



Science, Technology, Education and Health News from China

Number 126 –December 2014

Please note that the previous newsletters can be downloaded from the website of the Embassy of Switzerland in China: www.eda.admin.ch/beijing¹. To subscribe/unsubscribe or send us your comments, please send an email with the corresponding subject to chenchen.liu@eda.admin.ch.

Introduction

The story of the month covers Ministry of Education in China launched a series of reforms around Gaokao. In science and technology, Scientists have produced the first space-based 3D printing machine in China. An Environmental Protection Law launched by the Chinese government, which plans harsher punishment for offenders. China's first multifunctional offshore engineering ship that can operate 3,000 meters under the water was put into operation. In education, Ministry of Education allows college students to suspend their studies to start up their own businesses. More Chinese teenagers tend to study in U.S. The Ministry of Education will implement stronger scrutiny over the university system's leaders. A new MOOC entitled Design and Discovery for the online education of science instructors was launched in China.

Contents

Story of the Month	2
News.....	3
1. China produces first space-based 3D printing machine.....	3
2. China allows university students to follow Bill Gates.....	3
3. More Chinese teenagers to study in US.....	4
4. University system faces stronger oversight.....	5
5. MOOC for science instructors launched.....	6
6. New law steps up China's battle against air pollution.....	6
7. China's first 3,000-meter-deep engineering ship put into operation.....	7
(Collaborating Opportunities).....	8

Contact

Nektarios PALASKAS
Science and Technology Counsellor
Head of Science, Technology and Education Section
Embassy of Switzerland in the People's Republic of China
 Tel: +86 10 8532 8849
 Email: nektarios.palaskas@eda.admin.ch
www.eda.admin.ch/beijing

*We invite you to follow the Swiss Embassy on Weibo! <http://e.weibo.com/swissembassy>
 We also invite you to follow Swissnex on Weibo! <http://e.weibo.com/swissnexchina>*

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



Story of the Month

A New Round of Gaokao Reforms

A series of reforms are launched which aim to change China's exam-centred education system. It has sparked a discussion of fairness. People are concerned about how the National College Entrance Exam or Gaokao could reflect on fairness.

Based on the current university admission policies, the only way to enroll in a university is that applicants pass the Gaokao score required for entry. In this situation, secondary school students have to give up the opportunities to unleash their creative spirit just purely for getting a higher score on Gaokao.

In December 2014, the Ministry of Education of China decided to make a step forward. It indicated that universities should not base their judgment of applicants solely on Gaokao scores. Universities will consider applicants' comprehensive behaviors which include morality standards, physical health, art cultivation and social practices.

Furthermore, winners in math, science and sport competitions will not get extra scores from Gaokao. For the past year, some applicants could be more easily admitted to their ideal schools because they were national competitions winners.

However, this situation was accused of leading to corruption and unfairness. The only purpose for some applicants' joining competitions was to get bonus points in Gaokao. They were not really interested in the area which might suffocate their true strengths.

This reform doesn't mean that students with advantages in a particular area become useless. The Ministry of Education starts to hand this power to universities. Applicants' achievements in different competitions will not be reflected on the Gaokao score. Universities will evaluate this part during the process of internal selection.

In addition, high school students could submit reports to choose their optional courses from life sciences, chemistry, geography, history, physics and politics. Secondary schools will not just divide the courses into art and science classes. The three optional courses together with required courses (Chinese math, English) will not be scored in marks but graded in levels.

The Gaokao reform has been struggled for years. Although both experts and parents advocate to a variety of admission policies, the reform is still objected by some people who believe that the Gaokao is the fairest way in China's current society. The uneven distribution of Chinese education resources is one of the reasons for this argument. People worry that the reform will trigger the abuse of power.

As the test sites of this Gaokao reform, Shanghai and Zhejiang will start allow high school students to choose 3 selective courses from politics, history, geography, physics, chemistry and life sciences.

The reform plan in Zhejiang indicates that except Chinese and Math, the exam chance for the rest courses will increase from once to twice. Furthermore, the test results will be valid for two years.

It is different with Shanghai, where students have two chances to join the Gaokao only for English

The supporter indicates that the reform will cultivate students' comprehensive abilities and release their real advantages. The new system could transfer more talents to high-tech industries.

It is not the first time that related authorities try to change the situation of exam-entered admission policies. Some researchers believe that the reform needs to be perfected in future practices.



News

1. China produces first space-based 3D printing machine

(China Daily, 08-12-2014)

Scientists have produced a 3D printing machine, the first of its kind in China, which astronauts will be able to use while on space missions, according to the China Aerospace Science and Technology Corporation (CASTC) on December 5.

The machine is capable of printing optical lens brackets used in space borne equipment, complicated components used in nuclear power testing equipment, impellers used in aircraft research and special-shaped gears used in automobile engines, said Wang Lianfeng, a senior engineer with CASTC Shanghai's research arm.

The machine, which uses both long-wave fiber and short-wave carbon dioxide lasers, can produce items smaller than 250 millimeters.

The machine, which looks like a gray cabinet, can fashion items out of stainless steel, titanium alloy and nickel-based super alloy.

"The products made will have to be tested thoroughly, due to the strict quality requirements of aerospace products," said Wang, adding that the prospect for 3D printing is promising.

Additive manufacturing, which 3D printing is also known as, is the processes in which three-dimensional objects are made through the layering of material. It is advancing rapidly and is increasingly used for industrial purposes.

(http://usa.chinadaily.com.cn/china/2014-12/08/content_19043264.htm)

2. China allows university students to follow Bill Gates

(China.org, 12-12-2014)

While the Ministry of Education allows college students to suspend their studies to start up their own businesses, some teachers and experts suggest that schooling should be completed first.

A graduate of Nanjing Forestry University introduces herself to a recruiter at a job fair organized by the university in November 2014.

The ministry released a notice on December 10 requiring colleges and universities to set up a flexible education system allowing students to suspend studies temporarily to pursue business ideas - a measure designed to help improve employment, given the increasing difficulty college graduates have landing jobs.

Last year, 6.99 million students graduated from colleges and universities nationwide. The number increased to 7.27 million in 2014 and is expected to be 7.49 million in 2015, Beijing Times reported.

Against that backdrop, the Education Ministry asked colleges and universities to offer more preferential policies, guidance and services to students, including adding curricula, organizing venture contests and hiring successful entrepreneurs, investors and experts to act as mentors.

Zheng Dongliang, director of the Work Science Research Institute, a research branch of the Ministry of Human Resources and Social Security, said he thought the suspension of studies would provide many students with more flexibility and choices.



"It's good news for students who would like to try starting up their own business but don't want to give up their studies," Zheng said. "Students can come back to school if, unluckily, their entrepreneurial idea doesn't work out."

Shi Zugao, a senior at Zhejiang University of Technology who started his own business reselling clothes in 2011, was thrilled to hear the news.

He recalled that when his business was first started, he had to get up at 5:30 am daily to check and organize T-shirt orders, and then attend classes like other students. At night, he often stayed up until midnight to handle work related to the business.

However, Zheng, the director, said students like Shi are in the minority, and he recommended focusing on studies until graduation.

"It will be better for students to start up their businesses after graduation, as entrepreneurship requires experience, capital and many other conditions to succeed," Zheng said.

Yang Qiuping, general manager of Fudan Software Park, agreed. Yang set up an account on Sina Weibo to help students solve problems they encounter in their business startups.

"For most students, starting up a business is not what they should be doing during the college years," she said. "Studying hard and achieving an academic degree is the way out."

(http://www.china.org.cn/china/2014-12/12/content_34297579.htm)

3. More Chinese teenagers to study in US

(China.org, 19-12-2014)

Chinese teenagers studying in the United States has increased more than 60 times during the past decade, with experts believing the boom will continue into the future, a new study showed on December 15.

Nearly 27,000 Chinese students were studying at U.S. senior schools, public or private, during the school year 2012-2013, compared with 433 in the year of 2003-2004, according to a blue book published by the Social Sciences Academic Press on Thursday.

The book was compiled by the Center for China and Globalization.

China overcame South Korea in 2011 to become the largest source of overseas high school students in the United States, maintaining its position since.

The parents, holding high academic degrees, position or income, hope their children enjoy the style of education in the U.S. and better their ability in foreign languages and independent life, according to the book.

The sharp increase of students receiving education in the U.S. is expected to continue as more Chinese families gain wealth, according to the book.

Prolonged student visas and easier overseas applications are also helping more Chinese study abroad.

But experts warn that Chinese parents should not "blindly" send children overseas because teenagers may not be mature enough to live independently.

Some find it hard to finish school work or integrate into local communities, according to the book.

(http://www.china.org.cn/china/2014-12/19/content_34357372.htm)



4. University system faces stronger oversight

(China.org, 22-12-2014)

The Ministry of Education will implement stronger scrutiny over the university system's leaders and impose harsher punishments for corruption, the country's top anti-graft agency said on December 18.

The Central Commission for Discipline Inspection of the Communist Party of China published, on December 18, 18 measures developed by the Education Ministry that require ministry-affiliated institutes and colleges to strengthen supervision over key processes, including promotions, enrollment, campus construction and the allocation of research funds.

Anti-graft supervision should specifically target high-ranking officials such as college presidents, deans and admission officials, who hold absolute power in major areas related to the allocation of resources and funds as well as staff appointments, according to the measures.

The Ministry of Education also requires its affiliated departments and colleges to strictly implement the clean-governance standards for officials' office occupancy, government-car use, business trips and official receptions.

The measures state that disciplinary bodies should regularly inspect school officials' personal finances, housing conditions and gifts received, in the wake of a series of corruption scandals involving university officials.

Zhong Binglin, president of the Chinese Society of Education, applauded the supervision-strengthening measures while stressing that decentralizing administrative power within schools is crucial as well.

"The decision-making system in China's universities should be changed by a multiple-stakeholder system — something like school boards overseas — to balance the current centralization of power, along with instilling proper supervision and accountability mechanisms," Zhong said.

Most college presidents and other high-ranking officials in key departments are appointed by higher-level governments rather than being elected, giving them absolute power, which in turn has created a breeding ground for corruption.

At least five university presidents and high-ranking officials stepped down in 2013 after being investigated on corruption charges.

Cai Rongsheng, former head of admissions at Beijing's Renmin University of China, was arrested in May 2014 on charges of receiving huge bribes for selling university admission seats.

Cai was put under official investigation in November 2013 after being accused of taking over 10 million yuan (\$1.6 million) to "help" students get enrolled by the high-profile university.

Chen Yingxu, a former professor at Zhejiang University, was sentenced to 10 years in jail by the Intermediate People's Court of Hangzhou, Zhejiang province, in January for embezzling more than 9 million yuan of research funds by fabricating receipts and contracts.

In late December 2013, Chu Jian, then vice-president of Zhejiang University, was investigated for allegedly misappropriating State-owned assets.

(http://www.china.org.cn/china/2014-12/22/content_34375416.htm)



5. MOOC for science instructors launched

(Cast, 22-12-2014)

Entrusted by the China Association of Children's Science Instructors (CACSI), Science Education in China magazine and Hanbo Education and Training Center in Jiangsu province jointly produced a MOOC (Massive Online Open Course) entitled Design and Discovery for the online education of science instructors. The first part of the course was officially launched on Nov. 24, 2014 (<http://www.topu.com/live/318825>) with the support of the Department of Science Popularization of the China Association for Science and Technology (CAST).

This course is developed based on the facilitators guide of an Intel course Design and Discovery. Massive open online course (MOOC) is an online course aimed at unlimited participation and open access via the web. In addition to traditional course materials such as videos, readings, and problem sets, MOOCs provide interactive user forums that help build a community for students, professors, and teaching assistants. MOOCs are a recent development in distance education which has been increasingly popular throughout the world.

The Chinese version of Design and Discovery was initially a course for training launched by CACSI some years ago. To adapt it to the form of a MOOC, the developers of the course rewrote the content of the previous course and matched it with video as well as interactive discussions, online evaluation and materials for reference so as to provide learners with fresher and richer content. The course would let the learners to arrange their own learning schedule according to the program within the several weeks of the course and evaluate their performance of learning and join in the discussions. Such form of training has overcome the disadvantages of the traditional training program in which the number of trainees and days of training are fixed and will benefit the science instructor at lower cost.

The development and launch of the course Design and Discovery is a new attempt to digitizing the traditional form of science instructor training. CACSI will continue to explore new forms of training, including developing more MOOCs and integrating online training with offline training, so as to achieve better effect in training.

<http://english.cast.org.cn/n1181872/n1182018/n1182077/16156670.html>

6. New law steps up China's battle against air pollution

(Global Times, 23-12-2014)

Major revisions to China's air pollution control laws began on December 22 as the country plans harsher punishment for offenders and seeks to establish a monitoring and early-warning system for heavy pollution.

A draft amendment to the air pollution prevention and control law was submitted to the top legislature for a first reading at the bimonthly session of the Standing Committee of the 12th National People's Congress on December 22.

Companies found discharging air pollutants without permission or evading supervision by falsifying data will have their production limited or suspend, and are fined between no less than 100,000 yuan (\$16,340) to no more than 1 million yuan (\$163,400) by local environmental protection departments at the county level or above.

If enterprises are found violating any of the regulations and refuse to change their behavior, police can detain the persons responsible, according to the draft amendment.

The State Council's environmental protection department and meteorological agency, as well as province-level governments in air pollution control regions will establish a monitor and early-warning system for heavily polluted days.



The draft calls for heavily polluted weather be included in local governments' emergency response plan, adding that governments should create a contingency plan.

To combat pollution, enterprises should be ordered to suspend or limit production as needed, automobile use could be prohibited or limited; fireworks use forbidden, building demolition suspended and outdoor barbecues eliminated.

Artificial weather modification might be used and outdoor sports activities for kindergartens and schools could be canceled, according to the draft.

China's current air pollution prevention and control law was passed in 1987 and was revised in 2000 to better control sulfur dioxide discharge.

With the country's rapid economic development and the striking increase in the amount of automobiles, China's air pollution is currently caused by a combination of smoke from burning coal and vehicle exhaust, said Zhou Shengxian, minister of environmental protection, when explaining the draft amendment to lawmakers.

"Air pollution problems in certain regions have become prominent, which demonstrate that the existing law cannot fit in the current situation," said Zhou.

(<http://www.globaltimes.cn/content/898166.shtml>)

7. **China's first 3,000-meter-deep engineering ship put into operation**

(Xinhua, 28-12-2014)

China's first multifunctional offshore engineering ship that can operate 3,000 meters under the water was put into operation on December 26, a major progress of China to proceed into the deep-water.

The "Offshore Oil 286" ship, built with an investment of more than 1 billion yuan (163 million U.S. dollars), belongs to the Offshore Oil Engineering Co. Ltd, an affiliate of China National Offshore Oil Corporation, the country's largest offshore oil and gas producer.

The ship, 141 meters long and 29 meters wide, has a maximum loading capacity of 11,228 tons, and can accommodate to 150 crew members. It is equipped with a 400-ton crane to fulfil installing missions under the water.

The ship can undertake hoisting and pipe-laying missions and support underwater robot and diving missions. It can also carry out underwater equipment maintenance work.

The ship was built by the CSSC Huangpu Wenchong Shipbuilding Company Limited.

(http://news.xinhuanet.com/english/china/2014-12/28/c_133883683.htm)



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun Svizra

Federal Department of Foreign Affairs
Embassy of Switzerland in China
Science, Technology and Education Section



(Collaborating Opportunities)

Call for demonstrations and projects:

Swiss Week 2015

Deadline: March 1st 2015

Place: Shanghai

Contact: info@swissnexchina.org

Call for participants: APAIE 2015

Date: March 23rd – 26th 2015

Place: Beijing

Contact:

michael-simon.waser@eda.admin.ch