

# The Influence of "MOOC" on the Cultivation of the Students in the Electrical Engineering

Quan Zhou, Chao Liu , Jianjun Xu\*

*The department of Electrical Information Engineering, Northeast Petroleum University, 163318, Daqing, Heilongjiang, China*

---

**Abstract:** MOOC-'Massive Open Online Class' is a new education form along with the deep integration of network information technology and the educational teaching .It is widely recognized and favored because it has some advantages ,such as large- scale, none spatial-temporal constraint, free open which can provide a new knowledge acquisition mode for learners. Electrical specialty is the main subject in universities of technology and its graduates are the backbone of the national power system, as well as the future builders and successors of the state. The significance of this paper is to make good use of the effective platform of MOOC to cultivate outstanding electrical students.

**Keywords:** MOOC; Electrical specialty; College student; Education.

---

## INTRODUCTION

With the rapidly development of network technology and the rise of the concept of open education resources, the open and sharing of educational resources based on the network has become the trend of the society in the future.2001 Massachusetts Institute of science and Technology MIT firstly use network video open class as a teaching forms, which marks the MOOC - (massive open online course) has emerged. MOOC produced in need of learning type group and lifelong learning. What's more, it is pursued continuously for all over the world's learners especially for young learners for its new mode of knowledge transmission of large-scale, no boundary, openness, low cost, easy access [Li,2013]. As an important engineering course in science and engineering colleges, electrical specialty should keep pace with the trend of the times, improve the teaching level and cultivate the students with high quality.

### THE DEVELOPMENT OF "MOOC"

Since 2001 Massachusetts Institute of Technology MIT takes the lead in adopting the network video open class as a teaching form of communication, the world has hundreds of universities launched its own open courses. At the same time, the open resource alliance also came into being, and formed the international open education resources alliance gradually [Wang, 2015]. MIT OCW's leading official believes that there are four elements in the school education, namely, teaching content, teacher-student communication, exams and diplomas and currently MOOC is also being forward to these four aspects.

In November 2011, Peking University, Tsinghua University and other 18 domestic famous universities combined to create the first 20 Chinese University video open classes, and they are open to the public free of charge through cooperation sites such as the love network curriculum and network television in China, NTES, etc. This marks that the Chinese video open class construction has been paid attention unprecedentedly and its production scale and level is also approaching international standards gradually. Until July 2013, the total number of Chinese university video open classes which were built or in construction has been 469, covering many novel, profound and meaningful courses, which provide opportunities for Chinese, especially college students to understand domestic premium education

### THE DEFICIENCY OF TRADITIONAL ELECTRICAL EDUCATION TEACHING MODE

Undergraduate education emphasizes to cultivate all-round development of college students but also pays attention to cultivating students' ability of problem analysis and solving[Zhang,2014]. Electrical specialty is a hot major in majors of science, which not only requires electrical students master the basic knowledge, but also needs combination of theory and practice as well as active participation in scientific research. The main problems of the traditional education teaching mode are as follows.

#### Put emphasis on professional knowledge and focus less on the scientific and humanistic spirit

An excellent electrical specialty student should master the professional knowledge, but also foster and scientific spirit. Scientific spirit can enable students to maintain a cautious attitude and a sense of

innovation, meanwhile humanistic spirit helps to cultivate students' ability of thinking. Considering problems through humanistic spirit can help to form good ideological and moral quality culture. As we all know, traditional pattern of education pays attention to professional knowledge, but the education of scientific and humanistic spirit is lacking.

**The traditional teaching mode is single and the mode is not personalized.**

The traditional mode of education is that dozens or even hundreds of students are in the same class. The teachers are dominant, who teach knowledge as much as possible in the limited time and the contents and problems of the answers take the teacher as the standard. This mode lacks of interaction between students and teachers, in some cases, teachers can not take care of all the students in order to guarantee for the vast large numbers of students to understand, in addition, the communication between teachers and students is less after class. As a result, teaching effect is different from person to person and the mode is not personalized.

**The traditional teaching ideas and means are backward and can not meet social needs.**

The traditional teaching ideas and teaching materials have some constant knowledge and theory, which can not adapt to the rapid development of information society. What's more, the updating speed is often unable to meet social needs, and the traditional education often lacks the practice link, which makes students can not put what they have learned into society and have to be trained again after employing. Also the teaching means is relatively backward, which lacks the opportunities for the combination of theory and practice. These are not conducive to cultivate excellent electrical engineering students.

**THE OPPORTUNITIES AND CHALLENGES THAT THE MOOC BRINGS TO THE ELECTRICAL PROFESSIONAL STUDENTS**

The MOOC teaches classes on the network and has a lot of advantages, specially speaking: Firstly, the MOOC is large in scale and the registration number is large. A good class can attract more than ten million students to listen; Students can study at any time in the open environment of online without the limits of fixed time and place; Also it can provide a variety of interaction, such as online testing, online video and online tutoring etc.

Moreover, the MOOC resource is diversified, the same course may be provided by many universities and each has its own features and advantages, which breaks the boundaries of the universities. Again, the role of teachers and teaching methods are also very different from the traditional ones. Teachers make the MOOC and provide knowledge; in addition they also become knowledge guides, sometimes the organizer

of the discussion, or learners. Finally the MOOC makes the learners' learning style changed and learners become the center of the learning process, where students can arrange for their own learning time, learning progress, places of learning, learning content, knowledge depth and the number. The influence that the MOOC brings to the electrical students is as following.

**The MOOC is conducive to improve the professional quality of teachers**

The MOOC teachers should have a very high professional quality and develop a habit of continuous learning and improving, because the MOOC needs excellent teachers to give a lecture; When students find similar content and higher level courses, teachers may faced the danger of being abandoned by the students, which forces the speaker teachers to improve their professional qualities and keep fusing the latest knowledge into teaching; At the same time, other young teachers can improve their level through learning from speaker teachers on the MOOC.

**The MOOC is conducive to change the teaching mode**

The traditional teaching mode is that the teachers are as the center of the relationship between teachers and students. The learning content and question answers are determined by teachers, students only need to follow the rhythm of the teacher to complete the task of teaching. However, the MOOC tries to construct an equal and harmonious relationship between students and teachers, and we can discuss with professors and group learners at any time. When the number of the MOOC students is large, communication between students tends to be the main way. At the same time, speaker teachers can find their own deficiency through interaction with the students, which is beneficial to the teachers' self-improvement.

**The MOOC is conducive to improving their students' cultural knowledge.**

The MOOC can let students choose the knowledge they are interested in fully and it can provide students with a lot of courses which are of the same topics, but from different colleges and universities to meet the different needs of audiences. Every student can learn according to their own pace, namely, students who learn fast can master more difficult content and the slow ones can repeat learning. The MOOC adopts 10 minutes of videos and fragments, which is conducive to the students for digestion and absorption. What's more, online real-time interaction can make the students learn from teachers or other students. Learning content can be accessed by mobile phone and using mobile phone as the main way of learning not only can expand the way of accessing to knowledge, but also enhance learning flexibility. The MOOC can also provide certification of the course

through the objective, automated online rating system.

### **CONCLUSION**

The arrival of the era of the MOOC shocks the traditional education mode continuously. On one hand, it will affect teaching strategies and teaching methods and promote the reform of university education, on the other hand, it changes the passive learning into the active learning. Universities should actively face the opportunities and challenges the MOOC brings and launch their own characteristics class as soon as possible. The universities should improve the teaching quality and change the education mode of electrical engineering students by utilization of the MOOC resources to introduce more

“humanity” and “recognition” classes into the education of electrical engineering students to improve the students' ideological and moral quality and helps to cultivate all-round excellent electrical students.

### **REFERENCES**

- Li Zhimin, 2013, “MOOCs challenge and the future of the university.” *The Chinese Journal of ICT in Education*
- Wang Qi, 2015, “MOOC in science and engineering graduate student education thinking”, *Course Education Research*.
- Zhang Min, 2014, “The changes and challenges of higher education in MOOC area”, *China Electric Power Education*.