrepreneurship education across all HEIs. Chinese authorities may have grasped the mettle of the need for educating future entrepreneurs (Li et al, 2003) but inequalities in the system have resulted in a very variable provision; unevenly distributed in space and disproportionately allocated by prestige and rank.

Our method was largely desk research. We studied public documents, university web sites and material in the public domain. Our case studies were similarly desk based, but augmented by interviews and discussions.

The paper first discusses the uniqueness of the Chinese context and some of the ensuing paradoxes for entrepreneurship and its promotion. We then describe the structuring of universities and its management followed by our empirical data about enterprise education. We offer a broad overview that demonstrates considerable disparities in entrepreneurship capacity by university rank and location. We then offer two comparative cases to illustrate the details of processes. Finally we discuss the policy, pedagogic and managerial issues that are demonstrated by our analysis.

Entrepreneurship emergence- enigmas in the socio-political and economic environment

The context for entrepreneurship in China is complex and contradictory. Nolan (1993) talks about the Chinese Puzzle, how did China's economy grow so fast when its institutions and policies are so contrary to Western theory and policy? The political economy is authoritarian and economically centralised and from an entrepreneurial perspective, is fraught with institutional gaps and ambiguities. Institutions are seen as unpredictable (Yang and Li, 2008) leading Lu and Tao (2010) to conclude that the institutional environment has been very unfavourable for China's private enterprises. But paradoxically, Yang (2012) suggests that it is these very conditions that have induced Chinese entrepreneurship. He argues that entrepreneurs are agents for institutional change; *neng ren* (capable men) who (2012: 7) "have translated institutional rules into engines of production". Rather than negotiating institutional change, entrepreneurs and the state explore how they can make the most of ambiguous rules and policies. Institutions are well established as entrepreneurial influences (Harbi and Anderson, 2010), whilst change is an entrepreneurial milieu where entrepreneurs are uniquely endowed to bring about change (Anderson and Warren, 2011). Thus Yang's convincing point is that China's entrepreneurs have taken advantage of, rather than been constrained, by the gaps in markets and institutions.

Government and institutional support for enterprise has been highly variable. Landes et al (2012), taking a long historical view, point out that in 1400, Chinese GDP per capita at \$500 was greater than in Europe (\$430). They describe the flood of inventions in printing, shipbuilding, spinning and a "magnificent astronomical clock during the Tong and Sung periods. Chen and Kenney (2007) propose that at that time China was the global leader in technology. Needham (1954) describes the Great Divergence between Europe and China; in spite of this advanced Chinese technology, development failed to take off. The cause was the constraints of the then prevailing Chinese institutions. More recently, Malik (1997) tells us how before Deng's reforms, Chairman Mao's regime had criminalised enterprise. The Five-Anti campaign actually set a quota that 90% of private business should be found guilty of some given economic crime. In practice some 78% were prosecuted and found guilty. Nevertheless, despite the strength of centralised policy and its dislike of independent enterprise, even in the late Maoist period we can recognise an upspring of enterprise. The so called

“red hat” enterprises (*hong maozi*) were officially collectives, but were often a front for successful enterprising individuals (Chen et al, 2011).

Aside from the political economy, Chinese culture’s role in entrepreneurship is also problematic and paradoxical. Lee and Peterson (2001) concluded that Chinese culture does not support entrepreneurship, so that China seems an unlikely environment for the emergence of a strong entrepreneurial orientation. However, they also pointed out that a paradox exists in that the Chinese have been entrepreneurial throughout their history. Similarly, Liao and Sohmen (2001; 30) argue that the dominant Chinese culture “is, if not antithetical to entrepreneurship, at least unsupportive of entrepreneurship”, but that there is “a strong subculture of entrepreneurialism with values similar to those of western entrepreneurs.” Redding (1993) described this as Confucian Dynamism. The role of culture for promoting entrepreneurship is never clear cut (Klyver and Foley, 2012) and given the uniqueness of Chinese culture (Peverelli and Song, 2012) we cannot assume similarities to a Western entrepreneurial culture. Nonetheless there are cultural artefacts and outcomes, including ideology, that indicate entrepreneurship may not appeal to all.

Lu and Tao (2010) describe the ideological biases against private sector development before and throughout China's economic reform, such that entrepreneurship is often referred to as “jumping into the sea”. Atherton (2008) explains how private entrepreneurs were subjected to *ad hoc* and illegal taxation charges as well as the risk of expropriation of their venture through the ‘fat pig policy’, a situation in which the state waits until businesses have become sizeable and then takes them over. Moreover, in the early stages of reform, Anderson and Lee (2008) note that many of businesses were run by individuals excluded from the mainstream, including criminals and illegal immigrants. Xia (2009) claims the public perception of entrepreneurs during the early period of reforms was of criminals recently released from prison. Certainly, it has been suggested that during this period, the only way to succeed entrepreneurially was through unconventional paths, such as capitalising on relationships, even by bribery and corruption (Tsang, 1998; Blackman, 2000). Harwit (2002) concludes that Chinese society, as late as the 1990s, had highly negative perception of those trying to build their own company. In all, culture and its practices painted an unappealing picture for promoting entrepreneurship.

Moreover, informal but normative institutions (Ren, et al, 2011) such as family are unlikely to support entrepreneurship. There will be strong parental pressure for a steady job (Du Guirong and Lei, 2011) and preference the “iron rice bowl” (Liao and Sohmen, 2001). Furthermore, Liu and Liu (2011) argue that China’s one child policy has created “sheltered” individuals whose sense of self and privilege are antithetical to the risks and efforts required for entrepreneurship. Indeed a report by Peking University (2011) shows that most top graduates who go on to graduate school prefer the job security of working for a large Chinese firm or become a public servant. Accordingly the appeal of an entrepreneurial career is far from hegemonic and often contentious (Dodd et al, 2013), so that starting one’s own business was seen as a last resort.

Nonetheless, the marked shifts in attitudes, culture and economy from when China first opened its doors to reform in 1978 are well documented (Li and Matlay, 2006). For entrepreneurship, Anderson et al (2003) recount how the literature reports on the unleashing of the “traditional” entrepreneurial spirit; springing up in all corners of China and akin to a genie released from its lamp. Moreover, as Li et al (2003) claim, entrepreneurship education has come to play an important role in the future success and growth of the Chinese SME sector.

The Chinese Higher education system; ranking and location

Li et al (2011) describe the remarkable expansion of higher education when enrolments increased fivefold from 1998 to 2005 and the number of degree awarding institutions doubled. They point out that this was a policy, rather than a market driven decision. As such, this has implications for student employment including a mismatch of skills and demand. Moreover, these increases also led to a policy decision to prioritise resources to particular universities. Mok and Chueng (2011) describe “grooming selective universities into world-class institutions by schemes such as the ‘211 Project’ and the ‘985 Project’ which focused public funding on pumping enormous extra resources into China's best universities to improve quality to international standards, and ideally, develop some to become world-class. The Knowledge Innovation Program, promoted by the prestigious Chinese Academy of Science in 1998 redirected resources to create a handful of world-class institutes. Yang and Welch (2012) describe how, more than any other country, China has been deliberately selective, choosing a small number of universities for intensive development and substantial investment. Given China’s approximately 3% of GDP education expenditure, (for comparison, China had devoted roughly 30% of its GDP to physical capital investment, Constant et al, 2013) this systematic selectivism may foster elite institutions but detract resources from the more numerous but less prestigious universities. Moreover, Vickers (2009) argues that educational prioritising of economic growth has left social equity on the back burner.

Yang and Welch (2012) describe how a university’s resourcing is determined by their status. The most selective and hence highest ranked are funded as project 985; selective universities as project 211 and the least selective are simply 4 year institutions. There are 757 state funded universities in China. Project 211 was introduced in 1995 and followed by Project 985 in 1998 (98 represents the year and 5 the month). Project 985 is further divided into the 9 top universities (the C9 league formed in 2009) and 30 other elite institutions. Project 211 includes these elite universities, but with an additional 82 top ranked universities. In 2011, both Projects were closed to new entries (Yang, 2010). Zhao and Zhu (2010) explain Project 211 universities make up only six percent of China’s higher education institutions. However they train 4/5 of doctoral students, 2/3 of graduate students and 1/2 of international students. They account for 85% of the country’s key subjects, 96% of national key laboratories and 70% of scientific research funding. Similarly Li et al (2011) describe how project 985 universities had about 1% of total enrolments but almost 50% of research funding. Thus these groups (Projects 211 and 985) represent a very well-funded elite group of universities.

The unevenness of higher educational provision is not only by institutional ranking, substantial geographic variations exist. China’s uneven development with the west and centre lagging behind the highly developed eastern coastal regions is mirrored in higher education. Xiao and Liu (2014) note that inequality across China is listed as a most outstanding issue in educational development for the period from 2010 to 2020 (MoE, 2010); thus far, this policy does not seem to have worked. The Global Entrepreneurship Monitor (Kelley et al, 2012) reported an increase in regional disparity in entrepreneurship activities; from a ratio of only 1 in the less developed regions to 20 in the developed regions, the disparity has grown to 1 in 37. In Table 1 we show that whilst population distribution is reflected fairly evenly in the number of HEI’s, the best funded institutions dominate in the developed east. Almost two thirds of the top universities and over half of the 211 project universities are located in the east. It is also worth noting that all 211 and 985 universities offer PhDs, but only some 67% of other institutions; again the majority of universities.

Table 1. Regional distribution of population and HEIs in China (Percentages)

	Population %	Public HEIs	Project 985 HEIs	Project 211 HEIs
East region	41.26	46.37	61.54	54.79
Central	31.70	28.00	20.51	20.55
West region	27.04	25.63	17.95	24.66

Totals	100	100	100	100
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All figures are percentages of totals, data from Ministry of Education and National Bureau of Statistics, Beijing 2013

Entrepreneurship education in China

We turn now to consider business education in general and entrepreneurship education in particular. First, however, we note how the state had given priority to scientific and technical education rather than business (Li et al, 2011). In part, this helps to account for the mismatch between employer demands and student supply, but the graduate unemployment problem redrew attention to enterprise education. Yet a distinction between the elite and others is also evident in MBA offerings; all Project 985 universities offer MBAs; 83% of Project 211 and some 85% of the other universities sampled. This is nonetheless a remarkable change if we have in mind that under the planned economy there was simply no need for typical business skills such as marketing. Moreover as Zhang (2013) points out that in the early stages of educational reforms, management was treated as a sub discipline of economics. However, by 1991 the first MBA's were launched in nine pilot universities (Tsui et al, 2004). Thus we see recognition of the importance of teaching business disciplines. Notwithstanding this point, there was an emphasis on reforms in the tertiary education system with the stated long-range goal of an economy driven by advances in science and technology. For example, in 2006, the government adopted the Medium and Long Term Science and Technology Strategic Plan to plot the course of science and technology policy in the coming years (OECD Review, 2007).

Nonetheless, undergraduate business education is now pervasive in Chinese HEIs and entrepreneurship education has begun. We take as our starting point the Ministry of Education's (2006) four goals for entrepreneurship education in China;

- It should expose students to the challenging prospect for employment and raise their entrepreneurship awareness.
- It should lay a solid foundation of knowledge on entrepreneurship.
- It should improve college students' entrepreneurial skills and abilities through both classroom learning and beyond.
- It should reduce entrepreneurial risks among college students

These aims reflect two dimensions of entrepreneurship education; knowledge for enterprise and knowing about entrepreneurship. The first is essentially training for entrepreneurship, so that students who start a business are able to run a better business. The second goal is to raise awareness of being enterprising (Harbi et al, 2009). Both are obviously important, but entrepreneurship is nowadays recognised as complex and complicated (Anderson and Starnawska (2008) and may call for different skills at different stages of the enterprise (O'Conner, 2013). Moreover from a policy perspective, the obvious and understandable economic benefits of entrepreneurship may mask even neglect, the social precedents and social processes of entrepreneurship in regional contexts. Thus we argue that entrepreneurship education cannot be "a one size that fits all". This point is particularly relevant in the context of China's regional variation.

An unbalanced pattern is evident in entrepreneurship education. We found that currently some 82% of Project 985 and 77% of Project 211 universities offer entrepreneurship programmes, but were surpassed by the 93 % of the less prestigious offering entrepreneurship education. Enterprise programmes include courses, business plan competitions and sometimes a "business incubator" or a science park. There may be several reasons for this difference, but we suspect it is probably a result of universities following government policy and the associated funding, coupled with the more limited discretion of lower ranked institutions. Table 2 summarises the situation. We note the

provision of science parks, where the more prestigious universities predominate. We see this as evidence of better access to funding. What we see as remarkable is that ordinary HEI's are over represented in providing entrepreneurship teaching, but markedly under represented in entrepreneurship research. For us this raises a significant problem, on what basis, from what sort of knowledge, if not research or practice led, do these universities use to teach entrepreneurship?

Table 2. Comparison of entrepreneurship education among three types of HEIs

Percentage	HEIs	Business School	PhD	MBA	Ent Education	Ent Research	"Science" Park
All sampled	100%	98.02	90.5	87.58	81.7	28.1	73.2
Project 985 HEIs	26%	100	100	100	82.05	64.10	97.44
Project 211 HEIs	48%	95.89	100	83.56	76.71	12.33	69.86
Ordinary HEIs	26%	100	67.5	85	92.5	22.5	57.5

If we reintroduce a regional dimension, we see significant drift in entrepreneurial capacity as we move west. In an attempt to demonstrate the extent of difference we show a ranked order of capacity and provision in Table 3 below.

Table 3. The order of entrepreneurship education, research and provision of enterprise parks

	Institution	Ent Education %		Institutions	Ent Research %		Institutions	Enterprise Park %
1	East 985	95.83	1	East 985	66.67	1	East 985	100
2	East ordinary	94.74	2	Central 985	62.5	2	West 985	100
3	East 211	92.5	3	West 985	57.14	3	Central 985	87.5
4	Central ordinary	91.67	4	East ordinary	31.58	4	East 211	80
5	West ordinary	88.89	5	West 211	16.67	5	East ordinary	73.68
6	Central 211	80	6	Central ordinary	16.67	6	West 211	66.67
7	Central 985	75	7	East 211	12.5	7	Central ordinary	58.33
8	West 211	61.11	8	West ordinary	11.11	8	Central 211	46.67
9	West 985	42.86	9	Central 211	6.67	9	West ordinary	22.22

Interestingly, from a regional policy perspective this concentration of entrepreneurial excellence in the developed east makes less sense because the east is already home to the largest number of private businesses. It seems, as table 4 demonstrates, that unevenness is perpetuated. The East region is already has almost twice as many private businesses as the Central and West regions combined. Of course it has been pointed out (Eesley, 2009) that China's economy is organised regionally rather than centrally. In turn this has important implications for how well entrepreneurship is supported.

Table 4. Number of privately owned enterprises by region (2012)

Region	Privately owned enterprises
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East region	4297,251
Central region	1252,739
West region	1002059

Nonetheless, by the status of the university and by location, there are distinctive differences in the characteristics of entrepreneurship educational capacity. However, this broad overview tells us little about the process or practices of entrepreneurship education, yet raises some important questions. To address these gaps, we offer two comparative case studies. The first is a long established elite university- Tsinghua- based in Beijing and the other, a newer ordinary university- Huanghuai- based in “medium sized” city in Henan Province in Central China. Our purpose is not to evaluate entrepreneurship teaching, but to examine the different processes and access to resources. However, in this light, it may be useful to first briefly consider entrepreneurship teaching in general.

Entrepreneurship education- Pedagogy and problems

Although there is considerable international policy support for teaching entrepreneurship (O’Conner, 2013), establishing the most effective pedagogy is more problematic (Blenker et al, 2013). In part, this is because of the breadth of the concept, the contested definitions and a shift towards a broader concept which emphasizes entrepreneurship as a way of thinking and behaving (Leitch et al, 2012). More importantly, the very nature of entrepreneurship as an innovative practice means that there can never be a single formula for entrepreneurship.

There is some agreement that entrepreneurship education has two facets, *about entrepreneurship* and *for entrepreneurship* and that these require quite different pedagogic approaches. Teaching *for* entrepreneurship is largely experiential, often placing the student into the entrepreneurial roles of being an entrepreneur to learn through the experience of being enterprising. Neck and Greene (2011) include actually starting a business, learning design principles for new venture practice, engaging in serious games and simulations and encouraging reflective practice. Mueller and Anderson (2014) argue that this experiential form of learning replicates the real world of uncertainty, but that applying the pedagogy requires specialist skills. Learning *about* entrepreneurship concentrates on delivering theoretical understanding and appreciation (Anderson and Jack, 2008). Here expertise is required to explain the different explanatory scope and power of potentially conflicting theories about entrepreneurship.

More broadly, powerful arguments have been made for an appreciation of connecting entrepreneurship (Anderson et al, 2012) with its context (Harrison and Leitch, 2005.) This contextualisation by milieu may be especially important in the uniqueness of the Chinese context and reflect specific academic skills (Anderson, 2011). What is agreed is that a functionalist disciplinary approach (Hjorth, 2011; Anderson, 2014) is ill suited to teaching entrepreneurship, but yet this is the typical Chinese pedagogy (Fan et al, 2013). Fayolle (2013) describes this as trying to “filling the pail” rather than “igniting the spark”.

Our comparative cases

Tsinghua University

Tsinghua is a member of the C9 group, the small elite group within Project 985 universities and is sometimes described as the Chinese MIT. Accordingly it provides us with an example of a well-funded and well established university for our comparison.

Tsinghua, which operates under the jurisdiction of central government, was established in 1911. Originally named "Tsinghua Xuetang" (Tsing Hua Imperial College) it was initially supported by the US government (Zou and Zhao, 2013). In 1952 Tsinghua University became a multidisciplinary polytechnic university specializing in training engineers. In 2012, the Graduate School of the People's Bank of China (PBC) merged into Tsinghua University as Tsinghua University PBC School of Finance. Today, Tsinghua is focused on engineering, sciences, liberal arts, management and law. The university has 14 schools and 56 departments with faculties of science, engineering, humanities, law, medicine, history, philosophy, economics, management, education and art. The University currently has 13,100 undergraduates and 12,800 graduate students. Many of Tsinghua's graduates have become outstanding scholars, eminent entrepreneurs and statesmen. This prestigious reputation means that it selects the very best of prospective students from across China.

Tsinghua offered the first MBA in China and also became the first university to offer entrepreneurship courses. Tsinghua also launched the first Chinese business plan competition in 1998. Tsinghua was chosen in 2002 by the Ministry of Education to be one of the nine HEIs participating in an entrepreneurship education pilot programme, and was subsequently selected as one of six HEIs for the KAB (Knowing about Business) pilot programme launched by the International Labour Organisation in 2005.

Zhou and Xu (2012) explain how Tsinghua University took advantage of its international networks to promote informed entrepreneurship education and now has active faculty and student exchange programmes with international universities. In September 2009, Tsinghua University and the University of California at Berkeley jointly established the Tsinghua-Berkeley Global Technology Entrepreneurship Program (GTE), which teaches core concepts in technology entrepreneurship and innovation. Moreover, Tsinghua has an active and respected entrepreneurship research profile. It hosts the China Research Center for Entrepreneurship and runs the Global Enterprise Monitor.

As is appropriate for its MIT type of approach to entrepreneurship, Tsinghua University collaborates with two science parks; Tsinghua Science Park, the largest university science park in China with over 400 corporations, including Microsoft, Google and Proctor and Gamble. It also works with the Haidian Incubator, a park for new enterprises started by overseas educated returnees. The university has garnered investments from both Chinese and international agencies which provides consultation and funds for student entrepreneurs. Zou and Zhao (2013) propose that the advantages of Tsinghua's joint industry laboratories include additional research funding, student job opportunities and as an educational resource. Chen and Kenney (2007) report that by the early 1990s, more than 190 companies had been created by the professors and staff at THU or in partnerships with companies outside the university.

Tsinghua has 27 entrepreneurship faculty involved in research and teaching, including 9 full professors. Courses offered include 4 undergraduate entrepreneurship courses, 8 post graduate and 7 specialist MBA Modules.

We conclude that entrepreneurship teaching at Tsinghua is well informed and well grounded in the leading edges of theory and practice, not least in technological entrepreneurship. Moreover, its connections help ensure that this position can be maintained.

Huanghuai University

Huanghuai University is an ordinary public university operating under the jurisdiction of the local government. It was founded in 1972 and is located in Henan province, a less developed central area of China. Originally a teacher training institution, Huanghuai was combined with other smaller

institutions and became a comprehensive university. This was part of the shift from the old Soviet inspired system where different universities who specialised in specific disciplines such as engineering were combined to become more like the multi disciplinary institutions of the west (Xin & Normile, 2008). Huanghuai is thus typical of other prefectural-level city universities. Currently, there are 18,000 full time students and 13,000 part time or online students. It is the only degree awarding university in Zhumadian city (pop. 8 million) and most students are from the local Henan province.

Huanghuai University's vision statement is to be an applied international university serving regional economic development and a model university in entrepreneurial education. In 2013 it was chosen by the Ministry of Education to be one of 31 application-oriented pilot reform universities; a strategic research group for applied higher education transformation. Media, including CCTV, China Education Daily and the website of the Ministry of Education have all praised the university for its outstanding performance in entrepreneurial education.

In practice, entrepreneurship and innovation education was initiated in 2011 by the International College as a window for international cooperation. The College fosters student exchange links with institutions in the UK, India and the USA through joint education programs in business study and computer science. Initially they offered an elective entrepreneurship course for 1st year students which became compulsory for all 2nd year students in 2013. Teaching faculty are three young administrative staff from the student affairs office who had originally studied psychology and economics. There are no textbooks for this course. Teaching materials are mainly drawn from websites and books selected by the teachers. The teaching process is largely based on games, such as role playing and question and answer games. Course evaluation is group based and broadly defined to include an art design, a model design or a more formal essay. However, we note the students' active participation and their positive response to the courses.

Entrepreneurship teaching is part of a new teaching and research office set up in 2014 for innovation education. This office has been supported by two experts from KAB (the Knowing about Business programme) who provided a week long KAB training program for 35 staff. Participating staff came from a range of disciplines including mathematics, engineering, economics, management, arts and biology plus some administrative staff. After this training, the faculty are intended to become innovation teachers within their own departments. A new text book has been developed and pedagogy will be very flexible with the slogan of "learning by playing, doing by playing, and learning by doing". The college also supports *Yi Team*, a group of IT faculty and students who provide website design and animation. Entrepreneurship research is in its very early stages and even general business research publications are largely limited to provincial level publications,

Huanghuai also completed the construction of an entrepreneurial park in 2012. Currently no incubating facility is offered but an annual fund of 500m RMB is available. A Centre for Entrepreneurship is planned and the university's strategic plan has given entrepreneurship and innovation education as a priority. Nonetheless, the head of entrepreneurship described progress using Deng Xioping's famous quote during the reform period, "we are crossing the river by feeling for stones".

We conclude that entrepreneurship education at Huanghuai is still in its early stages. Expertise in entrepreneurship pedagogy is very limited and little research is being conducted to inform teaching. Although international links exist, they do not seem to form a channel for extending entrepreneurial knowledge. Whilst the intentions are very good, there is not yet much evidence of the establishment of expertise or of the capability to teach entrepreneurship well.

Discussion

Our review of entrepreneurship education in these two universities has demonstrated two very different sets of capabilities. The rank and privileged cosmopolitan position of Tsinghua has enabled it to develop expertise that allows it to address the entrepreneurial policy imperatives very well indeed. Students are informed about entrepreneurship in its full international dimensions and given the knowledge that will enable them to launch successful new ventures, should they decide to do so. In contrast, provincial Huanghuai is only beginning to learn what may be important. It seems to lack knowledge about entrepreneurship itself and also about useful pedagogy. Knowledge spillover from other Chinese institutions is minimal, so that the existing Chinese expertise is apparently not shared. In turn, we wonder how well it can deliver a full appreciation and understanding of entrepreneurship to its students. This is not to deny the enthusiasm of management and faculty, but it is a difficult path to build expertise from such an impoverished base.

Of course we are comparing two very different institutions and their respective academic endowments could hardly be more different. But both are pursuing similar policy directives, so we might expect to see much more convergence on how these are managed and put into practices. Interestingly, both institutions have followed up on a strategy of internationalisation. However, Tsinghua has made its international connections work; whilst for Huanghuai it seems to be little more than a background to its entrepreneurial intentions.

Conclusion

We first considered the context for entrepreneurship education in China and found it unique and peppered with paradox. Culturally there may be distaste for entrepreneurship, but there is also an inconsistent but powerful undercurrent of entrepreneurial drive. We noted how graduates and students are likely drawn to salaried positions, but that graduates are in oversupply. China's extraordinary economic growth was partially fuelled by entrepreneurial effort, but in a very ambiguous and uncertain political context. Nonetheless politicians have now recognised a need for entrepreneurship to create new businesses and new jobs and to provide the innovation necessary to maintain growth. Consequently policies have been developed to encourage entrepreneurship by promoting entrepreneurship education.

We saw how science and technical subjects had originally dominated the university curriculum, so that business as a topic is relatively new. Governments appeared to have recognised the importance of business education for Chinese economic growth. We see the interest in entrepreneurship education as a continuation of this recognition. Indeed students are encouraged to not just consider a job in business but to contemplate having their own business. The policy shifts reflect concerns about employment for graduates, as well as the possibilities from growth. Perhaps then it is unsurprising that the leading technological universities were selected as candidates for extensive funding. Not only are these leading universities in science and technology, but they may also be the most fertile grounds for developing technological innovation in entrepreneurship.

Nonetheless, there are significant consequences from this selection process. When we examined how these policies have played out, we found remarkable differences in the current abilities of universities to deliver. Because of the status accorded to the elite universities they are able to tap into rich seams of resources. We saw an amplification effect that compounded the benefits of rank. In contrast, although the less privileged universities also followed policy, but with much more modest resources. Their limited endowments have not led to an agglomeration of expertise and knowledge. Instead their lack of expertise seems to have led them to try out entrepreneurship education by learning for themselves.

We commented on how policy was also concerned with regional disadvantages and saw how the number of private enterprises was much lower in central and western regions. We know that many, especially many new small firms are an important component of regional development, yet the uneven distribution of enterprise education may perversely work to compound this regional disparity. The implications from our findings are that the ranking and ensuing resource allocation policy process for universities is likely to perpetuate regional economic and social development differences. The policy of concentration on elite institutions will further the promotion of stronger, more technological enabled enterprises; but it does so to the cost of equalising entrepreneurial enablement across regions. Consequently there may be a need to adjust the policy and resource allocations for entrepreneurship education to address social as well as market needs.

Finally we note the extent of demand for entrepreneurship in China. This is not limited to new firms or new technologies for economic growth. Entrepreneurship, as a change process, can supply the means to address increasing problems of pollution, health and safety at work and even social well-being. But policy alone does not seem to be enough to ensure the continued emergence of well-informed enterprise. We argue that entrepreneurship education itself also needs to be well informed and well managed.

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