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## Research on design of modern education technology course based on moodle platform

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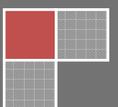
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### ABSTRACT

With the ongoing development of the Internet technology, the information technology and the contemporary educational technology, education has been witnessing the transition from on-site classes to digital online classes. Contemporary distance education has been one of the essential tools for providing a platform for lifelong learning; also, it offers various learning resources for learners as well as a great monitoring platform for the teachers. Moodle, integrating the advanced technology of contemporary education, comes into being under the great needs for digitalized education; it reflect the ideal and belief of contemporary education and can help to support various ways of teaching, promote design of classroom activities, as well as improve teaching efficiency and evaluation, so, it contributes to the change of ideal and belief of contemporary education. As a general course open to all students in normal universities, Modern Education Technology is of pivotal importance to help students pick up educational ideals and concepts as well as educational modes. Based on the present situation in the course Modern Education Technology, this paper analyzes the researches of Moodle-based course design by latest specialists and scholars and builds up a design model for Moodle-based course Modern Education Technology; the author specially design the learning environment and teaching resources for students so as to improve the teaching efficiency of course Modern Education Technology with Moodle.

### KEYWORDS

Distance education; Moodle platform; Modern education technology; Learning environment; Teaching resources.



## INTRODUCTION

Designed by an Australian teacher named Martin Dougiamas, Moodle is a CMS (Curriculum Management System) for helping teachers to manage their teaching process. Moodle enjoys an advantage over the other online learning systems for Moodle, designed on the constructivist theory, consists of cooperation, group activities, group discussion and evaluation, which can be a great supplement for the traditional on-site class, and for Moodle makes it possible for the courses' completion all online. Moodle helps bridge the teacher and the students with question areas, which reflects the educational philosophy of social constructivist theory. With the development of the Internet technology, the campus network has become part of the school, which makes it possible for the teachers and students to accept new learning model or teaching model. Therefore, it's of importance for a school to select a suitable online course platform. Modern Education Technology is a general course open to all students in normal universities to enhance learners teaching ability; however, the simple traditional teaching method, the shabby teaching equipment and the imperfect evaluation mechanism<sup>[1]</sup> exert bad influences on teaching efficiency and quality. In this sense, there is an urgent need to change Modern Education Technology with information technology and modern method, and only in this way can the teaching quality and efficiency be improved. This paper focuses on the Moodle-based Course Design of Modern Education Technology and is to provide valuable experiences for the universities about how to change from the traditional way of teaching to the digitalized way.

### Present Situation of Modern Education Technology

With the development of digitalized education, teachers are required to have certain grasp of education technology and employ the education technology and philosophy in their teaching practice. To some extent, the master of education technology of students in normal universities, mostly learnt from Modern Education Technology, can be the embodiment of a country's elementary education quality. Therefore, the old-fashioned and single teaching model as well as the single evaluation mechanism in Modern Education Technology influences the teaching efficiency and quality negatively.

(1) Old-fashioned and Single Teaching Model: Modern Education Technology is a stock general course and the top quality class in normal universities. Now that normal universities are responsible for cultivating quality teachers, the teaching methods and teaching modes students learnt in these universities would greatly affect their education ideals and beliefs as well as their future teaching career. In these years, universities enroll increasing numbers of students, which leads to an embarrassing situation that the traditional teaching method can not cater every student's needs and that the teaching efficiency is not satisfied. So there is no escaping that normal universities have to make innovations on teaching model to a digitalized one. Nowadays, the major method employed in Modern Education Technology is lecturing—teachers teaching with their teaching notes. This kind of teaching method does not have a common model and teachers mainly focuses on the theories of modern education while their teaching methods, still traditional ones, do not change at all. This directly affects students' thinking mode and teaching philosophy. In addition, although teachers in some universities have employed projector and multimedia in their classrooms, these teachers' teaching philosophy remains their old ones.

(2) Single Evaluation Mechanism: Education mechanism, directly reflecting the teaching and learning efficiency, is to judge the process and result of teaching and learning. It is the value orientation of Modern Education Technology. At present, the major evaluation methods in Modern Education Technology are to combine the everyday performances with written examination in final. Due to the fact that there are so many students taking the course, teachers usually regard students' everyday performance as their attendance and ignore the part of checking their learning efficiency and process; also, the final score accounts for the most of a students' total score, students tend to overlook the learning process but concentrate on the final written examination: this kind of evaluation mechanism can not do good to students' master of basic knowledge and the improvement of their teaching ability. What's more, in Modern Education Technology, because of the fact—that there are few teachers but many students, that there are limited teaching hours and quite a large range of teaching contents, and that there is seldom communication between students and teachers, students can hardly grasp all the contents in the course with limited number of teachers and teaching hours. Last but not the least, the single teaching model in universities is more designed for finishing teaching task than to enhance students' learning efficiency and innovative competency.

## ANALYSIS OF MOODLE

### Current application of online education

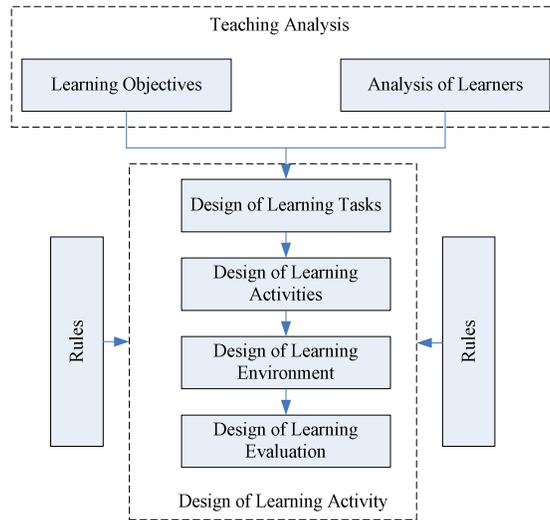
With the development of the Internet technology, online teaching has been widely accepted in schools of higher education. In 1998, the Ministry of Education of the People's Republic of China issued that a pilot experiment of distance education are to be carried out in Tsinghua University, Zhejiang University, Hunan University and Beijing University of Posts and Telecommunications; more and more scholars are doing research on distance education platform; later, the number of universities carry out pilot experiments increase from 4 to 68; 2,000 online learning centers are built; all the universities started to teach and design courses by combining various online teaching platforms with their own needs for the platforms; so far, online teaching has covered courses including engineering, natural science, management, law, economics, philosophy, farming and medicine. The pilot experiments in universities greatly help the development of distance education theory and practice in China and have drawn attention from all walks of life. Some universities just carry out independent researches on online teaching platform; for example, the Beijing Normal University online course platform and the Peking University online course platform which has set up 31 schools and 537 courses with 295 registered teachers and 24,621 registered students. Until now, there have been 5 million person-times visiting the platform in Peking University. There are some schools that employ the platforms developed by companies including the High School Affiliated to the Beijing Normal University, Shanghai Middle School, elementary and secondary schools in Taiwan, Anshan NO. 1 Middle School, Shanghai

Normal University, and Beijing Institute of Technology. The latter three school choose Moodle as their online teaching platform.

**Researches on moodle in China**

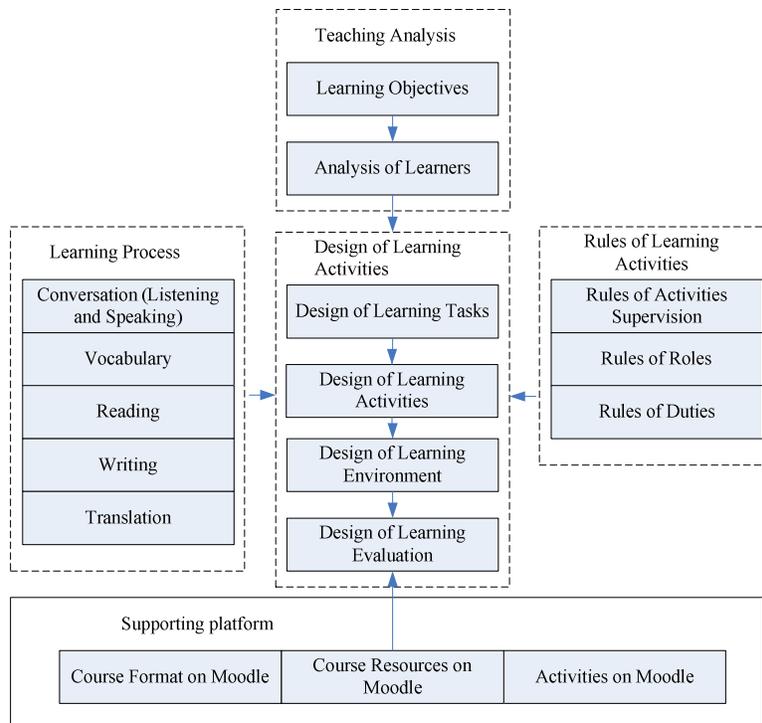
In latest years, more and more scholars and academics started their researches on Moodle. There are over 2,500 papers posted in the CNKI from 2003 to the first half of the year of 2014. By analyzing these papers, the author finds that the previous researches are mainly talking about the curriculum integration and course design; the detail literature review are as follows.

Yingqi Yan (2008) analyzes theory of activity for learning, talks about the learning activity design based on Moodle and put forward the principles and methods of Moodle-based learning activity design, thus to provide some knowledge for the future study. Figure 1 shows Yan’s model of Moodle-based learning activity design by analyzing the learning theory<sup>[2]</sup>.



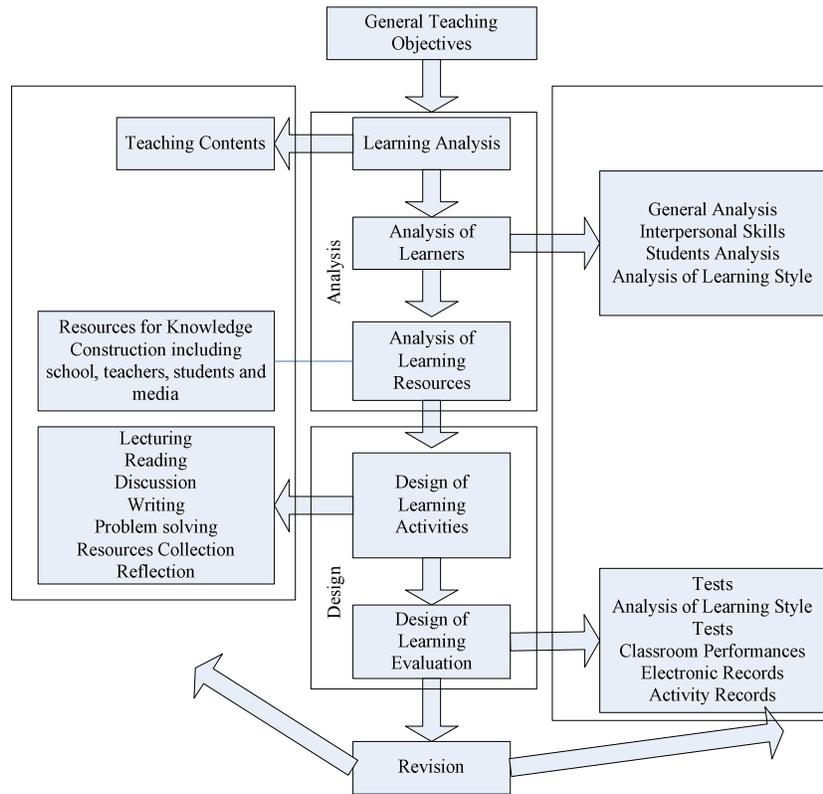
**Figure 1 : Moodle-based learning activity design model**

Jianping Ouyang (2009) points out that online teaching is the future of college English teaching, designs a Moodle-based model for autonomous English learning and makes clear the advantages of Moodle-based autonomous English learning. Figure 2 demonstrates how the model works and the five major modules in the model including learning analysis, learning process, design of learning activities, rules of learning activities, and supporting platform<sup>[3]</sup>.



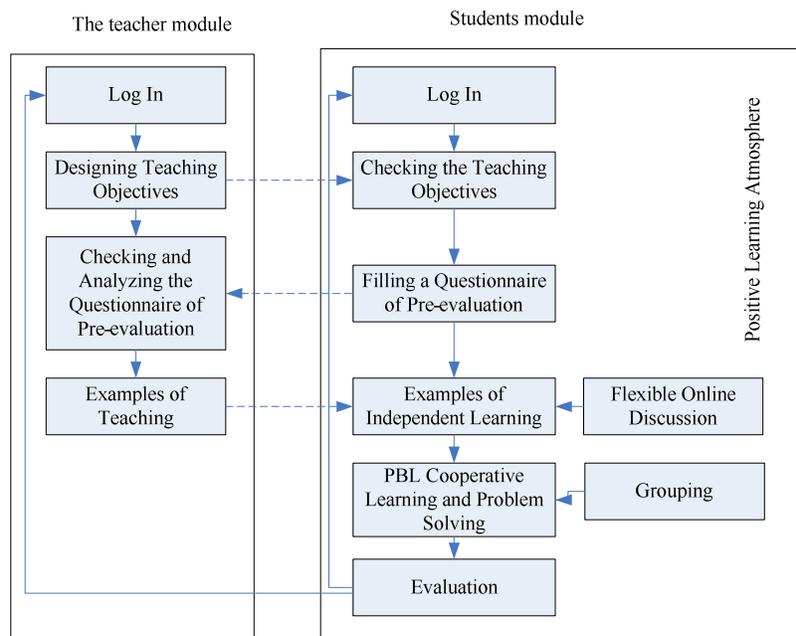
**Figure 2 : Design model of moodle-based autonomous english learning in college**

Li Yang (2010) discusses about the blended learning model and further analyzes Moodle-based blended learning model. Figure 3 demonstrates Yang’s Moodle-based blended learning model. According to Yang, Moodle-based course design is continuously making progress and the Moodle-based blended learning model will be employed by schools of higher educations<sup>[4]</sup>.



**Figure 3 : Design model of moodle-based blended learning**

Hongna Jing (2011) studies the Moodle-based deep leaning model and designs a structural chart of deep leaning model. Figure 4 shows how the current Moodle-based teaching model fails to satisfy the teaching needs and how the deep leaning model can make most use of Moodle<sup>[5]</sup>.



**Figure 4 : Moodle-based deep leaning model**

Chunhong Wang (2012), based on the problems of Moodle-based teaching in the design of learning environment and activities, design a teacher-students interactive learning field. Figure 5 demonstrates the structure of the interactive learning field<sup>[6]</sup>.

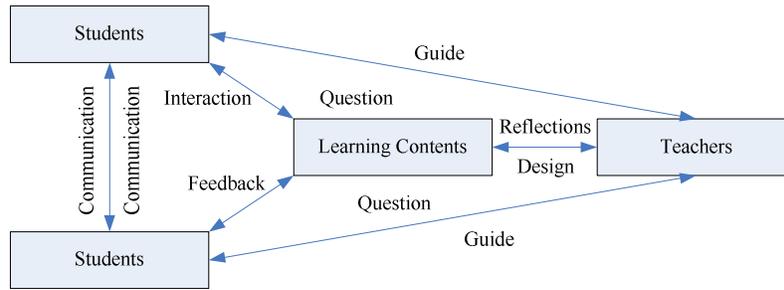


Figure 5 : Teacher-students interactive learning field

Huiling Hou (2013) points out that Moodle-based online cooperative course can help improve learning efficiency and that special attention should be paid on the design of each subordinate resource module and cooperative learning module and the combination of the two modules. Only in this way can a perfect online cooperative platform be constructed<sup>[7]</sup>.

Xiaomei Xiong (2014) analyzes the importance of Moodle-based online teaching and demonstrates the design process of Moodle-based online courses, which are helpful for the promotion of online in real life<sup>[8]</sup>.

### MOODLE-BASED COURSE DESIGN OF MODERN EDUCATION TECHNOLOGY

#### Moodle-based course design model of modern education technology

A great online course can ensure the teaching quality and efficiency. The Moodle-based online courses should be a student-centered, teacher-guided systematic one; these courses, based on systematic ideas and methods, should employ advanced information technology and efficient teaching strategies to provide students with a convenient, effective, all-around and authentic learning environment. This paper puts forward a Moodle-based model for Modern Education Technology (See in Figure 6). This model is of advantage over the other similar models for, in Modern Education Technology, teachers are able to reflect and evaluate teaching and learning efficiency after each section of the course and make adjustments pointedly with the problems get from the reflection and evaluation, thus continuously making improvements in Modern Education Technology.

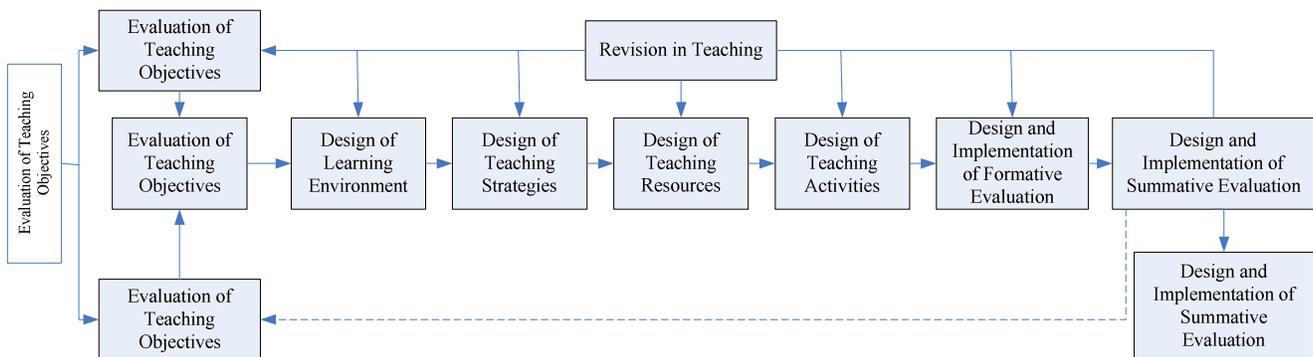
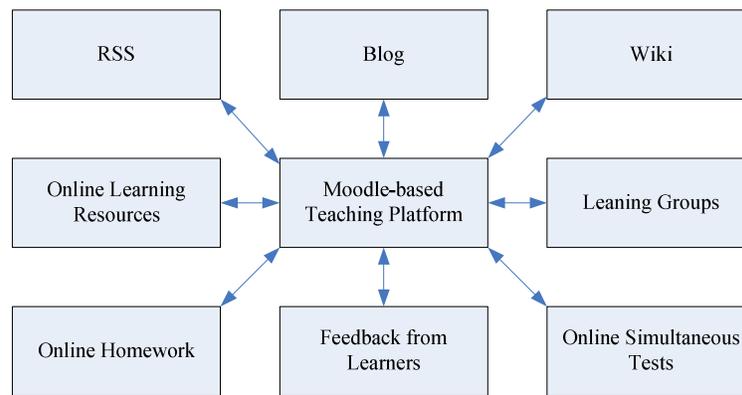


Figure 6 : Moodle-based model for modern education technology

#### Design of the learning environment of moodle

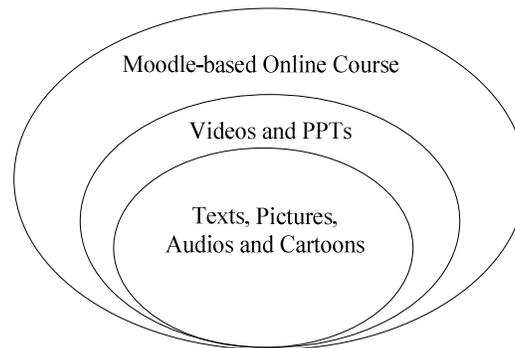
The learning environment of an online course should be human-oriented. Therefore, in the design of the course, learners' needs and the society's requirement for learners should be the priority. Feelings and emotions are the grounds of course design which reflects affective and cognitive education and avoids overlooking the students, the center, and the teachers, the guide. In addition, the design should take every learner's characteristics including their knowledge of history and culture and their levels, under consideration so as to design a individualized and tailored environment which can stimulate students' interest, encourage students to devote more to learning and make them passionate about learning. What's more, the tailored design can provide students opportunities to design their own way of learning, choose their role according to their preferences. Last but not the least, the design should take learners comprehensive quality into consideration for, in Modern Education Technology, students not only need professional knowledge and skills but also need the ability to put theory into practice. According to what have been talked about above, an individualized Moodle-based learning model was designed (See Figure 7).



**Figure7 : Design of the learning environment of moodle**

### Design of the teaching resources of moodle

Teaching resources in the Moodle-based course Modern Education Technology include six kinds: texts, pictures, audios, cartoons, videos and PPTs, whose hierarchical relationship is demonstrated in Figure 8. According to Figure 8, texts, pictures, audios and cartoons are the basic things on the Internet and make the videos and PPTs, which make the Moodle-based online course.



**Figure 8 : Hierarchical relationship among online course and teaching resources**

## CONCLUSION

With the development of information technology, online education has been the focus a society. This paper analyzes the current situation of Modern Education Technology and online teaching in universities, finds out the problems and tries to solve them with an online teaching platform. By studying the previous researches, the author designs a Moodle-based model of Modern Education Technology and integrates learning environment and teaching environment. This paper is to provide some suggestions and insights for the course design of Modern Education Technology.

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