University Courses Online

Top Chinese universities are getting involved in a new global trend in learning By Tang Yuankai

Cai Shiyu narrowly missed a position at China's highly ranked Tsinghua University, his first choice, because his score in this June's national college entrance examination came up short by a few points. Currently enrolled in another university in Beijing, Cai was relieved to discover it is still possible for him to learn from the best professors from Tsinghua University and other world-renowned universities through "massively open online courses" (MOOCs).

"Anyone can take any course that they want as long as they have a computer and access to the Internet," Cai said. He firmly believes MOOCs, like traditional college courses, allow students to refine and master new skills and obtain knowledge that can be applied in real-world situations.

"There are no visa requirements, no tuition charges and no time constraints when taking a MOOCs course, even though the university may be in another country," said Zhang Zheng, Vice President of Microsoft Research Asia.

Different learning model

In the past decade or so, online teaching has gone through three distinct phases, namely Open Course Ware, video courses and the more recent MOOCs.

Rather than simply offering course materials such as videos and PowerPoint presentations online, MOOCs feature almost all the elements of conventional courses such as handouts, in-class questions and answers, quizzes, homework assignments and even exams. After completing a course, it is possible to be awarded a certificate—though it may not count toward course credit at an actual higher learning institution.

Now Cai is addicted to MOOCs because the courses are immersive and engaging. "Previously, video-taped courses were not so interactive and could not ensure the attentiveness of students," Cai said.

After the video clip for a course is played, it will stop and instructor's questions appear on the screen. Only after answering the questions correctly, can a student move ahead. In a course, there might be dozens of such stops. "Sometimes, the video stops once every three minutes, so it is difficult for me to divert my attention to other things even for a minute," Cai said.

Catching on

MOOCs are becoming rapidly popular all over the world in a sweeping global trend.

Coursera, a leading MOOCs platform founded by Stanford University computer science professors Andrew Ng and Daphne Koller, currently offers hundreds of courses from more than 60 internationally renowned universities. Enrollment on the site has been growing at a staggering pace. According to *The Wall Street Journal*, Coursera's accumulated enrollment had reached 2.8 million students by the end of March and the number had nearly doubled by October, reaching 5 million.

Alongside Coursera, there are two major MOOCs platforms currently offering courses online: edX and Udacity.

EdX was developed and launched by Harvard University and the Massachusetts Institute of Technology (MIT) in May 2012 and boasts 1.3 million learners to date.

Udacity, founded by Sebastian Thrun, David Stavens, and Mike Sokolsky—also professors from Stanford University—is the third largest MOOCs platform currently in operation with more than 700,000 registered learners last year. On their website they state, "By making high-quality classes affordable and accessible to students across the globe: Udacity is democratizing education."

On October 10, XuetangX, a MOOCs platform in China, began operations. It features courses from a range of leading Chinese higher learning institutions, including Tsinghua University and Peking University. In attendance at the opening ceremony was Anant Agarwal, President of edX—the learning platform upon which XuetangX is based.

In May, Tsinghua University began to offer courses on edX.org, becoming the first university on China's mainland to do so. However, XuetangX is independent from edX.org, and was built by Tsinghua University's computer science team using the open-source code repository developed, and made freely available, by edX.

The first batch of courses available on XuetangX also includes Principles of Electric Circuits, History of Chinese Architecture and three other courses offered by Tsinghua University, MIT's Circuits and Electronics and Peking University's Principles and Practices of Computer-aided Translation.

On October 17, Tsinghua University's Principles of Electric Circuits course was made available simultaneously on XuetangX and edX websites. On the same day over 10,000 students registered for the course online: 1,775 through XuetangX; and through edX, a further 8,313 students from 151

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countries and regions—including India, the United States and China.

"Every year, about 500 Tsinghua students register for Principles of Electric Circuits. The number of students that registered in one day through edX and XuetangX is equivalent to nearly 20 years at Tsinghua. MOOCs truly make the impossible possible," said Yu Yunjue, one of the course's instructors and an associate professor at Tsinghua's Department of Electrical Engineering.

"MOOCs play an important role in reallocating education resources," said Li Xiaoming, a professor at Peking University's Computer Science Department and an assistant to the university president.

Li is in charge of the university's MOOCs project. With the best educational resources in China, Peking University will be able to contribute to societal progress through MOOCs, Li said.

According to Li, Peking University offers 1,998 courses every semester. The average number of students registering for any one course is 48, but the median is 29. "An excellent teacher can only teach slightly more than 20 students," he said.

Internet technology enables a teacher to turn a conventional course into a MOOCs course with nearly no added costs to the university.

Some Chinese universities such as Shanghai Jiaotong University and Fudan University offer courses on Coursera.org.

According to an agreement signed between Coursera and the two Shanghai-based universities in July, Coursera is responsible for the training of faculties to make sure that courses offered are up to MOOCs standards. The universities can decide whether to continue or cancel a course based on feedback from students.

Koller said that Coursera's goal is to "take the best courses from the best instructors at the best universities and provide them to everyone around the world for free." She said that she expects Coursera will work with more Chinese universities in the future to deliver more courses in Chinese.

New era for education

MOOCs are not only able to expand the learning options for everyone everywhere, but also greatly impact higher education as a whole.

"MOOCs help prestigious universities expand their influence in the higher learning market," said Zhu Zhiting, Dean of the Shanghai-based East China Normal University's Distance Education College and Director of the Chinese e-Learning Technology Standardization Committee.

While top universities continue making their courses available on MOOCs platforms and students flock to courses taught by famous professors, ordinary universities and faculty members are feeling unprecedented pressure.

"MOOCs sound an alarm for university professors—you no longer have a monopoly on knowledge," Zhu said.

"Many professors are accustomed to traditional teaching methods...now it is time for them to adjust and adapt," Lu Fang, Vice President of Fudan University, commented. Lu said that in the future, students will be able to learn on the Internet, and come to classes to discuss what they have learned with teachers.

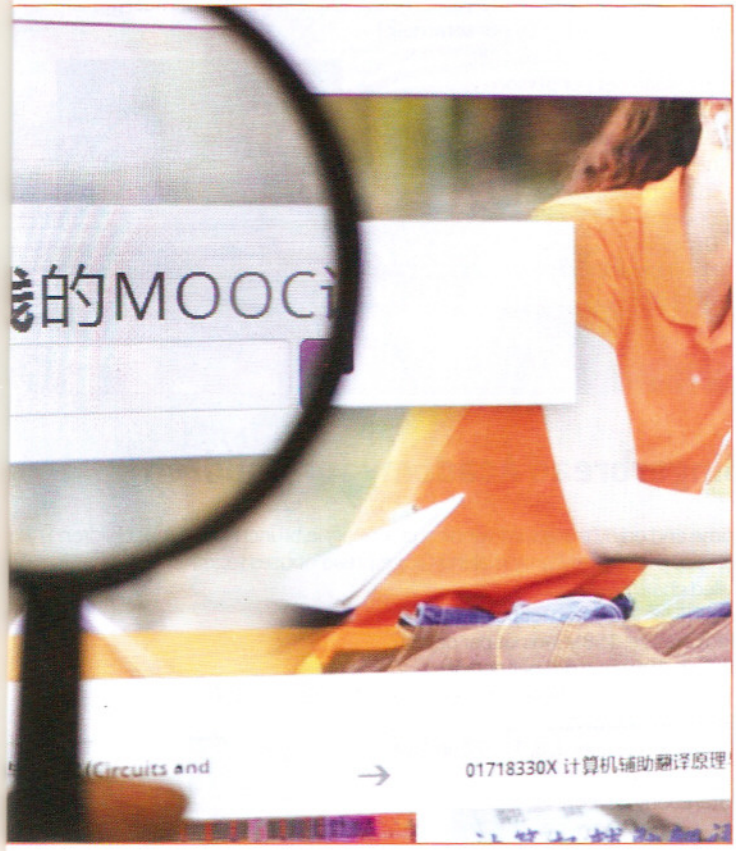
Professors from China's universities hold differing opinions on the impacts of MOOCs. Some people believe while they can dramatically lower the cost of higher education, MOOCs will force some more universities out of business. Some others argue that MOOCs will not jeopardize universities' survival as the latter have things that online teaching cannot offer, such as interpersonal exchanges, research opportunities and club activities.

In March, Zhou Qifeng, then President of Peking University, called on teachers to embrace MOOCs, saying that they not only contribute to and improve the quality of the university's teaching, research and international influence, but also determine their survival.

"Online open courses are an important development in international higher education, and will have a great impact," Zhou said.

MOOCs have prompted universities to rethink their function in society, said Li Zhimin, Director of Science and Technology Development Center in the Ministry of Education.

The basic responsibility of universities is producing and disseminating knowledge. Now that knowledge can be disseminated via the Internet, the future responsibilities of universities will be to explore, verify and test knowledge through research, Li Zhimin said. ■



MASSIVE, OPEN AND ONLINE: XuetangX, a large platform for massively open online courses in China, opens on October 10

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