

The Process of Innovation in Chinese Higher Education

Address to

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Experimental District
Beijing Normal University**

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Good afternoon.

It is a pleasure for me to have the opportunity to speak with you this afternoon about the process of innovation in Chinese higher education. This is a matter in which I have been engaged personally over the past seven years, and my experiences have led me to hold certain beliefs about how this process can be most effective, for the overall benefit of the nation as it continues down an extraordinarily rapid path of reform and development. At the same time, I recognize that it might not be correct to overgeneralize from my own experiences. It might be that my personal perspective is too narrow, and that effective strategy needs to take into account other perspectives.

For that reason, I encourage you to listen carefully to what I am about to say, and to be very direct with me during the Q&A session if you believe that my analysis has gone down the wrong path.

Permit me to begin by summarizing for you my own experience with higher education innovation in China.

In the year 1998, I was serving as the dean of the University of Michigan Law School, and that was when I first visited China. The visit

changed my life. I saw the speed with which Chinese higher education was transforming itself, I persuaded my faculty colleagues that this transformation needed our support, and so Michigan developed partnerships with the Peking University Law School and the Tsinghua University law school.

In the early 2000's, while I was president of Cornell University, I became even more involved with Chinese higher education. Thanks to assistance from then-ambassador Yang Jiechi, we were able to resolve some misunderstandings that had arisen between Cornell and China during the 1990's, and I had the privilege of forging new partnerships between Cornell and Peking University, Tsinghua University, the China Agricultural University, and the China Academy of Sciences. I am especially happy that we were able to arrange the repatriation of a scientifically valuable fungus collection that Cornell had been safeguarding for China for more than seventy years.

My work as president of Cornell gave me a precious window through which to observe the reforms of Chinese higher education that were underway at that time. I am especially grateful to people like Xu Zhihong (then-president of Peking University), Hao Ping (then-vice-president of Peking University), Gu Binglin (then-president of Tsinghua University), and Zhu Chong-Shi (president of Xiamen University) for their willingness to share with me their plans and dreams for their schools, as well as to explain how their responsibilities fit within China's overall strategic vision for higher education.

In 2007, I was asked by the leaders of Peking University to become more directly involved in their efforts to internationalize Beida. President Xu, Party Secretary Min Weifang, Vice President Hai Wen, and Vice President Wu Zhipan had observed a troubling problem: the graduates of Peking University Law School were not perceived by employers (international or domestic) as having received an international legal education. If those graduates wanted to enjoy the opportunities that their talents deserved, they were forced to get further legal education, preferably in the United States.

The leaders of Peking University believed that it was not possible to create this kind of opportunity within the then-existing structure of the Peking University Law School. They believed that this kind of dramatic change could take place only if they created a new law school – an experimental law school – on Beida’s Shenzhen campus, led by the innovative reformer Hai Wen. They asked me to help them, and I agreed to move to Shenzhen to become the founding dean of the Peking University School of Transnational Law, widely known as “STL.”

STL began teaching students in 2008, graduated its first class of students in 2012, and is today believed by many to be the best law school in China – in terms of the students it admits, the foreign experts it attracts, its adherence to international standards of teaching and operations, and the quality of its graduates. I believe that what Peking University has accomplished with STL is a model not only for China, but for universities around the world.

While I was serving as dean of STL, the leadership of New York University asked me for advice on how they should respond to an innovative proposal from the leaders of the city of Shanghai. I worked with NYU President John Sexton and East China Normal University President Yu Lizhong to help develop a structure for NYU Shanghai, the first joint venture university in China to make use of an American university partner.

In 2012, I was asked by President Sexton to serve as the first American leader of this new university, in partnership with Chinese leader Yu Lizhong. Minister Hao Ping urged me to accept this assignment, and I did so. That summer I moved from Shenzhen to Shanghai, but I have continued to serve as the volunteer Chancellor of STL, to ensure that it continues its growth and development within Peking University.

Let me now place my own experiences with Michigan, Cornell, STL, and NYU Shanghai within the context of China’s strategy for educational reform and development. In doing so, I will refer frequently to a key document that was published in the year 2010, the Outline of China’s

National Plan for Medium and Long-Term Education Reform and Development (2010-2020), commonly known as “Blueprint 2020.”

As a society develops, it needs to give an ever-larger percentage of its citizens access to a certain form of higher education if it wishes to move up the economic value chain to the more lucrative sectors of economic activity. In this form of higher education, which I shall refer to as “essential higher education,” high school graduates acquire additional knowledge and develop additional skills that will be useful in their adult lives, especially during the first decade or two after they graduate.

Essential higher education can be provided by a number of different kinds of tertiary institutions. Some might be part-time institutions that provide focused training in a specialized field to students who are holding jobs while they study. Some might be full-time institutions that provide vocational education, and some might be full-time institutions that provide a more comprehensive education to students for as many as four years.

The past twenty-five years have been an extraordinary period for China when it comes to expanding the availability of essential higher education. The government decided to use the benefits of reform and opening up to invest heavily in that domain, and the impact was astounding. Between 1990 and 2005, the percentage of high school graduates receiving advanced training jumped from 4% to 22%. Blueprint 2020 calls for that percentage to increase to 40% by the year 2020.

And yet, as important as widespread access to essential higher education may be, a truly ambitious society must do more. That is why Blueprint 2020 concludes that China must develop a set of elite research universities that have “reached or approached the level of world-class universities.” Such universities are important to societies for three distinct but related reasons:

- * They provide the society’s most talented young people with what I call “leadership higher education,”

- * They conduct what I call “important academic research”; and

* They concentrate resources in ways that have what I call “snowball effects” on the communities where they are located.

I would like to take a few minutes to discuss each of those functions separately.

First, there is what I call, “Leadership Higher Education.” A truly ambitious society must pay attention to the special educational needs of its most talented young people. These are the ones who are most likely, as adults, to shoulder special responsibilities for creativity, innovation, and leadership within all sectors of the society. If these people are to make full use of their abilities for the benefit of society, they require more than just an essential higher education. They require an education that does more than simply feed them the knowledge and wisdom that the world has accumulated today and help them develop the focused skills required by the current economy. They require an education that develops their capacity to contribute to progress in the future.

Leadership higher education has several key features:

* it teaches students that there can often be more than one “right answer” to a problem, and leaders are able to hold that possibility in mind at all times,

* it teaches students that creativity requires one to risk making mistakes, and leaders are able to accept that risk in order to create hope for innovation, and

* it places students in situations where they must actively practice, over and over, the leadership skills of openness and risk-taking, as they learn to speak with their own, personal voices.

The techniques used to provide leadership higher education have been developed over many centuries. Whether they are being applied to matters of science, social science, or the humanities, however, it must be recognized that these techniques are always more expensive than the techniques required for essential higher education.

Essential education can be understood as a one-way transmission of knowledge (both general and specific) from teachers to students. It can be provided through large lectures, through reading materials, and online.

Student learning can be tested efficiently through tests that measure how well information has been absorbed and techniques have been mastered.

Leadership higher education is different. It is not a simple one-way transmission of knowledge. In the same way that talented young people learn to play basketball or the piano, it involves a back-and-forth exchange. Students must practice their skills in front of their teachers, and teachers must provide individualized guidance and feedback. Their efforts must be evaluated not only for whether they are “right” or “wrong,” but for whether they are thinking and speaking authentically for themselves.

In addition, leadership higher education requires students to be immersed in highly diverse and stimulating environments, where they can be exposed to different cultural perspectives and different intellectual styles. Only in such an environment can they appreciate the value of viewing problems from multiple perspectives; only in such an environment can they nurture the skills of critical thinking and respectful disagreement with others (including authority figures like their teachers).

The second function is what I call, “Important Academic Research.”

The word “research” is very broad. It includes any effort to study something in a rigorous way. Research is not something that is done only at elite research universities. Research is also carried out every day by governments, businesses, nongovernmental organizations, journalists, and ordinary individuals.

Elite research universities strive to do a special kind of research, one that differs from the research done in other places. When other organizations do research, they almost invariably have a practical objective. They want to do something with the results of their research. They want to use their research as the basis for action.

Elite university research strives to go at least one step deeper. The goal is simply to understand. We want to see the world more clearly than we did before. We want to “advance the frontiers of knowledge.”

This kind of research, which I shall call important academic research, has two features. First, important academic research offers society a new

insight that was not in any way obvious. It tells us something that we really did not know before the research was carried out. It involves more than simply following instructions that someone else has previously given.

Second, important academic research tells us something that is instructive about many different things. It shines a light over a large area of darkness, rather than just a small corner.

Elite research universities are defined as communities whose professors carry out important academic research. Elite research universities provide their professors both with resources and also with expectations.

Some of the resources that these professors receive are material. They have access to high quality scientific equipment if they need it. They are provided with salaries adequate to sustain them and their families. And they are provided with the time required to engage in sustained intellectual exploration.

In many ways, however, the most important resources these professors receive are other people. They are given the opportunity to work with talented faculty colleagues who collaborate with them and help them to improve the quality of their work. And they are given the opportunity to work with junior colleagues – postdoctoral students and doctoral students – who significantly multiply the breadth and depth of their investigations.

With these resources, however, come enormous expectations. These professors are expected to work very long hours, dedicating themselves to their teaching and research, rather than to making money “on the side.” They are expected to work with an absolute commitment to the principles of academic integrity. And ultimately they are expected to produce important academic research. Professors who do not meet these expectations feel a sense of shame and may be asked to leave.

The third function of an elite research university is to serve as a talent catalyst for its community. For hundreds of years, elite research universities have served as a kind of intellectual magnet that attracts many different talents together into a form of productive interaction.

Talented professors attract one another to a university. They feel that they will be inspired to do their own best work when they have the chance to discuss it with people who have the ability to understand it, criticize it, and help to make it better. For that reason, university leaders often speak of the “snowball effect” that comes from recruiting one great faculty talent.

Talented professors not only attract one another to a university; they also attract student talent. That attraction can make an important difference to the city where the university is located. Going to school there creates in students a knowledge of and an affection for that city, and it creates a momentum to work in that city after graduation. In the first 5 to 10 years after they graduate, they will be the creative innovators – the ones who start the new enterprises that keep a community growing and becoming ever more prosperous.

Even more important than the faculty and student talent they attract, elite research universities also attract outstanding neighbors. Those elements include entrepreneurs, venture capitalists, technologists, and lawyers. They are drawn to the pool of student talent available at elite research universities, and that in turn triggers a “snowball effect,” as they are also attracted to each other. In this manner, an elite research university is a natural catalyst that brings together all the necessary ingredients for a high-value-added entrepreneurial economy.

So now I would like to discuss China’s efforts to make its elite research universities world-class.

China does not have a long history of elite research universities, in the sense that I have used the term. For many decades, the universities that are now China’s key universities were required to provide essential higher education to the nation’s most outstanding students. As a poor country, however, China could not afford to invest in those universities in ways that are required if large numbers of faculty are to be engaged in important academic research and offering leadership higher education.

With the beginning of the period of reform and opening up, China’s leadership renewed a tradition dating back to early in the twentieth century, through which China’s most talented students were encouraged to

go overseas in order to receive leadership higher education. Many of those students have returned to China to make important contributions, and since the creation of the Thousand Talents Programs, that group has expanded substantially.

As reform has propelled China forward, the nation has for the first time accumulated the economic resources required to transform its elite research universities into world-class institutions. During the past two decades, the government has begun to make those necessary investments. Project 211, Project 985, and the different Thousand Talents Programs all involve substantial amounts of money, in addition to other programs of investment through the various ministries. How effectively are those resources being invested?

The investments are definitely making a difference. China's best universities are becoming more internationalized, in the sense of having greater numbers of foreign students and greater numbers of foreign professors on campus. They have invested in state-of-the-art laboratory equipment. And they have pushed their professors to conduct research and to publish their findings in international research journals.

My candid assessment, however, is that despite this progress in the direction of "internationalization," China's best universities still have a long distance to go if they are to meet Blueprint 2020's target of becoming elite research universities that have "reached or approached the level of world-class universities."

Over the past seven years I have spoken with a number of professors from world-class universities who have become deeply engaged with several of China's key universities. Each of these professors expressed frustrations with the slow pace of change that they have encountered. Their frustrations focused on:

- * Lack of academic integrity. They have found faculty colleagues far too willing to tolerate cheating by students, and even to engage in inappropriate behavior themselves.

- * Lack of commitment to teaching and research. They have found faculty colleagues far too distracted by opportunities to earn money.

* Lack of original innovation. They have found faculty colleagues content to replicate the work of others rather than pushing themselves to attempt risky, innovative work of their own.

* Waste of resources. They have seen grant funds spent to acquire expensive equipment that is never used, and to support research colleagues who do not contribute significantly to the work.

I believe I understand why these professors have experienced these frustrations. At the same time, I also believe that their frustrations can be overcome.

I believe international-level talents can be frustrated by their interactions with top Chinese universities due to the interaction of three structural factors:

First, the most senior and powerful faculty do not teach with the techniques of leadership higher education, and they do not engage in international-standard important academic research. This is not because those senior and powerful faculty are troublemakers; it is because they reached professional maturity in a different era. As teachers, they were expected to provide essential higher education – to giving inspirational lectures to as many students as possible. As researchers, they were expected not to produce important original research for an audience of international peers, but rather to provide understandable interpretations of the existing state of knowledge for more general audiences.

Second, it is natural for senior and powerful faculty at prestigious universities to be critical of “disruptive” changes in their institutions. Those same professors believe that part of their responsibility is to protect their universities’ positions of historic leadership in China. That means they are naturally conservative, placing a high burden of persuasion on anyone who proposes dramatic changes to the ways that the universities function.

And third, it is socially and politically difficult for university leaders to make changes that are opposed by the most senior and powerful faculty. Healthy traditions of academic freedom mean that faculty members are not just “employees” of institutions directed by their “leaders.” Pro-

fessors hold a special kind of institutional power, and university leaders cannot accomplish radical change if that change is actively opposed by a united faculty.

I saw these factors at work during my time in Shenzhen, as I watched the visionary leader Hai Wen attempt to bring about reforms that would elevate Peking University to the level of a true, international-standard, elite research university.

As Chancellor of the Shenzhen campus of Peking University, Hai Wen was asked by then-president Xu Zhihong to develop a set of experimental programs that could, if successful, have made an important difference to the university. His first project was a second business school for Peking University, the HSBC School of Business. His second project was STL. His most ambitious, dream project was to create a new program of undergraduate education, a program of liberal education that would offer its students a true liberal arts leadership higher education at or approaching the level of world-class universities.

When Hai Wen's projects had no direct counterparts in Beijing, senior professors on the Beijing campus did not object. But when there was a direct counterpart in Beijing, the professors there pressured the university's president and party secretary to block his efforts. The leaders resisted those pressures in the case of the HSBC School and STL. Sadly, they were unable to resist those pressures in the case of the undergraduate program.

With the benefit of hindsight, I now believe that Hai Wen could not have innovated in Chinese legal education if he had been required to change the existing Peking University Law School, or even to build a new "program" inside it. STL's success was crucially dependent upon the following factors:

First, It was a brand new school, created from scratch, without any preexisting senior faculty, on a distant campus;

Second, it was not a "copy" of an American school, but rather a school that combined the best qualities of American and Chinese education and improved both;

Third, it recruited prominent foreign professors rapidly, so that the “snowball effects” were powerful;

Fourth, it recruited Chinese administrators who had never worked previously at the university, so that they could create a new kind of administrative culture;

Fifth, it recruited the best senior faculty from the Beijing campus on a selective basis, so that it would have powerful faculty “champions” there; and

Sixth, the leaders of the university agreed that the school would be judged only on the basis of its outcomes (the quality of its graduates and the international influence of the research produced by its faculty), and that the school would be free to take experimental risks in pursuing those outcomes.

My experience so far at NYU Shanghai has been similar, and for similar reasons. As a sino-American joint venture university, NYU Shanghai is a brand new university, whose mission is to experiment and try new things. From the beginning we have known that NYU Shanghai would do things that existing Chinese universities would consider risky, and from the beginning we have known that not everything we try will work. We are an experiment, and we are both empowered and expected to experiment.

How are we using that power? Our admissions process is structured to create a student population that is 50% Chinese and 50% international. Our Chinese applicants have to submit comprehensive portfolios about their high school performance, the top 500 are invited in batches of 100 to 24-hour candidate days on campus, and the top 120 of them are given conditional admission – offers contingent on their scoring in the top tier on the Gaokao – and the final few seats are awarded after we see the Gaokao scores.

When they arrive on campus, every Chinese student is assigned to live with an international roommate. All must follow a mandatory core curriculum that stresses the values of liberal education, updated for the 21st century. Substantively, they all have required courses in the human-

ities, social sciences, natural sciences, and mathematics. Everyone must learn about China in the world, and the world in China. Classes are taught in English, but international students must become proficient in Chinese. The teaching methods that we use push them to be active learners, willing to risk error and failure, good writers of English, critical thinkers who are simultaneously open to new perspectives, logically rigorous, thoughtful about the limits of their own knowledge, and effective working in teams that include colleagues from different cultures.

Students are not assigned majors; they choose their own, and they may not decide until the end of their first year of classes. After their first two years in Shanghai, they must go to one of the 14 NYU campuses outside China to study in their junior year. When they return we expect them to be cosmopolitan thinkers, sophisticated about life in a deeply multicultural and interdependent world.

As a comprehensive research university, we expect our tenured and tenure track faculty to conduct research that is original and important. Tenure reviews stress quality rather than quantity, with quality defined as an ability to develop original insights that illuminate broad arcs of material, deploying rigorous analytical frameworks with uncompromising academic integrity. Rather than counting how many articles are published in which journals, we rely on our own readings of the scholarship, together with the judgments of international reviewers who carefully examine the corpus of published work.

We are able to innovate and take risks because we are a new institution with no past. Administratively we stand outside of East China Normal University and are not subject to its policies and traditions. And while we stand administratively inside of New York University, we enjoy enormous freedom to do things in ways that are different from the way they are done in other parts of NYU.

Friends at other Chinese universities sometimes say to me, “Jeff, NYU Shanghai is able to innovate and experiment because it is a new university with no past. What you are experiencing really has nothing to do with the future of China’s top established universities, because they

are powerfully constrained by institutional inertia. That means there is no way China will be able to achieve the Blueprint 2020 Objective.”

I of course agree that China faces a genuine challenge as it works to turn increased investment in elite research universities into meaningful improvement. China has to nurture the development of new cultures of teaching and new cultures of research, without insulting the contributions of those who have successfully led the improvements of the past two decades.

But I believe that every one of China’s top universities has the power to reinvent itself if it is committed to the following core principles:

1. It must be committed to establishing experimental zones of risky innovation within the university.

China’s process of reform and opening up was not launched in the middle of the largest cities. It began with four small communities (including Shenzhen) that were granted special autonomy, received special forms of national support, and were encouraged to take risks that many experts believed would fail.

Of course, many of the reform initiatives did fail. Despite thoughtful designs and careful implementation, they ultimately did not work as the designers had hoped. Overall, however, the successes were much more important than the failures. The experiments were extended to new development zones within large cities (including Pudong), and some of their best ideas were implemented nationwide.

Scholars of “disruptive innovation” in the business world have observed the same phenomenon. It is extremely difficult to attempt dramatic changes within successful, well established enterprises. Such efforts are often considered to be inconsistent with “best practices” for building on past successes. For that reason, successful enterprises often renew themselves by creating special new subsidiaries whose mission is to experiment and take new risks, and to place those subsidiaries outside the day-to-day control of the established parent company.

I believe that the experiences of Peking University's Shenzhen campus and of NYU Shanghai demonstrate that this lesson also applies in the world of elite research universities. When university leaders treat a campus as a "special zone," freed from day-to-day control by senior professors at the university, some (but not all) of its experiments were breakthrough successes. In contrast, when senior professors at the university are permitted to intervene, they tend to stifle efforts to innovate.

2. It must be committed to a professionalized professoriate.

In some countries, university professors – even at the very best universities – are paid far less than they could earn by "jumping into the sea" of private sector employment. In those countries, it is considered normal and acceptable for professors to devote most of their time to work as professional consultants, provided only that they continue to teach at a minimally acceptable level of quality.

At world-class elite research universities, the model is reversed. The professoriate is fully "professionalized." Professors are paid a respectable salary. In exchange they agree that they will devote almost all their time to teaching, research, and public service. The universities impose strict limits (usually four days in a 30-day month) on the amount of time that professors may devote to paid consulting work.

In my opinion, it is almost impossible for an elite research university to be world class without a professionalized professoriate. High quality teaching and important academic research both require too much commitment to be carried out successfully by someone who sees himself as having to perform another "job."

3. It must be committed to quality standards, not quality measures.

If a professoriate is professionalized, so that professors receive respectable salaries, it is reasonable to expect professors to be good teachers and good scholars. The difficult question is how a professor's quality should be assessed.

In the business world, principles of “scientific management” often call for employers to give their employees “incentives” to work hard and achieve “key performance indicators” (“KPI’s”). Businesses that work in this way are thought to operate more fairly, and more objectively, ensuring that employees are rewarded only for their productivity, and not for their social connections.

While this technique can be effective with certain forms of work, where “quality” is well understood and easily measured, it can be quite counterproductive when applied in other domains. Suppose a restaurant measures how many customers a waitress serves each hour but does not measure how happy the customers are with her service. If the restaurant gave bonuses only according to what could be measured objectively, it would be creating the wrong incentives and would be harming itself in the long run.

In recent years, some universities have attempted to develop quantitative performance measures to evaluate their professors. To evaluate teaching quality, they have considered only the professors’ average popularity score on student evaluations. To evaluate research quality, they have considered only the number of articles published, or the number of words published, or the number of articles published as a “lead author” in certain “top journals.”

In my opinion, such efforts are deeply misguided as a way of evaluating the quality of professors at elite research universities. A professor’s quality as a teacher depends on how much his or her students developed their skills and knowledge by taking the course. A professor might be a good teacher for some students and not others. A professor who is a good teacher might or might not be popular.

Similarly, a professor’s quality as a researcher depends on how much his or her research has told the world something new, non-obvious, and broadly instructive. In one or two short articles, a scholar like John Nash can completely reform an entire field of study. Conversely, a scholar can publish hundreds of relatively trivial pages every year and add virtually nothing to the universe of human understanding.

In addition, if a professor knows that his or her compensation and recognition will depend only on certain quantitative measures, that professor is very likely to adjust his or her behavior accordingly. If one kind of research is “safe,” that kind of research will receive greater priority, even if a “riskier” kind of research is more likely to produce a breakthrough insight into a field.

I am not saying that quantitative measures are always completely meaningless when considering the quality of a professor’s performance. I am saying only that a university that commits itself to purely objective “quality measures” instead of “quality standards” is creating the wrong incentives for its faculty and is therefore much less likely to become a world-class elite research university.

4. It must be committed to international-standard processes of quality assessment.

The quality of a professor’s teaching and research must be evaluated. But quantitative measures are not an appropriate way to conduct the evaluation. And if one were to rely only on the opinions of the dean or other professors in the same department, one would face a serious risk that improper social considerations might contaminate the assessment. What is to be done?

The best solution is to create a process, applied consistently, through which each professor’s work is evaluated, according to clearly stated quality standards, by people who are unlikely to be subject to social influence.

In the United States, this process goes according to two different names. When a researcher seeks a grant from the government to support his or research, the grant proposal is subjected to a process of “peer review.” Similarly, when an article is submitted to an elite journal or a book is submitted to an elite publisher, the work is also subjected to “peer review.” Experts in the field from other universities are given the manuscript (without the author’s name attached) and are asked for their candid evaluations.

When a professor is considered for promotion or tenure, a similar process is applied to the entire body of the professor's published scholarship. Experts in the field from other universities are asked to submit "outside letters," discussing and criticizing the work and indicating whether they would welcome the candidate as a tenured professor at their own universities.

The processes of peer review and outside letters are time consuming and expensive (the reviewers are paid small stipends for their work). But they are essential to ensuring that professors are evaluated fairly, according to appropriate quality standards. I strongly believe that China's elite research universities should move to adopt these standards.

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These commitments are challenging, but they are not impossible. A few senior officials at some of China's top universities have already embraced them. By doing so, they are propelling their institutions rapidly forward down the path to global leadership.