



Science, Technology and Education News from China

Number 95 – May 2012

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Introduction

This month's newsletter starts with a summary of the Chinese Ministry of Education's newly launched national campaign to improve the quality of university education. In science and technology this month, Nature China publishes the *Nature Publishing Index 2011 China* with statistics on China's best performing research institutes. In education, the third International Congress on Technical and Vocational Education and Training TVET was held in Shanghai. Research showed that business schools at BRIC countries are becoming increasingly popular among students from both developing and developed countries. Students registered to take China's college entrance examination reached an all-time low. US Clampdown on visas for Confucius Institutes Teachers triggered worries and anger in China. In health, a student of Fudan University in Shanghai set up a non-interest food safety website which quickly gained extensive popularity in China.

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¹ Please click on the blue texts to activate the hyperlinks to either email addresses or related websites.



Policies

Chinese Universities: Quality Boost Campaign

The 2'138 universities in China are producing millions of university graduates every year, making China unarguably the country with the biggest university-educated talent pool. But the overall scale of resources doesn't compensate the lack of high-quality R&D output from the faculties, poor academic performance of students and low employability of fresh graduates.

To address the challenges, the Ministry of Education recently launched a "quality boost" campaign, covering teaching, student competences and employability, research and innovation. The Ministry planned to achieve the goal by **maintaining the current admission capacity, raising the standard, facilitating cooperation and implementing reform**.

The Ministry of Education has decided to maintain the current admission capacity of public universities, implying that the Ministry is ready to put a stop to the rapid expansion of the number of universities and the quantity of university students. Admission capacity growth, however, is allowed for technical colleges, professional masters, private universities and joint institutes.

National quality standards for both faculty and students will be set up for universities and technical colleges to streamline future assessments. Special training plans are to be made for students in "priority majors" such as medical **doctors, lawyers, engineers, teachers and agriculture scientists** in order to enhance their competence. Courses in innovation, entrepreneurship and professionalism are to be offered to improve students' overall employability. Universities are required to set progressive goals on the percentage of faculty members and students with overseas study/ training experience.

International cooperation is considered as one of the key drivers to boost the quality of education. On collaborative programs, faculty and student exchange, transferrable credits and joint degrees and facilities are encouraged and supported. The Ministry is also ready to support a few "**model joint institutes**" and a few Chinese universities' **offshore establishment**, which China believes is an indication of concrete international cooperation.

Attracting overseas talents stays a priority, and the stakes have been raised. On top of existing incentive programs such as the "Thousand Talent Program", overseas talents will be allowed to take up positions as deans and presidents—both positions carry certain political implications and hereinbefore open only to Chinese nationals.

On research and development, universities are encouraged to pair with peer universities, research institutes and local governments to form "innovation consortiums" in order to facilitate "industrial development", "regional development" and "social development" with maximized resource and personnel capacity. The consortium plan is termed "**Project 2011**" and will be the priority for the Education Ministry in the near future. **Social sciences** are also set to play a more important role in university research, with country studies, sinology, development planning and national policy making being the most prioritized areas. Universities are encouraged to act as think tanks at home to provide consulting services to not only the governmental but also the private sector.

The campaign is a clear indication on the current challenges faced by the Chinese higher education sector—declining quality of the university curriculum, loosening of academic standards, lack of innovation capacity among the researchers and detachment from the industry. On another note, the new projects and policies reaffirmed the fact that university management as well as its activities is still highly centralized in China. R&D is highly **top-down, priority-driven and project-based**.



News

1. Skills Needed for Work and Life

(China Daily, 10-05-2012)

The Third International Congress on Technical and Vocational Education and Training (TVET) opens in Shanghai on May 14. Convened by UNESCO in partnership with international development partners, it will bring together about 800 delegates from UNESCO's 195 member states representing a wide range of stakeholders including ministries of education, labor, finance and health; international organizations, the private sector, employee organizations, trade unions, academia, youth and civil society. The participants reflect the multi-dimensional nature of the challenge of reforming TVET at a time when skills and employment have become a leading policy concern worldwide.

Thirteen years after the Second International Congress in Seoul in 1999, the Shanghai Congress comes at a time when there is strong demand for **upgrading skills, acquiring new ones, and improving linkages between learning and work in the face of demographic shifts, rapid labor market changes and youth unemployment** in many countries. The uncertain global economic conditions have heightened the need to transform TVET systems to make them more responsive.

The central focus of the Congress is on how to transform and expand TVET to ensure that all young people and adults can develop the skills needed for work and life. The Congress will provide a unique platform for the sharing of knowledge, best practices and innovative ideas and charting new directions for transforming TVET systems.

The Chinese TVET system connects education at various levels and is linked with general education. It has over 6,000 technical schools and employment training centers and 20,000 private vocational training institutions. Enrollment in secondary vocational education is now about 22 million, more than half of the total higher school level enrollment; the highest proportion in any country in the world. Even in higher education, almost half the students now are enrolled in vocational education. The government provides financial support to 12 million secondary vocational students from rural areas and families with financial difficulties. The employment rate of graduates of secondary vocational education remains more than 95 percent and higher vocational education employment is more than 72 percent.

One of the salient features of China's vocational education is the strong cooperation among government, enterprises, trade associations and training institutions. Nevertheless the next phase of China's social and economic development will pose challenges for the TVET system which will have to step up to meet the needs of what will soon be the world's largest economy in terms of GDP. China is seeking a major transformation from being a low-end manufacturing hub to a more sophisticated, service-oriented and creative economy. While it seeks to improve its competitiveness through innovation it has to reduce its carbon emissions, minimize ecological damage and improve energy efficiency. The TVET system will have to shoulder the responsibility of training a more skilled work force capable of adapting to the new demands of the labor market, globalization and technological upgrading through a process of lifelong learning. This will require openness and flexibility to cater to the needs of youth, women and the aging population.

The migration of rural people to cities poses a major challenge in terms of livelihoods of migrants, reskilling surplus agricultural labor and urban integration. Modernization of agriculture, development of the non-farm sector and the balanced development of the rural and urban areas demand a more diversified and dynamic TVET system.

All these and other related issues will be examined at the Shanghai Congress. This will provide an excellent opportunity for Chinese policymakers, academics and enterprises to share experiences; compare systems and fine tune their national strategies to improve the quality of TVET so as to respond to the expectations of their societies, especially youth, and to tackle emerging inequities to achieve the vision of a sustainable moderately well-off society.

(http://www.chinadaily.com.cn/opinion/2012-05/10/content_15259500.htm)



2. Business Schools: Looking Local for a Global Reach

(New York Times, 17-05-2012)

Alix Chen earned a scholarship to HEC Paris, a top business school, and then turned it down. Instead, she chose the Shanghai branch of the China Europe International Business School, or CEIBS, in her home country.

"The economy here is booming and changing so fast — I was afraid I would lose so much if I left for so long," she said by telephone.

Business schools in developing nations are getting more attention from both domestic and foreign students.

Prospective business school students are starting to look beyond traditional destinations in the West. And those who are originally from the BRIC developing nations — Brazil, Russia, India and China — are increasingly exploring the possibilities at home.

This group already has a name. In a column for University World News last month, one higher education specialist, Rahul Choudaha, called them "glocal students," or "people who have global aspirations, but need to stay local."

The number of Westerners studying at BRIC programs is rising, though the total number is still low. According to the Graduate Management Admission Test, the number of U.S., Canadian and West European students sending GMAT scores to programs in BRIC nations increased from 381 in 2007 to 639 in 2011.

In 2009, China made the list of top-10 countries to which American GMAT test-takers sent scores for the first time. At the Hong Kong University of Science and Technology, the number of applicants from North America and Europe more than doubled between 2006 and 2010.

The United States remains the top M.B.A. destination for students from BRIC countries. Still, the demand for Western degrees is leveling off, while demand for local programs is showing signs of rising. The number of score reports sent by BRIC citizens to home country programs grew 50 percent between 2007 and 2011.

The allure of better job prospects in the emerging markets, particularly China, is frequently cited as a major factor. India, China and Brazil are ranked in the top 10 countries to have the largest expected increases in M.B.A.-related jobs over the next 12 months, according to the 2011-2012 QS TopMBA.com Jobs and Salary Trends Report .

American and European M.B.A. programs are responding to these changes by internationalizing their curriculums, expanding their study-abroad options, offering joint degrees with foreign campuses and recruiting students from developing nations.

Top programs in China, India, Brazil and Russia have been around only since the 1990s and are just now developing the faculty and facilities needed to compete for top international students.

"High-end applicants will not take a risk for an M.B.A., because they need a brand name," said Dr. DeKrey of HKUST. "It's very hard to reconcile an option of a top-10 Western school unless you can get comparable or close to quality brand in Asia. Because we are now able to make that argument, we are now on the list of those best applicants."

(http://www.nytimes.com/2012/05/18/world/asia/18iht-sreducbric18.html?_r=1&partner=rssnyt&emc=rss)

3. Chinese Despair at Endless Food-safety Crisis

(USA Today, 19-05-2012)

Salivating on their sofas, TV viewers across China have been enjoying a documentary series on the nation's world-famous cuisine. From the lotus and rib soup of Hubei to the mountain mushrooms of Tibet,



China on the Tip of the Tongue is so tantalizing that many fans responded online, "I want to lick the screen."

But another reaction to the top-rated food show by state broadcaster CCTV has been disgust at its failure to highlight one of the most pressing concerns of China's citizens: the daily danger of fake and adulterated foodstuffs.

Regular surveys reveal that China's authoritarian government struggles to reassure citizens that it can deliver the safe food they rank as a top priority.

In the city of Guangzhou, whose Cantonese cuisine is celebrated worldwide, more than 46% of residents are dissatisfied with food safety, and more than 37% said they had suffered recent food-safety problems, according to a survey released this month by the Guangzhou Public Opinion Research Center.

"There are two Chinas on the tip of the tongue," says Shanghai student Wu Heng, a fan of the series. "There's the China shown on TV, with its traditional food culture and long history. Then there's another China shown on my website, the current environment in which black-hearted enterprises make black-hearted foodstuffs and have a large market."

Wu, 26, became active in the food-safety cause because of his favorite dish of braised beef and rice. Startled by a news report on fake beef, he was inspired to create an online food-safety database that allows visitors to add the latest problems nationwide, often involving the illegal use of additives.

With his website, "Throw It Out the Window," Wu hopes public awareness and pressure will produce bold steps to tackle China's food-safety crisis. His site attracted more than 1 million views a day earlier this month, Wu says.

China appears a long way from Western-style food-safety standards when Chinese still can't trust the oil they use to cook much of their food. For months, authorities have cracked down on "gutter oil," used cooking oil dredged from the gutters outside restaurants and resold. Today, the term refers to any illegal oil, such as the stuff made from rotting animal parts in Zhejiang province and from industrial fats used for soap in Yunnan.

Even the state-run Xinhua News Agency despaired this month over food safety, noting formaldehyde-sprayed cabbage -- done to retain freshness -- "sparked public anger and prolonged the seemingly unending discussion on what, if anything, is safe to eat."

[...]

(http://www.usatoday.com/NEWS/usaedition/2012-05-29-China-food-scares_ST_U.htm)

4. **US Clampdown on Visas for Confucius Institute Teachers Draws Indignation in China**

(Washington Post, 25-05-2012)

A U.S. clampdown on visas for instructors at China's flagship cultural program overseas has incensed Beijing, with state media pouncing on it as an attempt by Washington to frustrate Chinese global ambitions.

A U.S. directive said many Chinese instructors had the wrong kind of visa, though it appeared largely resolved by May 21. The U.S. State Department expressed regret over how the matter was handled and said it was working on a way for teachers to update their status without returning home.

But the commotion it set off has underlined China's sensitivity about the more than 300 Confucius Institutes it has opened globally in less than a decade as a way of spreading its influence abroad.

They primarily give language instruction, but also engage in cultural exchanges and are set up at universities overseas, where they have drawn concerns that they are propaganda machines aimed at stifling academic criticism of China's Communist Party.

The State Department announced May 17 that many teachers at Confucius Institutes on U.S. university campuses would have to switch their visas, because they were teaching kindergarten through 12th grade



while holding visas for university-level instructors. There were fears hundreds of them would have to return home, disrupting more than 80 U.S.-based institutes.

Chinese state media reacted swiftly, calling the restrictions an anti-Chinese witchhunt meant to distract Americans from a bleak economic picture in a presidential election year.

"This absurd measure reflects illogical thinking and an immature mentality," said an editorial by state-run People's Daily. "Finding scapegoats, witch hunting and shifting focuses are not the right ways to do things."

In Washington, State Department spokeswoman Victoria Nuland said the agency was working on ways for the teachers to update their visas while remaining in the U.S. She said on May 22 that the original directive issued by the U.S. on May 17 had been "sloppy and not complete" and a new directive issued Friday should clarify matters.

"People-to-people relations between the U.S. and China are a very high priority for us," Nuland told a news conference. "We want to get this right. That's why we are fixing this guidance."

China has set up 81 Confucius Institutions in collaboration with U.S. colleges since 2004.

They are similar to cultural centers such as France's Alliance Francaise and Germany's Goethe-Institut, but differ in that they make no claim to be independent from their country's government.

Many U.S. universities who host the institute say there's been no interference from the Chinese government, and say the programs add diversity and much-needed language resources for local communities.

"The fear that these teachers would import unacceptable content or pedagogy has proven unfounded," wrote Susan Carvalho, associate provost for international programs at the University of Kentucky in a blog for the Chronicle of Higher Education.

(http://www.washingtonpost.com/world/asia_pacific/us-clampdown-on-visas-for-confucius-institutes-teachers-draws-indignation-in-china/2012/05/25/gJQA6FACpU_story.html)

5. Nature Publishing Index 2011 China

(Nature, 24-05-2012)

The Nature Publishing Index 2011 China — a supplement to the 24th May 2012 issue of Nature — provides a detailed assessment of the various research strengths of Chinese institutions and cities based on their output of research articles in Nature-branded primary research journals in 2011 (with 2010 and 2009 data included for comparison). The publication also addresses China's performance in a regional and global context through the Asia-Pacific rankings and the Global rankings.

According to the Nature Publishing Index 2011 China, research articles with authors from China represent 6.6% (225) of the 3425 papers published in Nature-branded primary research journals in 2011, up from 5.3% (152 papers) in 2010. By comparison, authors from China published just 12 articles in Nature-branded primary research journals in 2000. Notably, of the 225 articles published in 2011, 48 were published in Nature Communications which launched in April 2010.

The top ten Chinese institutions by contribution are: the Chinese Academy of Sciences (CAS), the University of Science and Technology of China (USTC), Peking University, Tsinghua University, Hong Kong University of Science and Technology (HKUST), Xiamen University, Shanghai Jiao Tong University (SJTU), the University of Hong Kong (HKU), Nanjing University and BGI Shenzhen.

CAS has a strong lead, publishing 62 articles in Nature-branded primary research journals in 2011, but it must be born in mind that it is a very large institution with over 100 institutes and close to 50,000 researchers and so a high count is to be expected. Among the universities, USTC is number one ahead of Peking University and Tsinghua University, which are generally recognized to be the top two universities in China.



The top ten Chinese cities by contribution are: Beijing, Shanghai, Hefei, Hong Kong, Nanjing, Wuhan, Xiamen, Hangzhou, Shenzhen and Xi'an. These ten cities account for approximately 86% of China's contribution to Nature-branded primary research journals in 2011, and also house 19 of the top 20 institutions in the China rankings.

The Nature Publishing Index 2011 China also presents a new analysis of ISI Web of Knowledge data, showing that China now publishes more than 10% of the world's most cited scientific research. China increased its share of the top 1% of highly cited scientific articles from 1.85% (127 out of 6,874 articles) in 2001 to 11.3% (1,158 out of 10,238 articles) in 2011, and now ranks fourth globally. By 2014, China could surpass Germany and the United Kingdom, who currently hold second and third places. The United States, which leads the world, has seen its share of highly influential research drop from 64.3% (4,420 out of 6,874 articles) in 2001 to 50.7% (5,190 out of 10,238 articles) in 2011.

(<http://www.natureasia.com/en/publishing-index/china/2011/>)

6. **China's College Entrance Examination 2012: Another Decrease on Applicants**

(Guangming Daily, 1-06-2012)

China's College Entrance Examination, also known as "Gaokao", will take place on June 6 -7 again this year. The examination is the only entry point for Chinese high school students to get into Chinese universities.

Statistics have shown that 9 million high school students are registered for this year's college entrance examination. The number has been dropping for 4 consecutive years, down from 10.4 million in 2008.

Accompanying the decline on university applicants is the increase of admission capacity and overall admission rate. Chinese universities enrolled a total of 6 million students in 2008, and the enrollment capacity is expected to reach 7 million in 2012, driving the admission rate to 75% of up—a record high.

Theoretically, Chinese students now should have more access than ever to higher education, but the higher education institutes in China are experiencing difficulties in attracting enough applicants. Second- and third-tier universities as well as vocational colleges are the most hit. In the province of Shandong, where admission rate was usually one of the lowest, 967 higher education institutes failed to admit enough students in 2011.

The decrease of university applicants and university enrollment might result from a) demographic change, b) increasing interest in overseas studies and c) declining faith in the quality of local universities.

Events (June – July 2012)

June 2012

5th International Symposium on Polymer Chemistry

Date: June 2nd

Place: Changchun

Contact: Changchun Institute of Applied Chemistry, CAS

10th International Symposium on Polymer Physics

Date: June 4th

Place: Chengdu

Contact: Institute of Chemistry, CAS

7th International Symposium on High Technology Polymer Materials

Date: June 3rd

Place: Xi'an

Contact: Institute of Chemistry, CAS

11th Brain Connectivity Workshop 2012

Date: June 6th

Place: Chengdu

Contact: Institute of Automation, CAS

The 2nd China International Exhibition on Coal Processing & Utilization and Coal Chemical



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Date: June 6th
Place: Beijing
Contact: China National Coal Association

6th International Weed Science Congress

Date: June 18th
Place: Beijing
Contact: China Society of Plant Protectionm
CAST

The 33rd International Conference on Programming Language Design and Implementation
Date: June 11th
Place: Beijing
Contact: Institute of Computing, CAS

2012 4th Shanghai International Wear-Resistant Materials, Industrial Ceramics Exhibition and Mining Equipment Exhibition
Date: June 13th
Place: Shanghai
Contact: Shanghai S&T Development and Exchange Center

The 3rd (2012) Shanghai International Surface Engineering and Ceramics Industry EXPO

Date: June 13th
Place: Shanghai
Contact: Shanghai S&T Development and Exchange Center

World Dairy Expo and Summit

Date: June 16th
Place: Zhengzhou
Contact: China Great Wall International Exhibition Co. Ltd.

The 12th International PGE Symposium

Date: June 18th
Place: Guiyang
Contact: Institute of Earth Chemistry, CAS

8th China International Pressure-casting Congress and Exhibition
Date: June 19th
Place: Shanghai
Contact: Shanghai S&T Development and Exchange Center

4th International River Land-scape Summit
Date: June 23rd
Place: Wuhan
Contact: Wuhan Botanic Garden, CAS

July 2012

The 31st IUBS General Assebly and Conferences on Biological Sciences and Bioindustry
Date: July 5th
Place: Beijing
Contact: Institute of Zoology, CAS

The 4th International Exhibition and Symposium on Exhibits & Technical Facilities of Science Centers
Date: July 5th
Place: Beijing
Contact: New Technology Development Center, Chinese Association of Science and Technology

China Shale Gas Forum 2012
Date: July 5th to 6th
Place: Shanghai
Contact: <http://chinashalegasforum.com>

The 9th World Conference on Intelligent Control and Automation
Date: July 6th

Place: Beijing
Contact: Academy of Mathematics and System Sciences, CAS

2012 IEEE International Conference on Service Operations and Logistics, and Informatics
Date: July 8th -10th
Place: Suzhou
Contact: Institute of Automation, CAS

2nd International Conference on Chemical Engineering and Advanced Materials
Date: July 13th to 15th
Place: Guangzhou
Contact: Guangzhou University

2012 International Conference on Advances in Mechanics Engineering
Date: July 14th – 15th
Place: Haikou
Contact: <http://www.icame.org>



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2nd International Conference on Advanced Polymer Matrix Composites

Date: July 22nd to 25th

16th International Conference on Plastination

Date: July 23rd

Place: Beijing

Contact: Chinese Society for Anatomical Sciences, CAS

29th International Conference on Photonic, Electronic and Atomic Collisions

Date: July 24th

Place: Lanzhou

Contact: Institute of Modern Physics, CAS

Place: Harbin

Contact: Harbin Institute of Technology

2012 International Conference of Intelligence Computation and Evolutionary Computation ICEC 2012

Date: July 25th

Place: Huangshan

Contact: Institute of Physical Sciences, CAS

5th International Conference on Brain Inspired Cognitive Systems

Date: July 29th

Place: Beijing

Contact: Institute of Automation, CAS