12 Days in China

More than Similarities

By Diana G. Oblinger

We were told we’d learn a lot by visiting China. And we did. In June 2007, a trip to China was undertaken by a joint delegation consisting of three subgroups: individuals from North Carolina State University (NCSU), from the Research Triangle Park and Wake County in North Carolina, and from EDUCAUSE. Each group had a goal of exploring relationships in its respective community in China: higher education, business, and IT. Over twelve days, the delegation visited six universities in China—Peking University, Tsinghua University, Beijing Normal University, China Agricultural University, Fudan University, and Zhejiang University—as well as the Ministry of Education, the Ministry of Science and Technology, and two research parks.

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China’s size is imposing. In fact, it is more helpful to think of China as a continent rather than just a country. China is the fourth-largest country in the world, behind Russia, Canada, and the United States. The population is large as well, with 1.3 billion people; four cities in China have populations over 10 million. The terrain is also diverse. For example, elevations range from 505 feet below sea level to Mount Everest at 29,028 feet. High mountain deserts in Mongolia are almost the opposite climate and geography of the tropical regions north of Vietnam. Not only is China “big”—it is growing. For example, while driving through Beijing, a colleague counted 106 cranes for building skyscrapers before he stopped counting. As the cities have grown, so have the challenges of urbanization. The growth is clearly reflected in traffic—and in air quality.

The scale of education in China is hard for many of us outside the country to imagine. Ten million students sit for college entrance exams each year. There are 300,000 testing centers across China, all monitored 24x7. The day I visited Beijing Normal University, 10,000 teachers were receiving in-service training. Two million students are enrolled in China’s distance-education programs. We ate in a campus dining hall that can feed 10,000 people at one time. Among the students we met at Zhejiang University, none came from a city of less than 10 million people (larger than the population of the state in which I live). When Chinese students come to U.S. campuses, they often ask: “Where are all the people?”

Many of us must update our notions about China—and in more areas than higher education. People my age remember Mao Zedong and the Cultural Revolution of the 1960s-1970s. Mao, who died in 1976, was revered in China. Yet as we stood in Tiananmen Square, we were approached by street vendors selling Mao watches and Red Army caps. At first it seemed like sacrilege, but as our Chinese friends told us, “China was Communist for only forty years; we’ve been capitalists for over 5,000 years.”

Growth is clearly the story for the Chinese economy. China alone could become the world’s second-largest economy by 2016 and could surpass the United States by 2041. Another measure of economic promise is investment. When transnational corporations were surveyed, 87 percent rated China as an attractive place for investment (comparable figures were 51% for India and 13% for the United Kingdom). Global corporations rank China as the most attractive location for new R&D facilities, surpassing the United States: “In 1997 China had fewer than 50 research centers managed by multinational corporations but by the end of 2004 there were more than 700.”

Higher Education
As is true worldwide, education is the key to economic prosperity and social mobility in China. So it is no surprise that the growth of higher education in China has been remarkable. Numbering two hundred institutions in the 1950s, colleges and universities grew to more than two thousand by 2003. The government seeks to increase higher education participation from 10 percent (as of 2000) to 15 percent by 2010. Yet even though new campuses are being established, the physical infrastructure has not caught up with the educational demand. As a result, many students study abroad, and others participate in online alternatives.

Generally, visits among senior university executives begin in a guanxi (“gwan-shee”), literally the “relationship room.” These are rectangular rooms with two large chairs at one end, where the highest-ranking individual from each delegation sits. In a meeting between presidents, for example, both presidents sit at the head of the room, with others seated along the walls in descending order of importance. Tea is served to all guests. When the meeting is over, gifts are exchanged.

It was in the relationship rooms that we learned about many similarities between U.S. and Chinese institutions. For example, President Wang Shenghong of Fudan University identified the greatest challenges for Chinese colleges and universities: raising funds; lowering cultural barriers to industry collaboration; recruiting top scholars; and effectively organizing interdisciplinary programs. He cited internationalization, interdisciplinary, and information management as additional challenges.

The Campuses
All the universities we visited are cities in their own right. Beyond classrooms, faculty offices, labs, and gymnasiums, there is a complete infrastructure for the students, faculty, and children who live on campus. All students live in residence halls; there are separate residence halls for undergraduate and graduate students. The universities also have international dorms (in one case, a four-star hotel) for students from outside China. In most cases, there is a guest house for visitors. Huge dining halls feed the students, faculty, and the families of faculty. But students have other needs as well, so campuses are dotted with small shops.
for sewing, laundry, dry cleaning, and bicycles. On many campuses, schools for the children of faculty are also provided. Tsinghua University, for example, has elementary, middle, and high schools, as well as housing and dining for a large number of faculty and their families.

The campuses are large due to the numbers of students and faculty. But they are also extraordinarily beautiful, with green spaces and well-manicured gardens. For example, the campus of Tsinghua University occupies a former royal garden; the architecture is a blend of ancient, traditional, and modern. The agricultural campus of Zhejiang University, located in the middle of Hangzhou, is spectacular, with graceful bridges arching over a lake and streams. The lotus ponds were just beginning to bloom when we visited. At the new campus of Zhejiang University, historic buildings—a seven-hundred-year-old temple and house—have been relocated to the new campus in a garden of their own. The remainder of the campus is ultra-modern but landscaped with trees, flowers, fountains, streams, and sculpture. Even campuses in dense urban settings (e.g., Shanghai, Beijing) have the feel of being in a world apart.

**Internationalization of Colleges and Universities**

The missions of the institutions we visited were very similar to that of a U.S. land-grant institution: teaching, research, and service. However, a fourth element was added by the Chinese institutions we visited: internationalization.

As the president of Fudan University said, “We must connect China with the world.” Those aren’t empty words. At Zhejiang University, for example, faculty must spend at least a year working overseas before applying for promotion to full professor. Another strategy being pursued by Zhejiang is to recruit diverse faculty. The goal is for one-third of the faculty to come from the Hangzhou region in China, one-third from other parts of China, and one-third from other parts of the world.

Students are also sent abroad to expand their worldview. The China Scholarship Council (CSC) national scholarship program, or “111” program, was named for the intention to send first-rate Chinese students to first-rate international colleges and universities to work with first-rate mentors. The program funds 5,000 Chinese students per year to earn a Ph.D. in another country. The scholarships are allocated to specific institutions (with more going to the top universities, such as Tsinghua, Peking, Fudan, and Zhejiang); the institutions then decide which students will receive support and at which colleges and universities they will study. Students are evaluated on their language and academic abilities; host colleges and universities are chosen based on the rankings of the programs in which the students want to study. All students funded through the CSC program are required to return to China, although they may stay in the other country for another two to three years after completing their Ph.D. to carry out a post-doctoral fellowship or gain other experience.

Chinese colleges and universities are actively learning from other countries— sending students, faculty, and delegations abroad. In addition, they host institutions from around the world. Each of the universities we visited was able to describe delegation after delegation that had sought out their institution. In spite of the time involved in hosting such groups, the Chinese universities are investing in developing relationships, learning about potential partners, and then making decisions about alliances to support their goals.

Exchanges work in both directions. The twenty-six-year-old, not-for-profit China Education Association for International Exchange seeks to facilitate international student exchanges. Among its goals is to have more U.S. students study at Chinese colleges and universities. While we were in China, we met with two groups of NCSU students studying in the country. One was a group of veterinary medicine students who were studying Eastern medicine and acupuncture for animals. The NCSU students were accompanied by four Chinese students, some of whom hope to study veterinary medicine, either in China or the United States. For most of their time in China, the U.S. students had relied on their four Chinese counterparts to explain food, transportation, and customs. On their last day in the country, we were delighted to hear the NCSU students explaining lox, bagels, and omelets to their Chinese friends over a Western-style breakfast.

**Information Technology**

Campus IT issues in China are very similar to those in North America. One institution was making decisions about which course management system to use. Another was wrestling with how central— or decentralized— its IT operation should be. Centers for teaching and learning with technology are just being established on campuses. Designing learning spaces is also a topic of discussion.
The scope of IT units in Chinese colleges and universities is reminiscent of U.S. IT organizations. For example, at Tsinghua University, IT is organized as the Computer and Information Management Center (CIC). CIC is responsible for research and strategic planning, system construction, operation and maintenance, user services, and training of the digital campus (including information infrastructure and information systems). Although many of the activities may be similar, the title of CIO does not appear to be used at Tsinghua. The university runs more than sixty information systems, including the university information portal, the office automation system, the e-learning system, the academic affairs administration system, the financial system, and a human resource system. The systems developed at Tsinghua are deployed to hundreds of other higher education institutions in China.

Commonly identified IT issues in Chinese colleges and universities include the following:

- **Organizational structure:** What IT services should be centralized? Which should be decentralized? What is the best organizational structure for a digital campus-support unit?
- **Professional development:** What are the professional-development opportunities for IT staff? Where do staff members go for management training? Leadership development?
- **Information integration:** How is information from different systems integrated to meet the needs of campus users?
- **Outsourcing:** What kind of work should be done within the IT unit? What work should be outsourced? Is the outsourcing approach the same for system development? System maintenance? System operation? User service?

The China Association of Educational Technology (CAET), established in 1991, is involved in educational technology and distance-education research, as well as promoting educational technology in schools and higher education. Like EDUCAUSE, CAET has its own magazine, the *China Educational Technology Magazine*. CAET staff were aware of the International Society for Technology in Education (ISTE) and organizations in Europe but did not know about EDUCAUSE.

Because of the need to accommodate millions of students and because of the interest in improving adult education, China has developed a massive educational radio, TV, and online education program. China Central Radio and TV University (CCRTVU) is an open- and distance-education institution run by the Ministry of Education. Courses are offered through radio, TV, print, audio-visual materials, and the Web. By 1999, the Radio and TV Universities (RTVUs) of China had produced over 2.6 million college graduates and more than 1 million secondary vocational school graduates. Students completing non-degree continuing education and in-service training number more than 35 million. A major source of teachers, the China TV Teachers
College (CTVTC) has graduated 710,000 teachers of primary schools and 550,000 teachers of secondary schools and has trained 2 million teachers and 1 million principals of primary and secondary schools.6

Online postsecondary education was officially authorized in 1998.7 Although the number of Internet users in China has grown dramatically, online education still faces challenges of accessibility and cost. Only 10 percent of Chinese have access to the Internet, and of these, half are on dial-up connections. Public Internet cafés are a major source of Internet connections; however, access is costly. Twenty-four hours of Internet connectivity per month costs the equivalent of one-tenth of the average salary in Beijing; families spend 7.4 percent of their income on Internet access.8

Economic Development
In China, the connection between higher education, a well-educated population, research, and the economy is well-respected.

The Role of Higher Education in Economic Development
Economic development is a major focus in China. Economic growth is 9 percent per year. Higher education plays a major role in that economic growth. Massive science and technology research parks have grown up across the country, often co-locating university researchers with businesses. For example, Tsinghua University Science Park (TUSP) houses over 20,000 employees and 400 R&D centers, along with companies such as Google, NEC, Microsoft, and Sun Microsystems. The mission and the design of the research parks are very similar to those associated with U.S. universities. Start-ups are encouraged. Faculty who develop a new product or process are assigned to the start-up to help ensure that it is successful.

Another example is the Suzhou Industrial Park (SIP), with the accompanying Suzhou International Science Park (SISP) and the Suzhou Higher Education Town (SHET). The 3,000-square-kilometer SIP is the largest cooperative
project between the Chinese and the Singapore governments. It is composed of an IT park, an international technology park, a life science park, a national software park, and an SME (subject matter expert) park. Currently 400,000 professionals and 2,700 foreign corporations are associated with the SIP. Begun in 1994, it represents an estimated investment of $4.5 to $5.0 billion (U.S.).

Chinese colleges and universities use other mechanisms for economic development as well. Zhejiang University, for example, mandates that new faculty spend two years working with businesses in the region. The goal is to ensure that faculty understand the challenges of real people and real businesses so that they will then align their research with those needs. This arrangement appears to benefit not just the community, through economic development and good relations, but the university as well. As businesses become stronger, they support the university by contributing funds, land for campus expansion, laboratories, and more.

**Innovation**

As the investment in science and technology parks illustrates, China is focused on innovation. At a session held with the Ministry of Science and Technology (MOST), we learned that China’s goal is to create an innovative nation and to increase proprietary innovations, leapfrogging developments in key fields. China has “increased its R&D investment at an annualized rate of nearly 20% over the past 10 years. China’s investment in 2004 was the 4th largest after the U.S., the EU, and Japan.” Not only is China investing in both basic and applied research and facilitating business-university partnerships; the country is also creating the capacity for science and technology commercialization, including the promotion of small and medium-sized businesses.

Another goal is to reduce dependence on foreign science and technology by 30 percent and to make China first in the world in science and technology innovation. To achieve that goal, the country is developing a national innovation system involving the development of science parks. MOST has invested in the creation of science and technology innovation programs (STIPs). Forty-three percent of national R&D investment goes into the fifty-four STIPs. The current estimate is that 10 percent of industrial growth is due to STIPs.

Another tool for stimulating innovation and economic development is the technology business incubators (TBIs). Their mission is to nurture “technopreneurs” and technology-based start-ups. Approximately 500 TBIs employ more than 700,000 workers. An incubation service system is provided to support the success of the incubators (e.g., infrastructure, planning, and consulting services). There are 58 university-related incubators, 9 international business incubators to accommodate foreign start-ups, and over 100 incubators for returned overseas scholars. The investments target specific industrial clusters, such as IT, biotechnology, medicine, material science, and energy.
Their strategies appear to be working. After China passed a patent law in 1985, it took fifteen years to receive 1 million patent applications, but only four more years to reach 2 million.\(^5\)

One additional factor affecting China’s development is the “sea turtles,” the phrase used to describe returning Chinese scientists and entrepreneurs. With their experience in countries like the United States, the “sea turtles” are able to quickly start up research labs and businesses. In addition, the number of returning Chinese students has increased. In
2004, 247,000 overseas students returned to China, influencing the science and technology workforce.14

Conclusion
Spending twelve days in China reminded me of many of the fundamentals of higher education that we can so easily take for granted in the United States. One is the importance of higher education in improving an individual’s opportunities and standard of living. Education leads to social mobility for individuals, as well as to economic vitality for countries. Education also opens societies to understanding and new options.

The contribution of colleges and universities to innovation and economic development is a lesson the United States learned decades ago—and one that China is integrating into its strategy for growth. Furthermore, IT is an integral part of the physical, virtual, and intellectual infrastructure—whether supporting research, instruction, or administration—of higher education institutions.

Even with the numerous similarities between the higher education institutions of the two countries, those of us in the United States can learn many lessons from China, just as we can from Japan, the Netherlands, Switzerland, the United Kingdom, Brazil, Argentina, Australia, New Zealand, and other countries. Through observing the practices and listening to the plans of colleges and universities in these countries, we sometimes reconfirm our existing beliefs, and we sometimes discover something new. Either way, there is much value in observing and listening.

Notes
3. Competitiveness Index, 70.
8. See also Timothy Cheek, “‘Go East Young Man?’ Opportunities and Challenges Presented by China,” presentation at the University Continuing Education Association (UCEA) annual conference, Vancouver, B.C., April 11, 2007.
10. Competitiveness Index, 68.