

# Analysis of Teaching Reform of Computer Application Foundation Course in Higher Vocational College under MOOC Mode

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**Abstract**—Based on practical teaching experience, this paper innovates the teaching design of computer application foundation course. In view of the teaching design under MOOC mode, this paper puts forward some principles to be followed and several main links that should be paid special attention to in the process of teaching design.

**Keywords**—MOOC, higher vocational instructional design, computer application foundation

## I. INTRODUCTION

### A. There are Great Differences in Mastery of Computer Courses

In recent years, the quality and quantity of students enrolled in many higher vocational colleges have declined significantly, and the ability of teachers of information technology courses in senior high schools is uneven. Because of the different geographical and family conditions, the students in higher vocational colleges have different mastery of computers. Under the premise of not meeting the needs of all students, it seems difficult to accomplish the task of letting students with different computer mastery in the same classroom learn achieve the same satisfactory results by the same content courses. Under such circumstances, how can we take care of all the students? Teaching students at different levels and teaching students in accordance with their aptitude is very difficult for students to learn initiatively.

### B. The Computer Application Foundation has Fewer Classes and More Teaching Contents.

Most of the courses currently arranged in higher vocational colleges include the following contents: basic knowledge, XP operating system, Excel, Word, PowerPoint software application, the use of the Internet, computer maintenance and security. Some include training books. There are so many teaching contents and many cutting-edge technologies involved, but the class schedule is relatively small. Most of them are required to finish their courses in the last semester of freshmen. Take Xi'an Vocational and Technical College as an example. The selected textbooks are the 12th Five-Year Plan textbooks. Wang Jin is responsible for editing the “Basic Practice of Computer Applications” and “Basic Computer Science”, but only four classes are arranged every week. The content is more and the learning hours are not enough. Moreover, there are great differences in the students’ own foundation, many knowledge points cannot be fully grasped by students, so some teaching contents have to be deleted. At the same time, limited by the conditions of the computer room of the college, students can not repeat practice after finishing the theoretical class, so most students do not master it well.

### C. The Teaching Form of “Computer Application Basis” is single, and Students Lack Initiative.

At present, most of the teaching of “Computer Application Basis” in schools is carried out in public computer rooms. There are few computer classes, and the computer room cannot be opened to students in after-school time. Teachers also give more theoretical lectures in teaching, and seldom give students the opportunity to practice on the computer. Higher vocational students themselves have poor ability to restrain themselves, lack of foundation and lack of initiative in learning. Moreover, the quality of students is relatively poor, so it is too difficult to mobilize the initiative of learning. Many students cannot keep up with the progress of teaching, resulting in poor teaching effect.

## II. THE ADVANTAGES OF MOOC MODE TEACHING AND SEVERAL PRINCIPLES OF INSTRUCTIONAL DESIGN.

### A. Learner Centered Teaching Design.

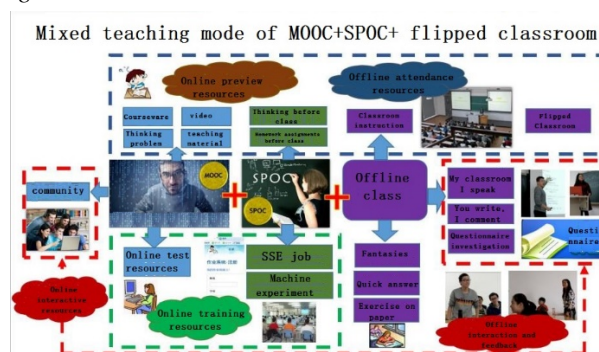


Figure 1 schematic diagram of the relationship between three points of knowledge, advanced technology and learning initiative

Teachers should take students' perspectives into account in teaching design. Students' mastery of knowledge should be understood, reasonable curriculum structure should be set up, and more effective learning methods should be found out. In MOOC teaching, the relationship among “knowledge point”, “advanced technology” and “learning initiative” is handled well. The relationship between the three is shown in the figure 1.

#### B. Teaching Design should be Linked and Fragmented, so as to Ensure Logical Rationality.

In order to meet the needs of people to learn fragmented knowledge, it is necessary to separate the knowledge points in the teaching content according to the teaching objectives. The contents of the course are designed in a unitized way, and small videos are produced. Establishing reasonable logical relationship among knowledge points can help students acquire knowledge quickly and let them study actively.

### III. SEVERAL MAIN LINKS OF TEACHING DESIGN UNDER MOOC MODE

#### A. Based on Teaching Content

Course design needs to include teaching process (activity + evaluation), teaching content, student learning manual, platform support and teaching assistant manual, etc. In MOOC mode, the fragmented video of the course, the students' learning state in the classroom and the interaction between teachers and students are presented in real time, so as to achieve the purpose of monitoring the learning process. On the premise of teaching content, you can express the knowledge system through video, audio, text, pictures and other forms, or with a variety of forms of combination. The emphasis is to clear expression of the content and logical structure of knowledge.

#### B. Teaching Activities as the Core of Design

The development of MOOC curriculum is fundamentally based on teaching design, especially the design of MOOC units. There are not only teaching resources, but also teaching activities that need to be paid attention to. The key to the development of MOOC is the plan, that is, the overall design. Teaching materials, courseware, teaching plan and other materials used in the teaching content can be directly used off-the-shelf, it is not necessarily to develop new ones, so the most core part of MOOC curriculum design is teaching activities. Teaching activity design basically includes four essential elements: activity goal description; process guidance; evaluation criteria and requirements; assignment time arrangement. At the same time, we need to collect materials needed for activity design and write cases. For example, in the practice of mixed teaching reform in SPOC+MOOC+C language flip classroom, it is designed as follows: 1. Offline learning part: (1). Three types of classroom teaching, a total of 32 hours, 16 lessons, 1) small flip + teaching (Quick Question and Quick Answer + Fantastic Ideas) a total of 24 hours, a total of 12 lessons. 2) Small flip + Teaching (you write, I commentary + paper training) for a total of 6 hours, 3 lessons. 3) Classroom turnover: My classroom, I say, with 2 classes and 1 lesson. 2. Online learning part: SPOC + MOOC + random brushing assignments + online access to information, a total of 12 hours of self-study + 6 hours of study, required each pre-class self-study according to online part of the content.

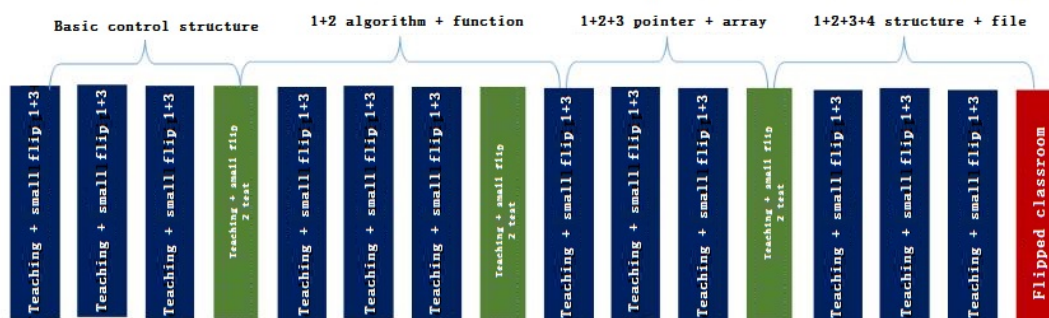


Figure 2 hybrid C language teaching design

#### C. Manage the Teaching Process.

Using MOOC mode of teaching content and flexible teaching activities, students may not be able to take the initiative to complete the learning tasks assigned by teachers on time and according to requirements. This requires teachers to think, explore and improve teaching mode, teaching conditions, assessment, teaching management, teaching methods and teaching environment one by one. Timely evaluation and feedback on curriculum reform should be carried out.

### IV. CONCLUSION

In summary, the advantages of implementing MOOC mode are obvious, which can effectively integrate existing educational resources, improve traditional teaching mode, and stimulate students' learning enthusiasm and initiative. In the future, we should continue to explore the teaching reform of the course “Computer Application Foundation” and strive to cultivate innovative technical talents with higher skills and qualities.

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