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Can China Keep Rising in the Age of Globalization?: Chinese Students' Learning and Living Experience at Two "World-Class" Research Universities in East Asia

Roy Y. Chan

Boston College

roy.chan@bc.edu

Abstract

"World-class" research universities have long been a priority in the educational, corporate, and political spheres in China. With the establishment of the Outline of China's National Plan for Medium and Long Term Education Reform and Development (2010-2020), China seeks to develop globally competitive research universities that are based on position in the global rankings. In this article, the author examines the role of college environment (e.g., academic, campus, interpersonal) on college student's learning and development relative to China's quest for "world-class" universities. Utilizing Jamil Salmi's (2009) theoretical framework of 'world-class universities,' this article introduces Chan's conceptual framework of 'Environment-Learning-Resources (ELR)' to suggest how the college environments influence the imposition of structure, processes, and student learning at emerging global research universities in mainland China.

Keywords

world-class universities – college environment – student experience – comparative and international higher education – globalization and internationalization of Chinese higher education

* Roy Y. Chan is a Ph.D. candidate in the Lynch School of Education at Boston College, Campion Hall 240, 140, Commonwealth Ave., Chestnut Hill, MA 02467, United States of America. His research interests include world-class universities, student experience, student mobility, and cross-border higher education in East Asia and the Pacific. He is also interested in the current public policies that affect the college access and completion of rural students in the Yunnan province of China.

Introduction

In the years following Tiananmen Square, China has made a variety of post-Mao policy initiatives to increase decentralization, diversification, and marketization as part of an effort to develop a highly educated workforce and to pursue “world-class” higher education system by the year 2020.^{1, 2} Historically, since the early 1990s, China’s system of higher education has experienced significant expansion and mass growth, in the aftermath of the nation’s Open Door policies. This effort was started when President Jiang Zemin announced in 1998 the incorporation of a small group of “world-class” universities to reform its higher education system during Peking University centennial celebration.³ Since then, several new initiatives has been established by the Chinese Ministry of Education (MOE) to accelerate the concept for “world-class” universities and to transform its university system into one of the world’s finest in the 21st century. These initiatives include the Project 211, Project 985, C9 League, and the development of the *National Outline for Medium and Long-term Education Reform and Development 2010-2020* (e.g., 2020 China Blueprint). Despite the country’s initiative to move Chinese higher education from a peripheral position in the global community to a more central one, several elite research universities often lack the financial resources and participative governance needed to provide global learning experiences for Chinese students to enter the competitive yet increasingly interdependent and hyper connected world.⁴

Generally, China enrolls the largest number of college students in the world enrolling approximately 22.3 million undergraduate students in the year 2010.⁵ As the country’s university enrollment rate continues to increase, several academics and senior officials have expressed concerns that its college

1 Ka Ho Mok, “From state control to governance: Decentralization and higher education in Guangdong, China,” *International Review of Education*, 47:1-2, (March 2001): 123-149.

2 Rui Yang, “Openness and reform as dynamics for development: A case study of internationalization at South China University of Technology,” *Higher Education*, 47:4, (June 2004): 473-500.

3 Kathryn Mohrman, “The emerging global model with Chinese characteristics,” *Higher Education Policy*, 21, (2008): 29-48.

4 Jung Cheol Shin and Barbara Kehm, *Internationalization of world-class university in global competition* (New York: Springer 2012), 1-13.

5 “China statistical yearbook,” last modified January 2011, <http://www.stats.gov.cn>.

environments and physical infrastructures are not up-to-date with the growing influence of world university rankings. Notably, some past research indicates that academic environments are conducive to higher research outputs and productivity (Bland & Ruffin, 1992). Cresswell (1985) indicates that the culture or environment of a department or institution plays an important factor that determines the research performance of faculty members. Like professors, the academic and campus environments also affect Chinese students' learning, development, and personality at research universities in China.⁶ Typically, higher education institutions support students through both the quality of instruction and the quality of a nurturing and supportive environment. Students constitute the most central stakeholder group in higher education. Cremers and Kyriakides (2008) emphasize that through a supportive college environment, student learning processes can be enhanced. Furthermore, Pascarella (1985b) asserts that the college environment affect students' affective development, which in turn, impact the student experience of higher education, as well as the changing environment for institutions as a result of student needs and shifting enrollment numbers. In other words, the academic and campus environments created by faculty members and staff influence students' learning and living experience. Though the Chinese MOE has set aside additional financial resources to improve the physical and social environment at the most promising research universities in China, more support is needed from both the central and local governments to ensure that its country is at pace to create environments that foster creativity and innovation among college students relative to China's global quest for "world-class" university.⁷

Purpose of the Study

To investigate the present-day college students at Chinese research universities, this study compares and contrasts students' educational experiences in both Hong Kong and China systems of higher education, and their implications to globalization and internationalization for the future development of East Asia. Notably, this research examines the ecological and evolutionary perspective of the "world-class" university framework in Hong Kong and

6 Liu Yunqiu, Du Chenxi, and Guo Xiaojie, "Analysis on campus environment factors in influencing cultivation and postgraduate students' innovative personality: Taking China University of Petroleum, Beijing Campus, as example," *ICASR-13: Advances in Intelligent Systems Research* (2013), 152-155, accessed October 2013, doi:10.2991/icasr.2013.42.

7 Haizheng Li, "Higher education in China—complement or competition to U.S. universities?" in *American Universities in a Global Marketplace*, ed. Charles T. Clotfelter, (Chicago, IL: University of Chicago Press, 2010), 269-304.

China, the core characteristics of the research university in East Asia, and the college environment factors that are necessary to achieve “world-class” status by the year 2020. To better understand the broader higher education context in relations to Chinese students learning and living experience, this research integrates Chan’s conceptual framework of Environment-Learning-Resources (ELR) to understand the role of college environments (e.g., academic, campus, interpersonal) on student’s learning and living experience in China. Unlike numerous past studies that have described how the college environments affect student learning and living experiences,⁸ this research further adds to prior research that the college environments also affect the quality of student educational experiences attending “world-class” institutions in China.

Theoretical Framework

The conceptual framework guiding this study incorporates several features of the college environments, and student learning and development theories that are key requisites for students attending “world-class” institutions. Generally, Chirikov (2013) argues that “research university environment affects the collection, arrangement, and dissemination of information to various stakeholders of the university.”⁹ Accordingly, this study incorporates several approaches and characteristics of the Inventory of College Activities (ICA)¹⁰ conceptual model and the “world-class” university theoretical framework¹¹ to understand how the college environments affect Chinese student’s learning and living experience, which in turn impact student’s educational experience at aspiring “world-class” research universities. The conceptual framework guiding this study is presented below.

Chan’s conceptual framework of Environment-Learning-Resources (ELR) illustrates that certain college environments affect college students’ learning and development in higher education, which in turn, influence the making of “world-class” research universities. To enumerate, Alexander Astin’s (1970)

8 Ernest T. Pascarella, “College environmental influences on learning and cognitive development: A critical review and synthesis,” in *Higher education: Handbook of theory and research*, ed. John C. Smart, (New York: Agathon Press, 1984), 3: 271-326.

9 Igor Chirikov, “Research universities as knowledge networks: The role of institutional Research,” *Studies in Higher Education*, 38, (2013): 456-469.

10 Alexander W. Astin, *The college environment*, (Washington, DC: American Council on Education, 1968), 10-13.

11 Jamil Salmi, *The challenge of establishing world class universities*, (New York: World Bank, 2009), 8.

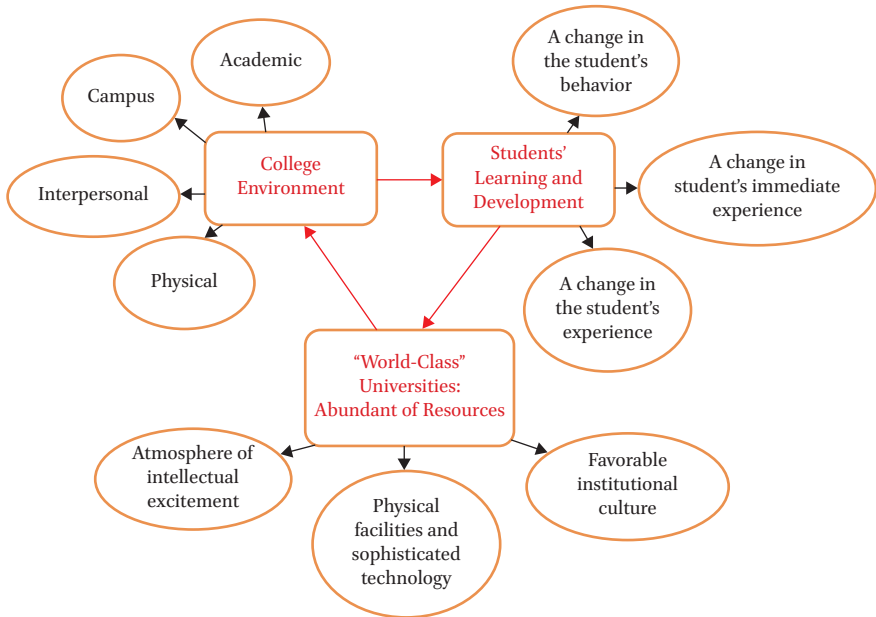


FIGURE 1 Roy Y. Chan's Conceptual Model of Environment-Learning-Resources (ELR)
SOURCES: ASTIN, 1968; SALMI, 2009.

instrument of Inventory of College Activities (ICA) outlines three broad categories of the college environment: 1) academic, 2) campus/physical, and 3) interpersonal/peer. From these three categories, Astin's ICA model suggests that certain elements of the college environments have significant influence on students' learning and development, such as, attitudes, behaviors, and immediate experience. The following section below describes how each factors affect college students' educational experience.

1) *Academic Environment Factors*—the academic environment is a soft environment that occurs both on and off campus, such as, teaching and learning, intellectual atmosphere, and institutional culture. The teaching and learning consist of the studying and interaction levels between classmates, administrators, and teachers. The intellectual atmosphere is reflected by the academic culture and school spirit within the campus body. And the institutional culture is a series of rules and regulations set out by the universities to encourage student involvement on-campus.

2) *Campus and Physical Environment Factors*—the campus and physical environment is a type of natural environment that occurs mostly on-campus, such as, campus facilities, campus resources, campus services, and dormitory

environment. Usually, the campus environment plays a critical role in students' personal and affective development. College students explore their campus environment and construct meaningful knowledge and experiences through their environmental settings. As such, the campus and physical environment plays a vital role towards students' learning and development, and their immediate experience in higher education.

3) *Interpersonal and Peer Environment Factors*—the interpersonal and peer environment is a soft environment that occurs on-campus, such as, faculty-student relationship, student-student interaction, as well as administrators-student collaboration. The relationship between classmates, teachers, and peers affect college students learning and development, ultimately affecting their behavior, perception, and educational experience in higher education.

Although there are several other college environments that affect college student learning and living experiences, such as, cultural, institutional, or psychosocial, this study primary focuses on the three core environments (e.g., academic, campus, interpersonal) that are key towards building a quality “world-class” institution. Altbach (2013a) writes, “research universities require physical facilities commensurate with their missions, and this means expensive libraries and laboratories along with sophisticated technology.”¹² Concurrently, as certain academic and campus environments continue to shift as a result to major changes in size, demographics, needs, and expectations of the student population, institutions aspiring to reach “world-class” status are forced to raise their level of academic quality and institutional prestige to provide students with better academic experiences and more widely recognized credentials. As a result, developing and fostering a rich diversified college environment is essential to effectively serve an increasingly large and more diverse college student population for education policymakers and institutional leaders moving forward. These developments will continue to affect the ways in which students experience higher education, which in turn provides the groundwork for building and establishing “world-class” research universities in China.¹³

12 Philip G. Altbach, “Advancing the national and global knowledge economy: The role of research universities in developing countries,” *Studies in Higher Education*, 38, (February 2013): 329.

13 Stephen P. Heyneman and Jeongwoo Lee, “World-class universities: The sector requirements,” in *Internationalization of world-class university in global competition*, ed. Jung Cheol Shin, (New York, NY: Springer, 2012), 45-58.

Relevant Scholarly Literature

Defining “World-Class” Universities in China

Since China's Open Door Policy in 1992, one of the country's most deep-rooted values is the belief in higher education as a major instrument for achieving the highest good for both individuals and society. According to the recent 2020 China Blueprint, the central government proposes to develop Chinese universities “at or near world-class level... and have significantly enhanced international competitiveness by 2020.”¹⁴ Former President Hu Jintao once pledged in 2010 to transform its Chinese higher education sector into a ‘Research Superpower’ country by the year 2020.¹⁵ He once argued that building “world-class” research institutions is the dream of Chinese generations not only for pride, but also for the future of China's national growth, innovation and development of society. Generally, “world-class” universities are essential in developing a nation's competitiveness in the global knowledge economy.¹⁶ According to Min (2004), the Chinese Ministry of Education (MOE) aspires to incorporate no fewer than ten research institutions to reach ‘world-class’ status, with top priority going to Peking University and Tsinghua University.¹⁷ Though the Chinese MOE aspires to allocate additional funding toward recruiting, hiring, and supporting a greater number of academically gifted and talented scholars from abroad, there is limited evidence to suggest that such claim would further enhance students' learning and living experience which are key components to rise into the global universities rankings and to build a true global “research” university in China by the year 2020.

So the question arises: what is the definition of a “world-class” university? How many “world-class” universities should there be in the world? And what are the positions of top Chinese universities in the world? Historically, the paradox of what constitutes a “world-class” university has been a contested notion.

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- 14 Ministry of Education, *Outline of the national medium-and long-term program for education reform and development 2010-2020*, (Beijing, China: Ministry of Education, 2010), 2.
- 15 Angang Hu, Cheng Li and John L. Thornton, *China in 2020: A New Type of Superpower*, (New York, NY: Brookings Institution, 2011), 82-95.
- 16 Qi Wang, Ying Cheng and Nian Cai Liu. *Building world-class universities: Different approaches to a shared goal*, (Rotterdam, The Netherlands: Sense Publishers, 2012), 1-13.
- 17 Weifang Min, “Chinese higher education: The legacy of the past and the context of the future,” in *Asian universities: historical perspectives and contemporary challenges*, ed. Philip G. Altbach and Toru Umakoshi, (Baltimore, MD: The Johns Hopkins University Press, 2004), 53-83.

Wang and Liu (2014) suggest that “world-class” research universities are high on the agenda by various stakeholders that often conducts international-standard research from a wide range of academic disciplines. While the goal of reaching “world-class” status is clear, Altbach (2004) suggests that “world-class” university is simply a catch phrase: “Everyone wants one, no one knows what it is, and no one knows how to get one.”¹⁸ He connected the idea of world-class prominence to the research enterprise that is “high-stakes” and an “intensely competitive international endeavor.”¹⁹ Like Altbach, Marginson (2012) claims that “world-class” universities is an “entirely valid aspirational” concept. He coins the concept as a “Global Research University” in which the institution has an established a global role and presence in its local and national contexts.²⁰ Unlike Marginson, Mohrman (2008) equates “world-class” universities with the *Emerging Global Model* (EGM). She propose eight characteristics of the EGM: 1) a mission transcending the boundaries of the nation-state, 2) research-intensive, 3) new roles for faculty members, 4) diversified funding, 5) new relationships with stakeholders, 6) worldwide recruitment, 7) greater internal complexity, and 8) global cooperation with similar institutions.²¹ Though Mohrman noted the limitations of the EGM in the areas of institutional autonomy and academic freedom, Salmi (2009) argues that there is ‘no universal formula’ for developing “world-class” research universities; instead, he proposes three specific criteria’s that distinguish world-class universities: 1) high concentration of talent, 2) abundant of resources, and 3) favorable governance.²² In other words, institutions aspiring to reach “world-class” status must possess a wide variety of adequate funding and facilities that encourage professors and students to pursue knowledge and cutting-edge research for economic growth and social development of modern China.

Nonetheless, the growing form of university competition and institutional isomorphism is clearly reflected by the efforts to create “world-class” universities. Though the definition of a “world-class” university remains unclear, the

18 Philip G. Altbach, “The costs and benefits of world-class universities,” *Academe*, 1, (2004): 20-23.

19 Philip G. Altbach, “Peripheries and Centers: Research Universities in Developing Countries,” *Asia Pacific Education Review*, 10, (2009): 15-27.

20 Simon Marginson. “Higher education in East Asia and Singapore: Rise of the Confucian model,” *Higher Education*, 61, (May 2011): 587-611.

21 Kathryn Mohrman, Weifang Ma and David Baker, “The research university in transition: The emerging global model,” *Higher Education Policy*, 21, (2008): 5-27.

22 Jamil Salmi, *The challenge of establishing world class universities*, (New York: World Bank, 2009), 20-30.

definitions of excellence can be implied from various ranking systems of universities worldwide. For instance, the Shanghai Jiao Tong University—Academic Ranking of World Universities (ARWU) indicates that the best way to determine “world-class” status is to count the number of Nobel laureates and international awards for faculty, research dollars generated, the percentage of graduate students, and the amount of papers indexed by Citation Indexes of Thomson. The ARWU proposes four criteria to identify national strengths and weaknesses of research universities: 1) quality of education, 2) quality of faculty, 3) research output, and 4) per capita performance. Despite ARWU strong emphasis to measure institutions based on research output, especially in the field of science and technology, the use of international academic rankings plays a major role in determining a nation’s global competitiveness and encouraging higher education stakeholders to pursue a culture of quality assurance as well as a high degree of international recognition.²³ Thus, institutions striving to achieve “world-class” status are often pressured to acquire an abundant amount of resources to respond effectively to the demands of a fast changing global knowledge and information-based economy.²⁴

Reforms in Chinese Higher Education

China’s higher education system has undergone a dynamic transformation from once being non-existent since the Cultural Revolution in 1978 to boasting one of the largest university systems in the world today.²⁵ Historically, the development of research universities plays a vital role in ‘anchoring’ globalization into national development.²⁶ Nowadays, higher education is affected by the broad worldwide trends of what scholars often see as the homogenizing influences of economic globalization. While China continues to develop its economic prowess and expand investment into research and development (R&D), a number of top-tier research universities still lack the resources

23 Philip G. Altbach and Jamil Salmi, *The road to academic excellence: The making of world-class research universities*, (Washington, DC: World Bank Publications, 2011), 11-12.

24 Nian Cai Liu and Qi Wang, “Building World-Class Universities in China: A Dream Come True?,” *Chinese Education & Society*, 44, (2012): 3-7.

25 Ruth Hayhoe, Jun Li, and Jing Lin, *Portraits of 21st century Chinese universities: In the move to mass higher education*, (Hong Kong, China: Comparative Education Research Centre (CERC), The University of Hong Kong, 2012), 1-18.

26 Gerard A. Postiglione, “Anchoring globalization in Hong Kong’s research universities: Network agents, institutional arrangement, and brain circulation,” *Studies in Higher Education*, 38, (2013): 345-66.

needed to develop a first-class academic environment in China,²⁷ against the backdrop of marketization and privatization in higher education.

Typically, globalization has served both as a benefit and a curse to research universities within the center of global knowledge communication and networks.²⁸ Jacob and Meek (2013) emphasize that emerging research universities in developing countries are at the frontier of internationalization, playing an important role in maintaining research networks and researcher collaboration. Altbach and Knight (2007) highlights the role of internationalization on a wide variety of academic activities, including student and faculty exchanges, branch campuses, cross-border arrangements, English-medium programs and degrees, and international accreditation. Because research universities contributes immensely to the socio-economic transformation of a developing nation, investing additional resources into research and development(R&D) can significantly enhance China's global impact on the higher education stage.²⁹

For instance, the new South China University of Science and Technology (SCUT) has developed a "world-class" model that closely resembles with the Hong Kong University of Science and Technology (HKUST). Notably, Postiglione (2013) outlines that Hong Kong research universities are at a far greater advantage in the global rankings than mainland China because they have a high degree of internationalism, a highly valued but self-defined Chinese cultural heritage, bilingual and bicultural adaptability, open borders and easy mobility, a lively intellectual climate, as well as stem protection of academic freedom. With this regard, SCUT has forged numerous foreign partnerships with several elite research universities based on the Hong Kong model to attract a high concentration of talent and resources to their institution. As a result of their bold leadership, SCUT has pursued a culture of academic excellence by integrating the Hong Kong model to create a superior environment that foster creativity and innovation among students in Chinese higher education. Despite the country's continued investment in R&D, now reaching nearly RMB900 billion (US\$143 billion),³⁰ there is a lack of research that has yet to examine the core

27 Philip G. Altbach and Qi Wang, "China's rise in science may taper off?," *Scientific American*, 307, September 2012: 46-47.

28 Jane Knight, *Higher Education in Turmoil: The Changing World of Internationalization*, (Rotterdam, The Netherlands: Sense Publishers, 2008), 1-19.

29 Kathryn Mohrman, K. Weifang Ma and David Baker, "The emerging global model of the research university," in *Higher education in the new century: Global challenges and innovative ideas*, eds. Philip G. Altbach & Patti McGill Peterson, (Rotterdam, The Netherlands: Sense Publishers, 2007), 145-177.

30 Zheng Song, Kjeti Storesletten and Fabrizio Zilibotti. "Growing like China," *American Economic Review*, 101, (2011): 196-233.

characteristics of the college environments, and the intellectual culture and institutional factors that affect students attending “world-class” research institutions in China.

Methods

Data and Sample

To understand how the college environments affect Chinese students' learning and living experience in higher education, this study utilized a cross-national survey from the Centre for Research into Quality at Birmingham City University (BCU) to answer two research questions: 1) what is the relationship between the quality of college environment and students' learning and living experiences, and 2) what environmental factors are necessary to create and sustain a “world-class” university in China. Incorporating both Alexander Astin (1970) and Jamil Salmi's (2009) theoretical frameworks, the BCU ‘2010 Student Satisfaction Survey’ was utilized to analyze, explore, and compare the effects of college environment (e.g., academic, campus, interpersonal) on Chinese students' learning and living experiences in Hong Kong and Shanghai. The BCU survey is composed of over 100 questions about demographics, students' learning and living experiences, attitudes towards teaching and research, perception of college environments, and a series of administrative and academic issues. Two aspiring “world-class” research universities—The University of Hong Kong (HKU) and Shanghai Jiao Tong University (SJTU)—were selected because the two institutions aspire to reach “world-class” status by the year 2020. Though Hong Kong's system of higher education differs dramatically from China's system of higher education, both universities are categorized as global comprehensive research universities, are members of the elite international network *Universitas 21*, and are ranked between 151-200 as per listed on the 2014 Academic Ranking of World Universities (ARWU) by SJTU.

Procedure

The ‘2010 Student Satisfaction Survey’ developed by Birmingham City University (BCU)—National Student Survey (NSS) measures students' learning and development, and their overall satisfaction of the college environment. A total of 100 Chinese participants—50 HKU students and 50 SJTU students—were randomly selected from various departments, faculties, and schools. A cross-national exploratory survey funded by HKU and SJTU was conducted between February 2011 and July 2011. All questionnaires, conducted primarily in English, were completed face-to-face in approximately 30 to 60 minutes.

To ensure validity and reliability, questionnaires were neither adjusted nor modified to ensure the accuracy of the BCU '2010 Student Satisfaction Survey'. Majority of the surveys were administered individually in public areas, such as, libraries, canteens, and coffee shops to minimize bias responses. The goal of the survey was to examine and understand which factors or variables from both Hong Kong and Shanghai should education policymakers and institutional leaders consider when enhancing students' educational experience and meeting the country's progress or aspiration for "world-class" status. Due to the limited funding for this project, only a small number of convenience samples were administered in this study. All numeric data of the results were weighted to the next decimal points and shown in the following sections.

Demographics and Student Background

The demographic information of the survey is presented in Table I (HKU) and Table II (SJTU). The demographic profile is analyzed by gender, age, field of study, and English language proficiency as shown below.

Firstly, for the variables age and gender, the number of female students who participated in the study had exceeded the number of male students at the University of Hong Kong (HKU). On the contrary, the number of male students who participated in the study at Shanghai Jiao Tong University (SJTU) had exceeded the number of female students. This particular gender gap is not surprising, especially since male students typically outnumber the female students in many science and technology universities in mainland China.

TABLE I *Age and gender of survey respondents—The University of Hong Kong (HKU)*

Gender		Age				Total	
		18-19	20-21	22-23	24 or older	#	%
Male	#	4	3	6	7	20	33
	%	20	15	30	35		
Female	#	3	5	12	10	30	67
	%	10	17	40	33		
Total	#	7	8	18	17	50	—
	%	14	16	36	34	—	100

* Age and gender data is self-reported by each student subject who chose to respond to the demographic questions.

TABLE II *Age and gender of survey respondents—Shanghai Jiao Tong University (SJTU)*

Gender		Age				Total	
		18-19	20-21	22-23	24 or older	#	%
Male	#	13	8	5	6	32	60
	%	41	25	16	19		
Female	#	9	3	2	4	18	40
	%	50	17	11	22		
Total	#	22	11	7	10	50	—
	%	44	22	14	20	—	100

* Age and gender data is self-reported by each student subject who chose to respond to the demographic questions.

English proficiency of respondents—The University of Hong Kong

Proficiency level	#	%
Very good	5	10
Above average	31	62
Fair	13	26
Poor	1	2
Total	50	100

English proficiency of respondents—Shanghai Jiao Tong University

Proficiency level	#	%
Very good	4	8
Above average	14	28
Fair	29	58
Poor	3	6
Total	50	100

Student respondents demographic information—The University of Hong Kong

Variable	Frequency	Percent
Academic status		
Undergraduate	18	36.0
Postgraduate	32	64.0
Visiting Student	0	0.0
Department		
Biology	4	8.0
Computer Science	1	2.0
Education	2	4.0
Economics	6	12.0
Engineering	19	38.0
English	2	4.0
Linguistics	1	2.0
Medicine	11	22.0
Political Science	1	2.0
Psychology	2	4.0
Social Sciences	1	2.0
Native language		
Cantonese	15	30.0
Mandarin	28	56.0
English	7	14.0
Other	0	0.0
Years living in Hong Kong		
1 Year	26	52.0
1–3 Years	7	14.0
More than 3 Years	17	34.0

Student respondents demographic information—Shanghai Jiao Tong University

Variable	Frequency	Percent
Academic status		
Undergraduate	29	58.0
Postgraduate	21	42.0
Visiting Student	0	0.0

TABLE (cont.)

Variable	Frequency	Percent
Department		
Biology	1	2.0
Computer Science	2	4.0
Education	5	10.0
Economics	8	16.0
Engineering	23	46.0
English	4	8.0
Linguistics	1	2.0
Medicine	3	6.0
Political Science	0	0.0
Psychology	2	4.0
Social Sciences	1	2.0
Native language		
Cantonese	0	0.0
Mandarin	50	100.0
English	0	0.0
Other	0	0.0
Years living in Shanghai		
1 Year	9	18.0
1-3 Years	14	28.0
More than 3 Years	27	54.0

Secondly, for the variable English proficiency, the number of students who ranked themselves as either 'very good' and 'above average' is slightly higher from HKU than those from SJTU. The English proficiency question seek to gauge how well Chinese students read and make sense of the survey questionnaires without the supervision of the principal researcher or outside help. All questionnaires were conducted in English. Although each student completed the questionnaire with different English proficiency levels, majority of the participants had completed the survey without any complication or difficulty.

Finally, for the variable student demographic, a large number of the participants from both institution at HKU and SJTU had studied 'Engineering'. The fact that a large number of respondents were engineering is interesting finding

when interpreting and making final claims between students' learning and living experience in Hong Kong and Shanghai. The variables and descriptions associated to the variables of the survey are presented in Table III below.

TABLE III *Variables and descriptions of the variables in the study—HKU and SJTU*

Variables	Descriptions	Measure scales
College environment		
Academic	Level of studying and interaction (e.g., participate in class) (This variable is composed of 7 questions)	0=Never 1=Seldom 2=Occasionally 3=Often 4=Very Often
	Level of classroom experience (e.g., trouble listening in class) (This variable is composed of 5 questions)	0=Never 1=Seldom 2=Occasionally 3=Often 4=Very Often
Campus	Satisfaction of campus facilities and campus Services (e.g., computers, library) (This variable is composed of 5 questions)	0=Very Dissatisfied 1=Dissatisfied 2=Neutral 3=Satisfied 4=Very Satisfied
	Use of campus resources (e.g., computers, library) (This variable is composed of 5 questions)	0=Never 1=Once a month 2=Once a week 3=2-6 times a week 4=Everyday
	Activity level of residence hall	1=Never/Rarely 2=Occasionally/Often 3=Everyday/Very Often
Interpersonal	Number of research conversations on-campus, off-campus, and e-mail	Numerical

TABLE III (cont.)

Variables	Descriptions	Measure scales
	Number of faculty-student interaction on-campus	Numerical
	Number of faculty-student interaction off-campus	Numerical
Students' learning and living experience	Level of self-skills developed (e.g., leadership, interpersonal) (This variable is composed of 7 questions)	0=Never 1=Very Little 2=Some 3=Much 4=Very Much
	Level of future development (e.g., training for job) (This variable is composed of 4 questions)	0=Never 1=Very Little 2=Some 3=Much 4=Very Much
	Overall level of student involvement (academic and social)	1=Agree 2=Disagree 3=Not Applicable
	Overall satisfaction of college environment (academic, campus, interpersonal)	1=Agree 2=Disagree 3=Not Applicable

The independent variable (college environment) consisted of three main factors: a) academic, b) campus/physical, and c) interpersonal/peer as outlined earlier from the theoretical framework. The dependent variable (students' learning and living experience) consisted of several multiple factors, such as, levels of student involvement, levels of self-skills developed, level of future development, satisfaction of college environment, among others as shown in the results section.

Results

The results for the independent variable is illustrated and presented in Table IV and Table V. Both tables present the descriptive results related to the college environment variables and the numeric results of each item from the two aspiring “world-class” research universities. A brief summary of the results at both the University of Hong Kong (HKU) and Shanghai Jiao Tong University (SJTU) are presented for each question below and are further described in the discussion section.

TABLE IV *Weighted distribution of responses on the campus environment at HKU and SJTU*

PART A: Campus Facilities, Resources, and Services at University

Question Ia: Satisfaction Level: Campus Facilities & Services—The University of Hong Kong

	1 Very dissatisfied (%)	2	3	4	5 Very satisfied (%)
Satisfaction level (N=50 students)					
Campus	0.0	7.0	12.0	70.0	11.0
Computer facilities	6.0	3.0	26.0	36.0	29.0
Library	0.0	10.0	7.0	67.0	17.0
Student services	3.0	7.0	26.0	57.0	7.0
Student canteen	0.0	17.0	46.0	30.0	7.0
Sports complex	0.0	3.0	20.0	57.0	20.0

Question Ib: Satisfaction Level: Campus Facilities & Services—Shanghai Jiao Tong University

	1 Very dissatisfied (%)	2	3	4	5 Very satisfied (%)
Satisfaction level (N=50 students)					
Campus	10.0	7.0	7.0	43.0	33.0
Computer facilities	7.0	0.0	10.0	53.0	30.0
Library	0.0	0.0	10.0	33.0	57.0
Student services	0.0	0.0	0.0	0.0	0.0
Student canteen	0.0	51.0	23.0	13.0	13.0
Sports complex	0.0	0.0	23.0	53.0	23.0

According to the numeric data in Question 1a and 1b, Chinese students from HKU were most satisfied with their overall university campus while least satisfied with the student canteen. On the other hand, Chinese students from SJTU were most satisfied with the library while many were least satisfied with the student canteen.

Question 2a: Usage Level: Campus Facilities & Services—The University of Hong Kong

	Never (%)	Once a month	Once a week	2-6 times per week	Everyday (%)
Usage level (N=50 students)					
Career service	47.0	30.0	10.0	10.0	3.0
Computer facilities	0.0	27.0	20.0	27.0	27.0
Library	0.0	10.0	37.0	37.0	16.0
Sports complex	16.0	30.0	30.0	21.0	3.0
Student canteen	3.0	7.0	17.0	46.0	28.0
Parking	93.0	7.0	0.0	0.0	0.0

Question 2b: Usage Level: Campus Facilities & Services—Shanghai Jiao Tong University

	Never (%)	Once a month	Once a week	2-6 times per week	Everyday (%)
Usage level (N=50 students)					
Career service	77.0	23.0	0.0	0.0	0.0
Computer facilities	20.0	13.0	20.0	20.0	27.0
Library	0.0	0.0	27.0	43.0	30.0
Sports complex	0.0	13.	43.0	33.0	11.0
Student canteen	0.0	7.0	0.0	0.0	93.0
Parking	63.0	10.0	0.0	7.0	20.0

From the numeric data in Question 2, Chinese students at HKU had used the Library, Computer facilities, and Student Canteen very frequently while the Career Service and Parking was considered to be the least. On the other hand,

Chinese students at SJTU had utilized Sports Complex, Library, and Student Canteen the most while the Career Service and Parking were rarely or never used.

Question	Response frequency	%	Response frequency	%
3. Overall, during the current academic year, how satisfied are you with the campus facilities? (N=100 students)				
	HKU	HKU	SJTU	SJTU
A. Very dissatisfied	0	0.0	0	0.0
B. Dissatisfied	6	12.0	1	2.0
C. Neutral	2	4.0	7	14.0
D. Satisfied	3	60.0	26	52.0
E. Very satisfied	12	24.0	14	28.0
Total	50	100.0	50	100.0

From the two universities in Question 3, Chinese students at both HKU and SJTU were equally satisfied with their overall campus facilities during the 2010-2011 academic year.

Question	Response frequency	%	Response frequency	%
4. Overall, during the current academic year, how satisfy are you with the learning environment? (N=100 students)				
	HKU	HKU	SJTU	SJTU
A. Very uncomfortable	0	0.0	0	0.0
B. Uncomfortable	6	12.0	2	4.0
C. Average	6	12.0	8	16.0
D. Comfortable	21	42.0	23	47.0
E. Very comfortable	13	26.0	15	30.0
F. Extremely comfortable	4	8.0	2	4.0
Total	50	100.0	50	100.0

As shown above in Question 4, Chinese students at both HKU and SJTU were equally comfortable with their overall learning environment with little differences or comparison between the two institutions.

Question	Response frequency	%	Response frequency	%
5. Have you at any time lived in a student residence, or other university hall (N=100 students)?				
	HKU	HKU	SJTU	SJTU
A. Yes	24	48.0	36	72.0
B. No	26	52.0	14	28.0
Total	50	100.0	50	100.0

From the numeric data in Question 5, Chinese students from SJTU were twice as more likely to have lived on-campus during their academic year compared to Chinese students from HKU where more than half have not had opportunity to live in a residence or student dormitory hall.

NOTE: Question number 6 and 7 corresponds to respondents who answered 'Yes' to Question 5.

Question	Response frequency	%	Response frequency	%
6. Overall, during the academic year, how active are you in your student residence life? (N=60 students)				
	HKU	HKU	SJTU	SJTU
A. Not active	0	0.0	5	16.0
B. Not so active	2	9.0	6	17.0
C. Average	12	50.0	13	36.0
D. Active	7	29.0	10	28.0
E. Very active	3	13.0	0	0.0
F. Super active	0	0.0	1	3.0
Total	24	100.0	36	100.0

From the findings above, Chinese students from HKU were slightly more involved with their student residence life compared to Chinese students from SJTU.

7a: Activity Level: Residence Halls—The University of Hong Kong

	Never/Rarely (%)	Occasionally	Very Often (%)
Activity level (N=24 students)	11.0	67.0	22.0
Going out with other students for dinner, snacks, etc.			
Offered to help another student	0.0	100.0	0.0
Asked others for assistance in something that you were doing	22.0	78.0	0.0
Attended social events organized by the student residence	22.0	56.0	22.0
Studies with other students in the student residence	44.0	44.0	11.0
Helped plan or organize an event in the student residence	44.0	34.0	22.0
Talked with my Residence Master/Tutor	56.0	44.0	0.0

7b: Activity Level: Residence Halls—Shanghai Jiao Tong University

	Never/Rarely (%)	Occasionally	Very Often (%)
Activity level (N=36 students)	7.0	66.0	27.0
Going out with other students for dinner, snacks, etc.			
Offered to help another student	0.0	73.0	27.0
Asked others for assistance in something that you were doing	0.0	73.0	27.0

7b: Activity Level (*cont.*)

	Never/Rarely (%)	Occasionally	Very Often (%)
Attended social events organized by the student residence	76.0	17.0	7.0
Studies with other students in the student residence	17.0	50.0	33.0
Helped plan event in student residence	65.0	35.0	0.0

TABLE V *Weighted distribution of responses on the academic environment at HKU and SJTU*

PART B: Studying and Interaction at University

Question 1a: Involvement Level: Studying and Interaction—The University of Hong Kong

	Never (%)	Seldom	Occasionally	Often	Very Often (%)
Studying and Interaction Level (N=50 students)					
Took detailed notes	3.0	0.0	43.0	37.0	17.0
Participated in class discussions	3.0	22.0	37.0	26.0	12.0
Worked on a paper or project	0.0	16.0	16.0	37.0	31.0
Tried to explain the material to another student or friend	0.0	3.0	47.0	37.0	11.0
Made outlines/summaries from class notes or readings	3.0	3.0	58.0	22.0	12.0
Worked on a group study project	11.0	31.0	21.0	33.0	3.0
Made a presentation in class	0.0	17.0	47.0	33.0	3.0

Question 1b: Involvement Level: Studying and Interaction—Shanghai Jiao Tong University

	Never (%)	Seldom	Occasionally	Often	Very Often (%)
Studying and Interaction Level (N = 50 students)					
Took detailed notes	0.0	0.0	60.0	30.0	10.0
Participated in class discussions	0.0	17.0	20.0	46.0	17.0
Worked on a paper or project	0.0	13.0	13.0	57.0	17.0
Tried to explain the material to another student or friend	0.0	7.0	56.0	30.0	7.0
Made outlines/summaries from class notes or readings	0.0	10.0	46.0	37.0	7.0
Did additional readings on topics that were introduced and discussed in class	0.0	10.0	30.0	53.0	7.0
Worked on a group study Project	0.0	7.0	26.0	60.0	7.0
Made a presentation in class	0.0	10.0	40.0	33.0	17.0

Question	Response frequency	%	Response frequency	%
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2. How much difficulty have you had in financing your study?

	HKU	HKU	SJTU	SJTU
A. No difficulty	13	26.0	25	60.0
B. A little difficulty	24	48.0	11	20.0
C. Some difficulty	9	18.0	8	13.0
D. A great deal of difficulty	3	6.0	4	7.0
E. Extremely difficulty	1	2.0	2	0.0
Total	50	100.0	50	100.0

From the numeric data in Question 2, a large number of students from both HKU and SJTU did not express difficulty financing their university study. This question may suggest that most students were either supported by their family household or that the college tuition in China is perhaps quite affordable or reasonable for students in Hong Kong and Shanghai.

Question	Response frequency	%	Response frequency	%
3. During the academic year, on average, about how many hours do you spend in a typical 7-day week on-campus?				
	HKU	HKU	SJTU	SJTU
A. 1-5 hours	0	0.0	0	0.0
B. 6-10 hours	0	0.0	0	0.0
C. 11-15 hours	2	4.0	0	0.0
D. 16-20 hours	6	8.0	0	0.0
E. More than 20 hours	44	88.0	50	100.0
Total	50	100.0	50	100.0

Between the two research institutions, a large number of Chinese students from both HKU and SJTU had spent more than 20 hours per week either studying or attending class. This result may be alarming for Chinese administrators and student affairs practitioners who desire to encourage and foster creative students through extracurricular activities on-campus.

Question 4a: Studying Level: Classroom Experience - The University of Hong Kong

	Never (%)	Seldom	Occasionally	Often	Very Often (%)
Studying level (N=50 students)					
How often do you have trouble expressing your ideas in an assignment?	6.0	52.0	42.0	0.0	0.0

	Never (%)	Seldom	Occasionally	Often	Very Often (%)
How often do you have trouble understanding things you hear in class?	11.0	52.0	26.0	11.0	0.0
How often do you imagine that you have less scholastic ability than your classmates?	3.0	37.0	60.0	0.0	0.0
In turning in a term paper, how often do you feel you did an excellent job on it?	3.0	17.0	43.0	37.0	0.0
Compared with classmates, how often do you feel you must study more than they do to get the same grades?	0.0	63.0	17.0	17.0	3.0

Question 4b: Studying Level: Classroom Experience—Shanghai Jiao Tong University

	Never (%)	Seldom	Occasionally	Often	Very Often (%)
Studying level (N=50 students)					
How often do you have trouble expressing your ideas in an assignment?	10.0	50.0	40.0	0.0	0.0
How often do you have trouble understanding things you hear in class?	0.0	30.0	40.0	30.0	0.0
How often do you imagine that you have less scholastic ability than your classmates?	23.0	37.0	23.0	17.0	0.0
In turning in a term paper, how often do you feel you did an excellent job on it?	0.0	21.0	33.0	46.0	0.0

Question 4b (*cont.*)

	Never (%)	Seldom	Occasionally	Often	Very Often (%)
Compared with classmates, how often do you feel you must study more than they do to get the same grades?	7.0	28.0	20.0	38.0	7.0

Question	Response frequency	%	Response frequency	%
5. Based on your experience so far, would you recommend the campus to your friends or relatives? (N = 100 students)				
	HKU	HKU	SJTU	SJTU
A. Definitely not	2	4.0	3	6.0
B. Probably not	1	2.0	6	12.0
C. Maybe	4	8.0	13	26.0
D. Probably would	31	62.0	9	18.0
E. Definitely would	12	24.0	19	38.0
Total	50	100.0	50	100.0

From the numeric data in Question 5, Chinese students from HKU were more likely to recommend their university campus to friends or families compared to students from SJTU. This finding may be the result of extraneous factors, such as, academic freedom, tuition, accommodation, and institutional prestige.

Interpretation of the Findings

From the statistical results above, the '2010 Student Satisfaction Survey' from the Birmingham City University (BCU)—National Student Survey (NSS) indi-

cates that there were significant differences among Chinese students' learning and living experience as a result of certain environmental factors at both the University of Hong Kong (HKU) and Shanghai Jiao Tong University (SJTU). Two common themes that have emerged based on the findings are: a) college environment (e.g., academic, campus, interpersonal) affects Chinese students learning and living experience, and b) Chinese students learning and living experiences impact China's long-term progress to build and create "world-class" research universities by the year 2020.

Firstly, the data suggests that the college environment variables exert a compelling effect on Chinese students' learning and living experience at both HKU and SJTU. Specifically, the college *campus* environments (e.g., campus facilities, campus resources, and campus services) showed the largest impact towards students' learning and living experience, while the college *interpersonal* environment (e.g., faculty-student relationship, faculty-student interaction, faculty-student mentorship) came in second following with the college *academic* environment (e.g., curriculum, degree program, teaching) as the third most viable impact on college students' learning and living experience. One significant difference noted from the study was the student canteen, in which more than 50 percent of SJTU respondents were dissatisfied compared to only 17 percent at HKU. Aside from the dining hall, there was also a difference regarding the usage of career services on-campus, as more than 80 percent of SJTU respondents had never used the career services compared to only 40 percent at HKU. This finding may suggest that a majority of SJTU students were disinterested of using such services on-campus, or perhaps were unaware that such service had existed for them on-campus.

In addition to this unique finding, the usage level of the campus facilities and campus services between the two higher education systems were very similar. More specifically, the usage level of Library and Computer had received equivalent results at both HKU and SJTU. One interesting finding to note was that more than 90 percent of SJTU students had lived on-campus at some point during their college years compared to only 47 percent at HKU. Despite the fact that Chinese students from SJTU were given far more opportunities to live on-campus, the results indicate that students at HKU received slightly higher percentage points for being more active in residence life compared to students at SJTU. This result may be due to the fact that HKU have an Office of Student Union run by student affair professionals compared to SJTU.

Unlike the college campus environment, the results also indicated that Chinese students had achieved or gained more during their college years at HKU compared to students at SJTU. This may be due to the fact that HKU had well over one hundred student-run clubs or societies for students to participate

on-campus compared to students at SJTU, where often student-run organizations are quite limited. A few areas where HKU received higher percentages was the amount of knowledge students obtained both inside and outside the classroom as well as the preparation a student had devoted to future qualifications at the completion of their semester. It is important to note, however, that students at SJTU had earned slightly higher percentages on improving their job prospects and to perform well at a specific job compared to HKU students. This finding may suggest that Chinese students from Shanghai are far more employable at the completion of their bachelor's degree compared to Chinese students from Hong Kong.

All in all, the cross-national study indicates that Chinese students at SJTU were slightly more satisfied with their college environments (e.g., facilities, services, and resources) compared to Chinese students at HKU. This finding is not all surprising due to the fact that SJTU—Minhang Campus had twice the number of modern facilities and physical infrastructures compared to HKU—Main Campus. This finding may also be due to the college tuition and daily living expenses in Shanghai, which is often far more reasonable than the living in Hong Kong. Though there are many other probable cause or justifications that describe how the college environment affects students learning and living experience in China, this overall research study clearly suggest that Chinese students' perception of their academic and social surrounding plays a salient role on the country's goal to build a "world-class" education by the year 2020. Indeed, the roles of college environments has significant role to play on Chinese students' learning and development of which are all relevant towards maintaining and sustaining high quality instruction, curriculum, and student life on-campus at both Hong Kong and Shanghai.

Implications for Further Research

This research study has offered a number of directions for further research. As Chinese universities face new unprecedented challenges in the globalizing era, additional studies should examine how its college environment affect student learning and living experience, especially at second and third-tier research universities in China. Utilizing other dependent variables such as student engagement, student outcomes, student moral development, and student motivation may reveal a significant relationship with the independent variable college environment. A similar research should be replicated in other Confucian societies, such as, Macau, Singapore, or Taiwan to determine how the college environments affect students' learning and development, and to what extent Confucian values of the research universities directly or indirectly influence student development. Furthermore, additional research should

address how the role of internationalization and marketization affect Chinese students learning and living experiences in higher education, especially at research universities who seek “world-standing” or “world-class status.” Philip G. Altbach once wrote: “China’s global influence and prestige in higher education is best served by strengthening its universities at home and offering a ‘world class’ education to Chinese students and expanded numbers of overseas students.”³¹ With this regard, Chinese policymakers and institutional leaders should investigate how a “world-class” institution can integrate Chan’s Environment-Learning-Resources (ELA) framework to better prepare students for the globally competitive job market, against the growing influence of neo-liberal economic ideology and the reduction in public support for universities.

Conclusion

In summary, this article has pointed to several key instruments and variables to which policymakers and institutional leaders should promote when designing an effective college environment for Chinese students studying either in Hong Kong and Shanghai. Clearly, no two systems are identical; however, one thing that is certain is that both countries share a collective vision to integrate academic cultures and college environments that centers on higher learning outputs, such as, critical thinking, problem solving, innovation, and creativity for the purpose of cultural change. With the increased openness of China to the outside world, finding ways to enhance Chinese students learning and living experience, and their roles in governance and decision making will be critical if higher education institutions are to respond effectively to changing student profiles and needs of globalization around the world. Development must focus on improving the quality of teaching, research, and services if the research universities are to achieve “world-class” status by the year 2020. Conventionally, aspiring “world-class” research institutions must develop environments that nurture an academic culture towards 21st century learning including the imposition of structure, processes, and student learning in China. By fostering a vibrant college environment, aspiring “world-class” research universities can further attract world-class foreign scholars, recruit additional international students, produce creative students, and promote brain gain rather than brain drain within their own higher education system. Future improvement

31 Sean Yoong, “China setting up first university campuses abroad,” *Star Advertiser*, last modified June 2013, <http://news.yahoo.com/china-setting-first-university-campuses-abroad-071119255.html>

will largely depend on the central and local government continued investment to fund elite global research universities under Project 211 and Project 985 as well as President Xi Jinping's long-term vision to invest in research and development (R&D) in China. Nonetheless, the 'road to academic excellence' requires a combination of resources and a will to reform, requiring measured approaches that would enhance the overall quality and satisfaction of college student learning and development. All of this are crucial factors for developing a true global "research" university, and more importantly, to create institutions as agents of social change for the socioeconomic transformation and growth in a globalizing time.

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