

# Research on Blending Teaching and Learning Model of Applied Undergraduate under MOOC Horizon

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**Abstract**—With the application of internet plus in college teaching, MOOC teaching mode has profound effect on college teaching. In college teaching, blending teaching and learning model based on MOOC receives more and more attention, combine MOOC teaching model and traditional teaching model, realize online and offline, curricular and extra-curricular organic integration, construct curriculum structural system that conforms to web-based learning, set up perfect teaching resources system and establish the principal status of students, fully arouse students' enthusiasm and initiative as well as improve the efficiency of classroom teaching.

**Keywords**—MOOC; applied undergraduate; blending teaching and learning model

## I. INTRODUCTION

With extensive application of internet plus in education, the concepts of open education and lifelong learning are generally recognized by society. Social learning has become the main form of learning. With the appearance of Massive Open Online Courses (Atasave Open Online Courses, MOOC, translated into Muke in Chinese), it brings about digital changes in the field of distance education, which produces an enormous impact on traditional higher education. Different from traditional teaching that centers on teaching, MOOC has characteristics such as open and high-quality resource, easy-to-use platform design, interaction between teachers and students and mutual evaluation between students, provides powerful support for blended learning and new ideas and methods for teaching reform in colleges. This article tries to combine MOOC and blending teaching and learning and discusses new model of task teaching in colleges in the era of internet plus.

## II. CONNOTATION OF MOOC AND BLENDED TEACHING

### A. Research and Practice on MOOC at Home and Abroad

Since the noun of MOOC was put forward by Canadian scholar Dave Cormier and Professor Bryan Alexander in 2008, foreign scholars have researched and had fruitful tries on MOOC. The course of Connectivism and Connective Knowledge opened by Canadian scholars George Siemens and Stephen Downes in 2008 is regarded as the first MOOC. Afterwards, many scholars participate in the development and research on MOOC. In October 2011, Andrew Ng, professor of computer in Stanford University, provided free

programming online course. In November 2011, Daphne Koller and Andrew Ng jointly established for-profit Coursera. This platform cooperates with the world's top universities and freely provides high-quality online open courses. In 2011, Sebastian Thrun, lifetime professor of Stanford University, freely shared artificial intelligence course on the Internet. In January 2012, Sebastian Thrun established the for-profit Udacity Company. In May 2012, Massachusetts Institute of Technology and Harvard University jointly established the third platform EDX through capital injection. Different from the above platforms, EDX is nonprofit. Meanwhile, relevant scholars do research on teaching model and learning methods based on MOOC. Through analysis on concept of MOOC, Siemens and Cormier think: the cores of MOOC are knowledge construction, cooperation between teachers and students, distributed multi-space interaction, and focus on innovation, synchronization and resonance and self-regulation of learners. It connects instructors with learners through a common topic or subject, makes learners build learning network and construct knowledge through communication and collaboration. Fred G. Martin, professor in Stanford University, thinks: MOOC helps him to save a lot of time for explaining materials and tasks when he teaches students every week and makes more time for him to discuss with students about questions raised by students or discuss different opinions. MOOC makes the place for learning change from school to home. At the same time, it is a kind of learning style and makes all relevant learners can unite and cooperate mutually, and then share knowledge, expand the depth and breadth of knowledge.

Domestic researches on MOOC have made great achievements. In 2013, Peking University and Tsinghua University joined in Edx online education platform. After two months, Fudan University and Shanghai Jiaotong University joined in Coursera platform. Therefore, the year of 2013 is praised as the first year of localization of MOOC. Afterwards, MOOC becomes the hot topic in the field of education. The researches and practice on MOOC increase persistently. From 2012, domestic scholars research MOOC from the perspective of teaching and learning. Fan Wenqiang (Beihang University) researches MOOC on the basis of connectivism learning theory and thinks MOOC has characteristics and structures different from traditional teaching, analyzes relationships between self-organization of learners and other-organization of curriculum designers from the perspective of learning support,

and puts forward the learning support of other-organization shall follow the law of self-organization learning and what's more, it should keep dynamic balance between self-organization and other-organization of learning. Wang Ping (Shanghai University) (2013) compares two kinds of different teaching models on the basis of connectivism (cMOOC) and behaviorism (xMOOC) and points out cMOOC curriculum model puts particular emphasis on construction and creation of knowledge, while xMOOC curriculum model gets closer to traditional teaching process and concept, emphatically analyzes two kinds of main application modes based on xMOOC: flipped classroom pattern and autonomous learning mode, and finally pays attention to the learning in MOOC from perspectives of learning support and analysis and learning ecology. Li Haifeng (2014) compares and analyzes six aspects in online open courses in China and America such as interaction between teachers and students, teachers' questioning, teaching style, educational technology, teaching model and teaching process from the perspectives of teaching and learning, points out the differences between them and puts forward the methods for integration of open courses in China and America according to these differences. Wu Lizhi (South China Normal University) and other people (2013) research construction approaches of mutual election of courses and mutual recognition of credit in Guangzhou Higher Education Mega Center from the perspective of MOOC localization practice and sort out relevant problems such as concept, platform, curriculum, teachers and students in the process of practice. For researches on the basis of MOOC web-based teaching platform, Yang Jiumin (Central China Normal University) and other people (2013) analyze the current situation of fine course construction in China, sort out the experience of three foreign representative platforms, Udacity, Coursera and Edx, in aspects such as course construction mode, learning resources design, interaction of learning as well as management mode, and put forward MOOC in China shall also establish unified and open course platform, promote the fair and open higher education and realize the promotion of higher education quality.

#### *B. Researches and Practice on Blended Teaching at Home and Abroad*

The basis of blended teaching is blended learning. The blended learning (B-Learning) has passed the periods of proposing, research and popularization and application in foreign countries since the turn of the century. Blended learning (B-Learning) develops on the basis of analyzing E-Learning. The origin of E-Learning is not from researches on education and teaching in schools, and most of them are from enterprises, because enterprise training is different from traditional school education. The main purpose for enterprise training is to use less investment to acquire greater business benefits. They pay more attention to solution, model, guidance method and policy of blended learning, which are mainly applied to enterprises and adult education. In our country, the concept of blended learning was put forward by professor He Kekang on the 7th Global Chinese Computer Education Application Assembly in December 2003. Professor He thinks, "The so-called Blended Learning is to integrate advantages of traditional learning patterns with advantages of E-Learning.

That is to say, it is necessary to give play to teachers' leading role in guiding, enlightening and monitoring teaching process and fully embodying the initiative, enthusiasm and creativity of students as main part of learning process. The best learning effect can be achieved through combination of the two and making them complement each other's advantages. Ma Guogang and other people think: the blending teaching and learning model is a kind of diversified teaching model that combines advantages of traditional learning patterns and advantages of digital or E-Learning. It emphasizes centering on learners and constructing teaching models from different dimensions such as teaching methods, learning methods, practice teaching organization, evaluation and assessment of learning.

### III. PATH OF BLENDING TEACHING AND LEARNING MODEL OF APPLIED UNDERGRADUATE UNDER MOOC HORIZON

#### *A. Make Frontal Analysis and Confirm Teaching Objectives*

In order to ensure the blended teaching can go smoothly, teachers shall firstly make frontal analysis, including analysis on learners and learning contents. Learners are the main part of teaching activities, which are carried out around learners. To achieve teaching design, it is necessary to analyze learners. Teachers can analyze students' learning needs, cognition degree, learning interest, learning motivation and learning expectation through questionnaire and interview, fully understand the situation of students before blended teaching, make targeted teaching design, effectively use students' zone of proximal development to finish various teaching activities and have a definite object in view. Analysis of the students is the starting point of blended teaching. Learning contents are the basis to confirm teaching objectives. According to characteristics of MOOC teaching, course objectives and learning characteristics of learners, divide teaching contents into teaching units that connect each other according to knowledge points and confirm unit teaching objectives and finally confirm teaching objectives on this basis.

#### *B. Produce Teaching Resources and Perfect Teaching Materials*

Teaching resources include video resources, interactive training and test system.

1) *Video resources producing*: Divide knowledge point, take knowledge point as the unit, and divide teaching contents of units according to practical situation of learners and teaching objectives, make knowledge of units become "fragmented". According to the "fragmented" teaching units, teaching strategies, design videos through thoughts such as case importing, problem analysis, discussion and application, record videos through means of screen recording, handwriting and animation to make the video into 10 to 15 minutes of micro class.

2) *Interactive training*: Produce interactive exercises according to knowledge point and ability point. The question types include: gap filling, judgment and choice question. The quantity of exercises should be proper and targeted and embody the requirements of knowledge in units. Relevant

exercises should be attached to each video for learners to understand knowledge of units. Comprehensive test related to teaching contents of this week should be carried out to test the situation that students grasp the knowledge.

3) *Test system*: Check the periodical learning situation of learners, establish test system, implement periodical test for learners in the form of online test. It should take the complete unit as the unit and carry out periodical assessment according to requirements of knowledge point and ability point. The question bank includes a number of topics that cover all the knowledge point and ability point. The question types include: gap filling, choice question, and judgment, case analysis. Upload them to network test platform for self-testing of learners.

#### *C. Form Learning Community and Construct System of Learning Subject*

MOOC learning community refers to online learning organizations or learning teams and learners formed by teachers and learners who help and influence each other, exchange experience, share resources and feelings and experiences, experience the success and progress brought by learning and jointly finish learning tasks in the process of course learning under the objective of organic combination of online learning course and classroom teaching. The learning community often consists of about 20 people. There are five to six people in each learning group. This research takes MOOC learning community of this scale as research object to discuss the path research of learning community construction under MOOC background from aspects such as shared vision, learning style and assurance condition of learning community.

#### *D. Establish Blending Teaching and Learning Model and Build Online and Offline Teaching System*

The “blending teaching and learning model” is the organic integration of online “MOOC” and offline “flipped classroom”. Teachers produce learning resources such as video resources, teaching design, important and difficult points, knowledge point, ability point and PPT on online teaching platform. Learners study online independently after class and complete learning tasks of relevant resources. In class (offline), fully give play to students’ principal role, encourage learners to put forward questions and discuss relevant problems. Teachers disabuse students’ confusion to enlighten their thinking, encourage students to better master the knowledge, cultivate students’ innovation ability and creativity and realize online and offline, curricular and extra-curricular organic combination. Blending teaching and learning model puts the learning of teaching contents outside class (online). Students learn relevant knowledge through online videos and mentally analyze knowledge and complete the digestion and absorption of knowledge in class (offline). This kind of teaching model changes the arrangement of classroom contents and time allocation as well as roles of teachers and students and defines the principal status of students in learning activities. The online and offline blending model can promote students’ autonomous learning ability very well, collaborative communication ability and innovation ability and greatly improve the teaching effects. Therefore, the combination of

online and offline blending teaching and learning model combines complementary advantages of traditional classroom teaching model and “MOOC” model very well and will promote the development of teaching reform in colleges of our country.

#### IV. CONCLUSION

The blending teaching and learning model in colleges under MOOC horizon relocates the roles of teachers and students in teaching. On one hand, it strengthens the principal status of students, changes passive learning into active learning, fully arouses students’ enthusiasm and initiative for learning; on the other hand, it highlights the guiding role of teachers in the whole teaching process. Teachers pay more attention to supervision of teaching process and feedback of students’ learning effects. With the help of advanced web-based teaching platform and through interaction between teachers and students as well as between students, it solves problems in traditional teaching such as the number of students is excessive; the teaching hours are inadequate; students lack initiative for learning; communication and interaction lack between teachers and students; the practical link is weak, and optimizes the whole classroom teaching process and effectively improves the efficiency of classroom teaching.

#### REFERENCES

- [1] Mou Zhansheng, Dong Bojie. Research on Blending Teaching and Learning Model Based on MOOC, Vocational and Technical Education, 2014(5).
- [2] Sun Yusheng, Cheng Yanan, Zhu Lijun. Research on Construction of Teaching Patterns in Colleges Based on MOOC, Distance Education Journal, 2015 (5).
- [3] Jin Guichao. Research on Blending Teaching and Learning Model Supported by MOOC, China Educational Technique and Equipment, 2015 (2).
- [4] Li Hongmei, Lu Guodong, Zhang Jianping. Exploration on New Model on Teaching in Institution of Higher Learning in Post MOOC Period, Higher Engineering Education, 2014 (6).
- [5] Yuan Songhe, Liu Xuan. Current Situation of Practice and Common Problems of MOOC in Chinese University –MOOC Practice Report from Chinese University, Modern Distance Education Research, 2014 (4).