

Higher Education Innovations from the Perspectives of On-Line Courses and Mobile Learnings in China

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Abstract: This study investigates the higher education innovations from the perspectives of on-line courses and mobile learnings in China. With the widespread use of technologies in higher education, the use of on-line courses and mobile technology has further accelerated the transition from a lecturer-centered teaching environment to students-centered learning environment. With the acceleration of higher education innovations in China, the on-line courses and mobile learnings will become the important trend in the next decade.

1. Introduction

An online course is a course that is focused on use of information and communications technology for learning. [1] Online courses are revolutionizing formal education, and have opened a new genre of outreach on cultural and scientific topics. These courses deliver a series of lessons to a web browser or mobile device, to be conveniently accessed anytime, anyplace. [2]

Mobile learning is "learning across multiple contexts, through social and content interactions, using personal electronic devices".[3] In recent years, the use of mobile technology has developed to a certain extent, so that they have surpassed the popularity of personal computers in modern professional and social environments. In higher education, the application of these powerful methods in teaching is not universal. Despite the digital divide, the reduced cost and increased social value associated with mobile devices means that many university students have one or more of these devices. However, it seems that these convenient and ubiquitous tools are rarely used in the learning environment, and there is little theoretical basis for learning environments to use them.

In China, the government has an ambitious "Decade of Education Informatization" (from 2010 to 2020), which aims not only to establish a nationwide digital information infrastructure and online education system, but also to reform administration and education to adapt to the digital education environment. Therefore, on-line courses and mobile learning in higher education and implications for higher education innovations are worth noticed.

2. Literature Review

In recent educational advances, few have attracted public attention than massive open online courses (MOOCs) which are defined as "university-affiliated courses for a large number of online learners with little or no cost". [4] The early prevalence of massive open online courses, and course materials were fully available online and through the providers' open enrolment policies, neither enrollment nor participants were charged.[5]

As the mobile learning, the newly mobile devices such as mobile phones, pads and notebooks are based on the lecturers/professors' education and sociology, not only to understand the way students communicate, but also to understand the "accelerating and strengthening systems-environment interactions" that extend into the university environment.[6] Parallel changes in the use of emerging technologies, reflecting this general trend, in a situation where technologies are becoming

personalized, user-centric, mobile, networked, ubiquitous and persistent. These changes have an impact on the way mobile learning can be effectively used in complex problem-solving applications that go beyond the simple transmission and communication aspects typically associated with mobile devices.[7]

3. Current development of on-line courses and mobile learning in China

3.1 Current development of on-line courses in China

Currently, according to the document “Online Education Guidance for Healthy Development” of Ministry of Education of the People’s Republic of China, By 2020, the level of infrastructure construction for online education will be greatly enhanced. Modern information technologies such as the Internet, big data, and artificial intelligence will be more widely used in education, resources and services will be more abundant, and online education models will be more perfect. By 2022, modern information technology and education will be deeply integrated, the quality of online education will continue to improve, the standards system for resources and services will be fully established, the development environment will be significantly improved, and the governance system will be more sound, networked, digital, personalized, and lifelong. Initial construction has made important progress in the construction of a learning society. Cultivate quality online education resources. Implement the “Educational Big Resource Sharing Plan”, bring together Internet teaching, scientific research, and cultural resources to expand and improve the national digital education resource public service system. Construct a number of high-quality online education courses and explore learning achievement certification and credit accumulation conversion system. Optimize the structure and make overall use of existing resources. By 2022, 3,000 national online open courses and 1000 national virtual simulation experimental teaching projects will be launched, and about 6,000 national and 10,000 provincial-level online and offline higher education courses will be built. 10,000 classroom basic education demonstration courses, 1,000 vocational education demonstration classes, and 200 continuing education demonstration classes. Online education enterprises are encouraged to set up R&D institutions and experimental centers in Vocational Colleges and universities to promote the positive interaction between scientific research and teaching. Strengthen the application of new technologies such as intelligent teaching assistant and artificial intelligence (AI) teachers in the field of education, and promote the reform of education mode. Strengthen the training of online education talents. Encourage vocational colleges and universities to combine social needs and school-running characteristics, strengthen the construction of related majors such as artificial intelligence, Internet of Things, big data, and network security, vigorously promote the reform of "Internet +" and "smart +" education and teaching, and promote cross-disciplinary integration. Cultivate all kinds of urgently needed talents in the online education industry. Encourage enterprises to establish online education innovation talent training bases and supply and demand docking platforms with vocational colleges and universities, promote the two-way flow of talents in the Internet and education industry, and train a group of high-level practitioners who can learn technology and understand education.[8]

4. Current mobile learning in China

Table 1. Total number of students enrolled in higher education in China

Year	Total	Female	Male	Percentage	
				Female	Male
2013	17916021	9129167	8786854	50.96%	49.04%
2014	21533196	11164776	10368420	51.85%	48.15%
2015	22338787	11712555	10626232	52.43%	47.57%
2016	22655613	12000325	10655288	52.97%	47.03%
2017	22863566	12177091	10686475	53.26%	46.74%

Nowadays, according to the Statistics of World Bank Database, the total number of students enrolled in public and private tertiary education institutions in programmes on the bachelors or equivalent (iscd 6) level in 2017 are 22,863,566 peoples in China. Table 1 and Figure 1 show the total number of students enrolled in higher education in China. The total numbers of higher education students are increasing yearly.

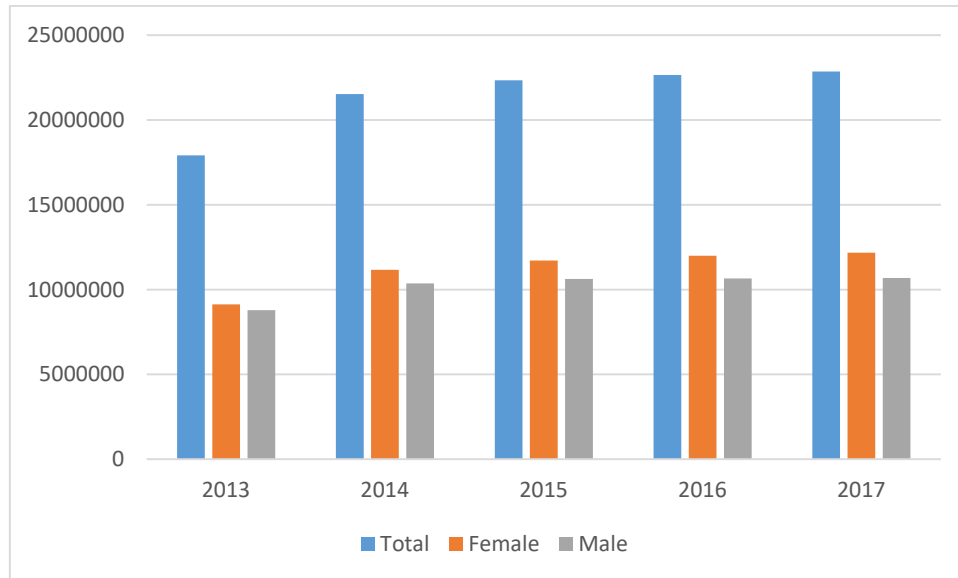


Figure 1. Total number of students enrolled in higher education in China

Figure 2 shows the mobile cellular subscriptions per 100 people from 2009 to 2018. As the shown in Figure2, the mobile cellular subscriptions per 100 people in 2018 has reached over 100 till 114.95 which indicates that each person at least has one mobile phone in hand. Under this phenomena, it is easier and more convenient for the higher education students to use their mobile phone to learn the contents. Meanwhile, according to the education policy of the Ministry of Education of the People’s Republic of China, each university shall offer a required portion of on-line and off-line courses for the students. Meanwhile, most of the teachers/ professors are willing to use the mobile phone to assist their teaching including using mobile applications to set the assessments for the students. Some professors have also recorded their courses as the open source on-line class which can help the students review what they have learned in the offline class. The students can use the mobile learning through the on-line courses to make their self-reflection,

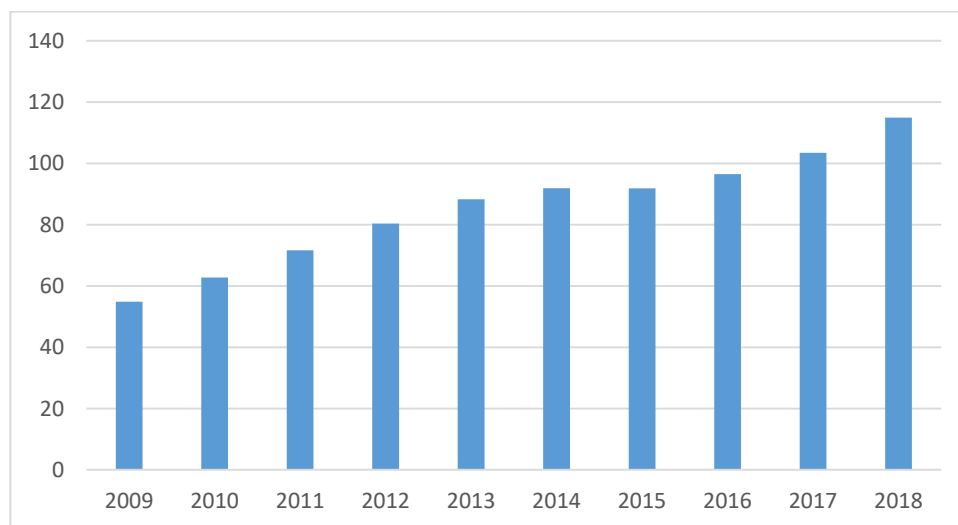


Figure 2 Mobile cellular subscriptions per 100 people in China

5. Suggestions and Conclusions

For academic online courses to work, university students have to be extremely self-motivated. The best models of online courses are coming from the realm of personal learning. The multimedia features of mobile phones, such as capturing digital pictures and videos, can be used to develop topics and issues that benefit from the use of educational media through the production of videos, documentaries, educational concept animations and newsletters. Challenging students and teachers to make field trips or network explorations will add authenticity to these tasks.

In China, the development of on-line courses and mobile learning has been supported by the related authorities. Therefore, with the financial supports and regulation encouragement from the higher education institutions, the on-line courses and mobile learning will be one of the most important education innovations.

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