Science, Technology and Education News from China

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Introduction

As the new academic year begins, this month's newsletter starts with an analysis on a new phenomenon in Chinese top university: decreasing number of rural students. Also in this month, Shanghai Jiaotong University releases the 2011 Academic Ranking of World University, the Ministry of Railway decided to slow down bullet trains after the Wenzhou train collision, the Ministry of Science and Technology releases new development plans for university-based high-tech start-ups and new plan to attract returnees. Beijing will soon give ok for new nuclear plants. In health, Chinese experts call for more funding support for lung cancer tests.

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

Policies

Education Changes Your Fate: Not So Much the Case Any More for Underprivileged Students

"Education changes your fate" has been a popular saying in China for many years. It is, however, losing credibility now as statistics show a steady loss of underprivileged students in China's top universities.

For Chinese Agriculture University (one of the so called "211" and "985" elite-universities), 28.26% of the newly admitted students are from rural families (with "rural" hukou). This is the first time in a decade that students from rural family account for less than 30% of the student group. The situation is even worse in Tsinghua University and Peking University. Among 3,300 students enrolled by Tsinghua, only around 17% are from rural areas. The percentage is around 10 to 15% for Peking University. Yet rural students account for nearly 62% of all who sat for the national college entrance examination.

Education resources in China have been focused on urban areas and coastal cities. Students from rural families are already lagging behind as the facilities and faculty of their schools cannot keep up with urban schools. They are further pushed backwards after the Chinese Ministry of Education started to reform textbook-based examination into competence-based ones. In response to the Ministry's call, tests began to catch up with the new happenings in the world. While urban students have easy access to resources from library, media and internet, rural students know much less about the new developments and new technologies and therefore couldn't do well in the competence-based questions.

Rural students are also not the beneficiaries of preferential policies of the Chinese Education Ministry. As part of the education reform, bonus points or recommendation opportunities are provided for selected students. Such benefits in college entrance examination ("gaokao") are offered to students of ethnic minority origin, students with special talents (i.e. music, art, PE, science) and students who pass independent admission tests of selected universities that enjoy certain autonomy in admission. Training for special skills is not exactly affordable for rural students. Independent tests, usually examine students on their range of knowledge, vision and critical thinking, are also not to rural students' advantage. As for recommendation opportunities, candidates are usually dominated by one or two provincial "super middle schools" which enjoyed financial support from the local government and had the best teachers in the province. At the end of the day, the preferential policy, which aims at promoting equal opportunities to higher education, becomes biased to urban students and rich kids.

To address this problem, in 2011, Tsinghua University became the first to launch an "A+B" project for their independent student admission. Besides standard tests to recruit students with special talent, part of the admission quota was dedicated to underprivileged students. Admission officers in Tsinghua said in an interview that they were "very happy with the new plan and hope to provide a new access to Tsinghua University for brilliant students from rural areas."

But for most of the rural students who would like to change their life by going through higher education, the practical way is still to first enter the top middle school of their province, work extra-hard, get a high score in gaokao and go to a top university. Although university admission rate in China getting higher by year, second-tier universities or technical colleges are no longer considered a good alternative. The tuition fee and accommodation fee of university—which usually costs around CNY 12,000—is almost the annual income of a Chinese farmer's family. As the number of university graduates skyrocketed over the years, a degree from mediocre university doesn't offer any promising employment prospect in big cities at all. Graduates started to go back to their hometowns, only to find out that even after university education they are still doing the same job as their former high school students who never went to university. For many of them, higher education has simply become a less cost-effective deal if it is not in a top university.

The decline of rural student crowd can partially be explained by China's rapid urbanization process. Compared with 20 years ago it is now increasingly difficult for underprivileged students to climb upwards on the social ladder by pulling themselves through higher education.

News

1. 35 Chinese Universities Listed in Shanghai Jiaotong Ranking 2011

(China Youth News, 16-08-2011)

The Center for World-Class Universities of Shanghai Jiaotong University released the 2011 Academic Ranking of World Universities (ARWU) on August 15. 35 Chinese universities are listed as World Top 500 universities, up from 33 last year. Beihang University and Beijing Normal University were listed for the first time. The best-ranked Chinese university is still Tsinghua (151-200), followed by Fudan University (201-300). China has become the country with the 4th largest number of World Top 500 universities, following the United States, Germany and Britain.

ARWU uses six objective indicators to rank world universities, including the number of alumni and staff winning Nobel Prizes and Fields Medals, number of highly cited researchers selected by Thomson Scientific, number of articles published in journals of Nature and Science, number of articles indexed in Science Citation Index - Expanded and Social Sciences Citation Index, and per capita performance with respect to the size of an institution.

Although the number of Chinese universities in World Top 500 University has increased, the overall academic performance of Chinese universities still lacks way behind the top level. Thanks to Chen-Ning Franklin Yang, Tsinghua University is the only Chinese university that obtained scores in Alumni indicator. None of the Chinese universities obtained any score in Award sector. In “highly cited author” sector, only Fudan University, Shanghai Jiaotong University, Chinese University of Science and Technology and Beihang University scored because they each had 1 such author.

Chinese universities’ scores are overly dependent on the number of citations and the number of publications. Looking at the number of SCI and SSCI, Tsinghua University, Fudan University, Peking University, Shanghai Jiaotong University and Zhejiang University even outperformed two World Top 10 University Princeton University and California Institute of Technology. But in *Nature* and *Science* publication indicator, Chinese universities again fell to the bottom.

US universities continue to dominate the upper echelons of world rankings, taking 17 of the top 20 spots in the Shanghai Jiao Tong ranking.

2. Beijing Puts Brakes on Railways

(SCMP, 11-08-2011)

The central government has ordered high-speed trains to run slower and suspended approval for new lines after last month's deadly crash in Wenzhou.

A State Council meeting chaired by Premier Wen Jiabao on August 10 said the speed of new high-speed trains should be reduced "appropriately" during the early phase of their operation to improve management and accumulate operational experience, Xinhua reported.

In an interview, Railways Minister Sheng Guangzu said trains designed to run at up to 350km/h would run at 300km/h; those with a top speed of 250km/h would run at 200 km/h; and those designed to run at 200km/h would run at 160km/h.

Sheng said ticket prices would fall accordingly. Railway authorities would also gradually increase the intervals between trains to reduce risks.

More trains would be arranged to ease passenger flow.

The State Council said it would suspend approvals of new high-speed-rail lines, while new safety assessments would be made of projects already approved but on which construction had not yet started.

The State Council said it would review the goals set forward in the 12th five-year plan concerning railway development and put more emphasis on safety. Sheng said the railways ministry had dispatched 180

experts, divided into 47 teams, to conduct thorough checks of all lines between July 25 and September 30.

The Ministry of Railways has already ordered China CNR Corporation to temporarily halt production of CRH380BL high-speed trains by a subsidiary, the Changchun Railway Vehicles Company, after flaws were discovered in an automated safety system.

(http://topics.scmp.com/news/china-news-watch/article/Beijing-puts-brakes-on-railways)

3. China to Cultivate 3'000 University-based High-tech Start-ups in Five Years

(Xinhua, 18-08-2011)

China will cultivate about 100,000 promising student entrepreneurs and 3,000 university-based technological start-ups over the next five years, according to a government plan.

The *Five Year Plan on the Development of University Science Park* is centered around the country's university-based science parks and drafted by the Ministry of Science and Technology and the Ministry of Education. It aims to boost students' startup businesses and employment.

A total of 150 internships will be established between 2011 and 2015 for college students to launch their own start-ups and special grants will fund them, according to the plan.

Currently, China has 86 university-based science parks, which transferred more than 4,600 technological projects into products last year, statistics show.

By 2015, the number of university-based science parks will reach 200, and they are projected to transfer about 10,000 technological projects into products within five years, the plan states.

(http://news.xinhuanet.com/english2010/china/2011-08/18/c_131058787.htm)

4. New Nuclear Plants May Get Green Light Soon

(China Daily, 12-08-2011)

China concluded a nationwide safety inspection of nuclear plants on Aug 5 in the wake of Japan's nuclear crisis, indicating that the country is advancing closer to the resumption of approvals for new nuclear plants, according to a website notice by the China Nuclear Energy Association on Thursday.

On April 15, the inspection group, which consisted of the National Nuclear Safety Administration (NNSA), the National Energy Administration and China Earthquake Administration, started a national safety check on nuclear plants that are under construction and in operation, according to the notice. The safety inspection was expected to last for six months.

China suspended approvals of new nuclear plants on March 16 following Japan's Fukushima nuclear incident caused by a devastating tsunami.

"The inspection, which was completed at least one month earlier than expected, could be an indication that China has no major safety issue in its current plants," said Xiao Xinjian, industry expert at the Energy Research Institute of the National Development and Reform Commission.

A possible concern may be over the first reactor China has ever built at the Qinshan Nuclear Power Station. It went into operation in 1991 and is scheduled to shut down in 2020, the expert said.

China is likely to issue a safety plan at the end of this month, after which, the country will resume nuclear plant approvals, Lin Chengge, former deputy director of the NNSA, told China Daily earlier. Results of the inspection will be provided to the government for a review on safety improvements, Lin said.

These results will also serve as the basis for China to adjust its nuclear development program, though experts expected no dramatic change of the plan.

The country had a total of 10.82 gigawatts (gW) of nuclear capacity at the end of last year. China is capable of adding 12 gW of nuclear capacity in the near term, experts said.

The Chinese government should aim to maintain its 2020 target of achieving 40 gW, according to Kevin Tu, a senior energy expert at the Carnegie Endowment for International Peace, a Washington-based think tank.

On Aug 7, a new unit of the Ling'ao Nuclear Power Plant at Dayawan in Shenzhen began commercial operation. Dayawan is China's largest nuclear power base.

China will not waver in its determination to develop nuclear power, Vice-Premier Zhang Dejiang said during a visit to the China Institute of Atomic Energy on April 14.

As China attaches more focus on the safety of nuclear technology, it is likely to adopt the third-generation AP 1000 technology developed by US-based Westinghouse Electric Co in its future plants.

According to Westinghouse, the first reactor vessel had arrived at the Sanmen Nuclear Power Plant in China's Zhejiang province at the end of July.

(http://www.chinadaily.com.cn/bizchina/2011-08/12/content_13098852.htm)

5. New Favors for Chinese Overseas Returnees

(Ministry of S&T, 22-08-2011)

The Chinese Ministry of Human Resources and Social Security circulated a document on *Returned Overseas Chinese Students during the 12th Five-year Plan period (2011-2015)*. It says China will see a newly added population of returned overseas Chinese students by 500,000 during the period.

The document says during the 12th Five-year Plan period, the returned overseas Chinese students who have rendered services to the country will hit the level of 300,000 person-time. In addition, 50 more industrial parks will be created at different levels for returned overseas Chinese students, making the total of such parks 200 in number. Of them, some 50 parks will be jointly created by the Ministry of Human Resources and Social Security and local governments. By then, returned overseas Chinese students' businesses stationed in the parks will reach 15,000 in number.

The document adds that China will strive to recruit the overseas Chinese students who fall under the following five categories: top talents and high caliber innovation personnel, leaders needed by major industries and key economic sectors, leaders and talented people needed by farming industry, talents urgently needed by modern service industry, and talents urgently needed by major social development sectors.

During the 12th Five-year Plan period, China will perfect the mechanism of helping returned overseas Chinese students render their services to the country and associated policies, providing improved services for them. Meanwhile, enhanced efforts will be made to attract more high-caliber overseas talents, creating more jobs for returned overseas Chinese students, and encouraging overseas Chinese to render services to the country.

(http://www.most.gov.cn/eng/newsletters/index.htm)

6. China Faces Increasing Gender Ratio

(*Xinhua*, 09-08-2011)

Census figures have shown that China's gender ratio at birth is increasing, Vice Health Minister Liu Qian said at a press conference on August 9.

China's sex ratio at birth was 118.08 males for every 100 females in 2010, 116.9 males to 100 females in 2000, 111.3 in 1990 and 108.5 in 1982, according to census data, Liu said."The gender ratio imbalance can be attributed to multiple causes, including a traditional preference for sons, the practice of arranging for sons to take care of elderly parents, illegal sex-selective abortions and other factors," Liu said.

A slew of measures have been taken to address the problem, including improving the country's social security net and harshly cracking down on sex-selective abortions, Liu said.Doctors found to be practicing non-medical-related sex determination or sex-selective abortion will be stripped of licenses, and any medical institutions found to be involved will also be given harsh punishments, said Liu.China has implemented family planning policies for about three decades that have restricted urban couples to having just one child, while ethnic minority families are permitted to have more children.

Although the country's population was controlled, illegal sex-selective abortions continued to thrive in many parts of the country until the government launched nationwide crackdowns on the industry.

The press conference was held to unveil *the Outline for the Development of Chinese Children/Women (2011-2020)*, which was issued by the government on August 8.The outline, issued every 10 years by the State Council, aims to boost children's physical and mental health and narrow the development gap between urban and rural women and children.

(http://news.xinhuanet.com/english2010/china/2011-08/09/c_131038831.htm)

7. More Funds Needed for Cancer Tests

(China Daily, 29-08-2011)

Chinese experts have urged health authorities to promote early lung cancer screening more forcefully in the country, as currently only 5 percent of sufferers are detected at an early stage.

Lung cancer, which kills more than 600,000 people on the mainland each year, is the top killer of all kinds of cancer in China. About 87 percent of Chinese patients with the disease will die within five years of being diagnosed, Zhi Xiuyi, director of the Lung Cancer Treatment Center at Capital Medical University, said during an address to the 5th China-Japan-Korea Workshop on Lung Cancer, which was held during August 27-28. "Actually, many of the deaths could be prevented or at least delayed by high-risk group early screenings, particularly by low-dose CT scans, which can detect lung cancers at their earliest stage, when more than 90 percent of patients can be cured," Zhi said. Given early lung cancers cause no evident symptoms, susceptible groups like longtime smokers aged over 45 or people who have sufferers in their families should go as a precaution for regular screenings to achieve early diagnosis and treatment, said Zhou Qinghua, who heads the Tianjin Lung Cancer Institute.

"Currently, most lung cancer patients in China are only diagnosed when they show symptoms, which is too late," he said. Also, it is far more expensive to treat late-stage patients, with the average cost on the mainland being at least 100,000 yuan ($15,000) for each patient, according to official statistics. Given the cost, the Ministry of Health initiated an early diagnosis mechanism last year by establishing trial CT screening projects in Tianjin and Xuanwei, Yunnan province. The two areas have high lung cancer rates and under the project about 4,000 people at high risk of the disease were given at least two free CT scans a year, Zhou, who heads the projects, said. A CT scan costs about 1,000 yuan ($150) so the current annual government funding of nearly 600,000 yuan ($ 90,000) cannot cover the cost, he said. Zhou urged the authorities to increase funding to cover more people at high risk.

"In that way, more patients would be detected at an early stage, which makes it easier and cheaper to treat them," he said, citing experiences in industrialized countries such as Japan and the United States. In Japan, about 25 percent of all lung cancer patients are detected at a very early stage, said Ryosuke Tsuchiya, a board member of the Japanese Foundation for Cancer Research. "Japan began giving free early lung cancer screening programs for high-risk groups in the early 1970s, and this has helped to lower the death rate and medical costs," he said.

(http://www.chinadaily.com.cn/cndy/2011-08/29/content_13206716.htm)

Events (September - October 2011)

September 2011

Multilateral Symposium on Precision Optical Equipment Technology
Date: September 1st
Place: Beijing
Contact: Academy of Opto-Electronics, CAS

China International Exhibition on financial Banking Technology, China 2011
Date: September 1st
Place: Beijing
Contact: China Financial Computerization Corporation of the People's Bank of China

The 1st China International Advanced Materials Industry Expo
Date: September 6th to 8th
Place: Harbin
Contact: Ministry of Industry and Information Technology

International Conference of Material and Manufacturing ICMM
Date: September 7th to 9th
Place: Liaoning
Contact: Liaoning University of Technology

International Conference on Nanoscience and Technology, China 2011
Date: September 7th
Place: Beijing
Contact: National Center for Nanoscience and Technology, CAS

Swissnex China lecture goes Architecture - Virtuarch
Date: September 7th
Place: Shanghai
Contact: Swissnex China

5th Art Science Society Lecture 2011
Date: September 8th
Place: Shanghai
Contact: Swissnex China

The 4th International Seminar on Global Environment Change, Urbanization and Health
Date: September 10th
Place: Beijing
Contact: Institute of Geographic Sciences and Natural Resources Research, CAS

The 17th China International Composites Industrial Technical Expo
Date: September 15th
Place: Beijing
Contact: China National Building Material Group Corporation

2011 China International Mechanical Manufacturing Technology & Equipment Exhibition
Date: September 16th
Place: Jinan
Contact: Chinese Mechanical Engineering Society

6th Asia-Pacific Chemical Reaction Engineering Symposium
Date: September 18th
Place: Beijing
Contact: Institute of Process Engineering, CAS

IHEID Graduate Institute APSIA exhibition
Date: September 20th
Place Shanghai
Contact: Swissnex China

Sino-Swiss Journée – University Fribourg & ECNU Shanghai
Date: September 22nd
Place: Shanghai
Contact: Swissnex China

2011 International Seminar on the Dark Component in the Universe
Date: September 26th
Place: Beijing
Contact: Institute of Theoretical Physics, CAS

The 6th China Annual Conference and International Exhibition on Intelligent Transport System
Date: September
Place: Beijing
Contact: Intelligent Transportation Society of China

2011 International Conference on Frontier of Nano Science and Technology ICFNST
Date: September 28th to 29th
Place: Kunming
Contact: www.icfnst.org

Sino-Swiss Design Evening
Date: September 29th
Place: Central Academy of Fine Arts
Contact: Embassy of Switzerland in China

October 2011

6th Art Science Society Lecture 2011
Date: October 1st
Place: Shanghai
Contact: Swissnex China

Beijing International Design Triennial
Date: September 28th to October 17th
Place: Beijing
Contact: Tsinghua University, School of Arts and Design

ENGINE China 2011
Date: October 8th
Place: Beijing
Contact: China International Combustion Engine Industry Association

The 4th Asia-Pacific NMR Symposium
Date: October 11th
Place: Beijing
Contact: Wuhan Institute of Physics and Mathematics, CAS

The 14th Beijing Conference and Exhibition on Instrumental Analysis
Date: October 12th
Place: Beijing
Contact: China Association for Instrumental Analysis

The International Symposium of Developmental Systems Biology on Transcriptional Regulation, CAS 2011
Date: October 12th
Place: Shanghai
Contact: Shanghai Institute for Biological Sciences, CAS

2011 Workshop on Engineering and Sociology
Date: October 13th
Place: Beijing
Contact: Graduate University of CAS

10th International Symposium on Functional Pi-Electron Systems (FPi-10)
Date: October 13th
Place: Beijing
Contact: Institute of Chemistry, CAS

Exhibition "La Suisse Plurielle"
Date: September 15th to 19th
Place: Kashgar
Contact: Embassy of Switzerland in China

6th World Congress Allelopathy
Date: October 16th
Place: Beijing
Contact: China Society of Plant Protection, CAST

The 9th International Pain Research Organization Symposium
Date: October 16th
Place: Shanghai
Contact: Shanghai Institute for Biological Sciences, CAS

2011 International Symposium on Temperature Effect
Date: October 18th
Place: Beijing
Contact: Institute of Atmospheric Physics, CAS

The 13th International Congress for Stereology
Date: October 19th
Place: Beijing
Contact: Stereo Society of China, CAST

The 12th Multinational Urban Traffic Conference and Exhibition
Date: October 19th
Place: Beijing
Contact: New Technology Development Center, CAST

The 6th International Conference on Knowledge, Information and Creative supporting System
Date: October 22nd
Place: Beijing
Contact: Academy of Mathematics and Systems Sciences, CAS

Power Transmission & Control Asia 2011
Date: October 24th
Place: Shanghai
Contact: China Hydraulics Pneumatics & Seals Association

The 7th International Conference on Semantics, Knowledge and Grid
Date: October 24th
Place: Beijing
Contact: Institute of Computing Technology, CAS

CEMAT Asia 2011
Date: October 25th
Place: Shanghai
Contact: China Logistics Alliance Network

China International Wire and Cable Industry Exhibition
Date: October 26th
Place: Shanghai
Contact: Shanghai Electric Cable Research Institute