Research on the Construction of University Teaching Mode Based on Online Education Platform

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Abstract. In view of the current domestic universities while constructing online education platform teaching mode, which cannot completely jump out of the circle of “open education resources” and “video open class”, it shows that the learners have difficulties to involve in the teaching process, and the existing relevant research results are mostly remaining on the surface. Contrast with traditional teaching, through reconstructing the three important elements: teaching resources, teaching method, and teaching evaluation, and applying four mature teaching theories: behaviorism, cognitive, humanistic and constructivism, this report proposes four universality teaching modes which are scientific, perfect and operable based on online education that comply with Chinese universities’ situation. In the course of teaching based on online education platform, these teaching modes combine teaching objectives, teaching ideas, teaching methods and strategies to achieve maximum teaching effect.

Introduction

For a long time, environmental policy and technical capabilities in China have provided excellent facilities for the construction of online education platforms in colleges and universities. In 2000, the Department of Higher Education, which belongs to the Ministry of Education, had launched the “New Century Network Course Construction Project” for pilot universities and 299 courses had passed the standard. Through inspection and acceptance; in 2003, the Ministry of Education launched the “National Program of Web-Delivery for Elaborate Courses”, which reviewed more than 3,800 courses and promoted tens of thousands of provincial and university-level courses. In 2011, the Ministry of Education launched the “National Program of Public Elaborate Courses” which includes video open class and resource sharing class. From 2011-2013, more than 200 top universities participated in the construction of quality video open class and more than 120 courses are opened to the public for free. After more than ten years of serious development, the online education construction of Chinese universities has already established a solid foundation. In 2012, MOOC (Massive Open Online Courses) had swept the world with “Digital Education Wave”. Since the beginning of 2013, Chinese universities have participated in MOOCs and this enhanced the establishment of online education platform and the reconstruction of teaching method. In 2015, the Ministry of Education issued the “Opinions on Strengthening the Application and Management of Online Open Courses in Colleges and Universities”. In 2017, the General Office of the Ministry of Education had announced “the Notice on Launching the 2017 National Online Open Course Recognition Work”. In 2018, the Ministry of Education officially launched 490 “Web-Delivery for Public Elaborate Courses”, which is the first national advanced MOOC in the world. Nowadays, there are more than 5000 MOOC in China. The number of participated college students and social learners has exceeded 70 million and more than 11 million college students have obtained credit hours from...
MOOC. China is in the leading position at MOOC development and it is believed that MOOC will greatly improve the quality of higher education.

However, when colleges and universities build a teaching model based on online education platform, it seems that they cannot completely jump out of the “weird circle” of “open educational resources” and “video open class”, indicating that it is difficult to integrate the teaching process and teaching activities naturally. Therefore, some problems still exist in the online education of colleges and universities: 1. Some teachers are having difficulties to switch from conventional “I teach you accept” teaching method to modern education method and showed little interest in construction and utilization of online curriculum resource. 2. Education system in some universities and colleges need to be improved. Although chalk is replaced with PPT and network video, basic teaching method is still the same. Therefore, these schools are facing the possibility of “changing soup without changing medicine” in their education system. 3. Conventional education system is designed for teaching in class room. If this education system is implemented to online education without modification, the advantage of online education will be greatly weakened, goals like extend knowledge, inspire creation will be ignored.

Therefore, to implement online education, colleges and universities need to estimate the construction and promotion methods of online education platforms and construct a scientific, perfect and operable online education platform comprehensively so that it matches the actual need of university and college in China. By combining education objectives, concepts, methods and strategies, maximum potential of online education can be achieved.

Strategy of Teaching Model Construction Implementation

Goal of Construction

The purpose of developing education system based on online teaching platform is to provide theoretical guidance for the existing chaotic online education. Through modular construction, the education concept is clearly expressed so that universities and teachers can master the “rules of the game” of online education. In addition, examples of teaching procedures based on the online educational platform should be provided for practical guidance. By comparing with existing education system, and based on the characteristics of online education, the new education system based on the online teaching platform should focus on the following goals and functions.

<table>
<thead>
<tr>
<th>Aim</th>
<th>Guiding form</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theorization</td>
<td>Theoretical guidance</td>
<td>Express teaching theories or ideas based on online education so that teachers can master and use them for teaching</td>
</tr>
<tr>
<td>Predictable</td>
<td>Practical guidance</td>
<td>Help teachers predict online teaching activities and expected teaching results</td>
</tr>
<tr>
<td>Process-oriented</td>
<td>Practical guidance</td>
<td>Provide teachers with the teaching conditions and procedures required for the intended teaching objectives, and guide online teaching activities</td>
</tr>
<tr>
<td>Holistic</td>
<td>Practical guidance</td>
<td>Make the online teaching process a complete system and fully utilize the functions of each link</td>
</tr>
<tr>
<td>Normalization</td>
<td>Practical guidance</td>
<td>Scientifically standardize teaching, improve teaching process, methods and results in practice</td>
</tr>
</tbody>
</table>

Elements of the Teaching Model

To achieve objectives listed in previous paragraph, it is necessary to design the teaching mode components based on the online education platform. Should include the corresponding teaching theory, teaching resources (including teaching environment, teaching carrier, etc.), teaching objectives, teaching content, teaching methods (including teaching process, teaching design, teaching technology, etc.), teaching evaluation, etc., and in the process of teaching each other Supplement,
contact, and restriction. The teaching process includes all the main teaching factors and their interrelationships, and has a stable internal logical structure. The relationship between the various elements is shown in Figure 1.

Online education utilizes designated network platforms and online resources which makes it to have different component compare to traditional education system. Advantage of online education system includes: 1. Access education resources easily 2. A more fascinating learning environment. The comparison of traditional classroom education system and online platform education system is shown in Table 2. In addition, online education system can record and find teaching history easily, this makes the evaluation of the teaching quality to be more evidential and diversified. The main differences between traditional and online education system are “teaching resources”, “teaching methods” and “teaching evaluation” and these components that need to be reconstructed will be discussed in table below.

Table 2. Comparison of functions of traditional classroom and online education platform.

<table>
<thead>
<tr>
<th>Elements of teaching model</th>
<th>Traditional classroom teaching</th>
<th>Online education platform teaching</th>
<th>The differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching theory</td>
<td>Theories that guide teaching (behaviorism, cognitivism,humanism, constructivism, etc.)</td>
<td>It is suitable for online education platform to guide the teaching of new teaching theory</td>
<td>Large differences</td>
</tr>
<tr>
<td>Teaching method</td>
<td>The traditional classroom teacher is in the leading position in the teaching process, so the teaching method is in the leading position</td>
<td>The teaching method based on online education platform includes two aspects: teaching method and learning method</td>
<td>Large differences</td>
</tr>
<tr>
<td>Teaching resources</td>
<td>Traditional classroom space, teaching materials, courseware, etc</td>
<td>Advanced teaching technology, open online teaching space, rich online teaching resources</td>
<td>Large differences</td>
</tr>
<tr>
<td>Teaching evaluation</td>
<td>It is the measurement, analysis and evaluation of the teaching process and results</td>
<td>Is the measurement, analysis and evaluation of the teaching process and results based on online education</td>
<td>Large differences</td>
</tr>
<tr>
<td>Teaching content</td>
<td>The comprehensive processing of course content, textbook content and teaching practice by teachers and students</td>
<td>The comprehensive processing of course content, textbook content and teaching practice by teachers and students</td>
<td>Small differences</td>
</tr>
<tr>
<td>Teaching goal</td>
<td>Course goal, classroom teaching goal, education success goal and other multi-level and multi-faceted goals</td>
<td>Course goal, classroom teaching goal, education success goal and other multi-level and multi-faceted goals</td>
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</tr>
</tbody>
</table>
Construction of Online Education Teaching Mode

Teaching theory comes from teaching practice and guides teaching practice, which is dialectically related to teaching practice. Teaching theory should include teaching and learning, which is permeated in teaching mode or contained in other elements, and determines its directivity. “Teaching” is concerned with promoting learning, mainly studying how to teach. “Learning” mainly describes and explains “how learning happens” and “what difficulties will be encountered in the learning process”. This kind of guidance is essential for both traditional classroom teaching and online education teaching system. Therefore, in order to make online education more reasonable and standard, before reconstructing the three elements of online education platform, including “teaching resources”, “teaching methods” and “teaching evaluation”, some prescription and normative theories should be selected to guide teaching.

Teaching elements determines the operating procedures of teaching mode and the combination of the teachers and students in the teaching activities, it is because of the teaching mode and teaching method of this kind of strong internal unity, determines the character of different teaching mode, therefore, different teaching theory should be also should be one to one correspondence teaching mode, to accomplish a certain number of teaching target service, only match the real teaching model elements, to get a relatively complete and reasonable teaching mode, to guide the teaching practice.

Behaviorism Teaching Theory -- Content Decomposition Teaching Mode

Behaviorism learning theory applied in online education platform based on education practice, is requests the teacher to master anywhere remote shape and correct students behavior, the method of creating a virtual environment for the students, as far as possible in the maximum extent, to strengthen the students' proper behavior and eliminate inappropriate behavior, therefore, in the online education platform, behaviorism education theories and the corresponding teaching method we called decomposition type teaching method.

The specific process is as follows: first, select the end behavior, namely the teaching goal, the more specific the better; Second, understand the students' starting behavior, that is, what can be done at present, what already known; Third, the pace division, is to divide the knowledge into several small steps, the size of steps vary with students' ability; Fourth, present the small tasks to the students and give feedback and reinforcement to the students' responses on each small step until the students reach the teaching goal, as shown in the figure.

![Figure 2. The content decomposition teaching method.](image)

Cognitive Teaching Theory——Task-Driven Teaching Method

The application of cognitivist learning theory to education practice based on online education platform requires teachers to make clear that learning lies in the change of internal cognition and learning is a more complicated process than the “start and end” connection. Therefore, in the online education platform, the corresponding teaching method of cognitive teaching theory is called task-driven teaching method. This teaching method should pay more attention to explaining the purpose and meaning in the process of learning behavior. Through the construction of different “process goals and tasks”, students should be motivated to think and achieve cognitive goals. These “process goals and tasks” are the variable factors that control learning.
Humanistic Teaching Theory—Research Teaching Method

Humanistic learning theory is applied to the educational practice based on the online education platform. Teachers are required to master the students' direct experience and internal feelings to understand their psychology, emphasizing the students' nature, dignity, ideals and interests. Teachers should pay special attention to the learners' personal perceptions, emotions, beliefs and intentions. In the humanistic teaching theory, they are the “internal behaviors” that lead to the difference between people. Therefore, based on the behavioral learning theory, when it comes to the educational practice based on the online education platform, it is necessary to emphasize the student-centered construction of learning scenarios. This teaching method is summarized as a research-based teaching method.

Summary

The refinement and construction of education teaching mode is itself a logic innovation process, which extracts “internal logic commonality” from various education teaching theories or valuable teaching practice. In this paper, the behaviorism teaching theory corresponds to the content decomposition teaching method, cognitivism teaching theory to the task driven teaching method, humanism teaching theory to the research teaching method, constructivism teaching theory to the multi-teacher teaching method. It's like “why do you want to explore education?” In order to enable people engaged in innovation and entrepreneurship, such as education, online open course curriculum construction, etc., to grasp the invariable rules in front of various forms and various activities, hoping to provide certain guiding significance for large-scale MOOC curriculum construction in Chinese universities at the present stage.

Acknowledgement

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References


[5] Li Xiaoming, MOOCs—Practice and Recognition of Peking University [EB/OL].[2013-10-17]


