

# The Application of MOOC+SPOC Teaching Mode in the Teaching of Computer Public Courses in Colleges and Universities

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**Abstract:** This paper first expounds the MOOC+SPOC teaching mode from the concept and advantages of MOOC+SPOC teaching mode. Secondly, combining with the present situation, this paper analyzes the problems in the current teaching of computer public courses. Finally, the application of MOOC+SPOC teaching mode in the teaching of computer public courses in colleges and universities is proposed.

## 1. Introduction

With the continuous emergence of new social forms, the form of education has also become diverse. Traditional higher education can no longer meet the current needs in terms of teaching methods and objectives. The "Internet +" continues to penetrate the hearts of the people, injecting new blood into the education industry, and naturally there are opportunities and challenges. The demand for qualified personnel in society requires not only specialization and flexibility, but also the proportion of corresponding practical ability. This also requires that higher education should not only focus on the breadth in the scope of the knowledge system of the course, but also enhance the depth. Therefore, effective teaching reform should be carried out in the process of teaching in order to achieve the goal of qualified personnel training and to constantly improve the quality of teaching.

As a public course module for teaching resources, in the undergraduate talent training program of large-scale computers means that it is necessary to adjust various limitation factors such as students' source, school orientation, teaching conditions, and curriculum system. Therefore, in the specific implementation process of the course, it is necessary to fully combine the actual situation to reform the teaching methods and to revise the syllabus. Only in this way can the curriculum fully reflect its supporting role to the professional curriculum module in the talent training program.

## 2. The MOOC+SPOC teaching mode

### 2.1. The concept of the MOOC+SPOC teaching mode

The original meaning of MOOC is a large-scale online open course. The small-scale private online course is the definition of SPOC. Compared with MOOC, the teaching unit of SPOC can be more powerful in control, and the group it faces is usually the students of the school or the designated objects. The MOOC + SPOC teaching mode is a teaching method which combines the advantages of complementary knowledge system teaching reflecting the individualized needs of curriculum with the advantages of MOOC teaching reflecting the general knowledge system of curriculum in order to solve the resource problems in the teaching process with the help of Internet technology. The course teaching can be better completed through the teaching mode of building a private SPOC and participating in superior MOOC, and it is able to combine the test with offline works and online teaching discussions perfectly[1].

### 2.2. Advantages of MOOC+SPOC teaching mode

The multiple-school joint approach is the way that MOOC+SPOC courses often used during construction. Its purpose is to enable students to have more abundant learning resources, to achieve the combination of students' in-school learning and online learning, and to create a distinctive and

diversified curriculum system. Sharing and openness have always been emphasized by the MOOC+SPOC mode. In order to realize the sharing of resources, multiple studies can be built together. The establishment of a course with the characteristics of the school is in line with the purpose of the school, fostering students' innovative thinking, and discussing the same knowledge point to achieve the common learning of students both inside and outside the school. In the MOOC+SPOC mode, teachers' teaching proficiency can also be greatly improved, and they have more abundant teaching resources. At the same time, teachers can also answer questions for students through the platform, timely know the students' learning dynamics and timely check the students' learning situation, which enhances the feelings of teachers and students and realizes the multiple-channel communication between teachers and students[2].

### **3. Problems in the teaching of computer public courses at present in colleges and universities**

With the in-depth development of "Internet +", the traditional teaching mode with classroom face-to-face teaching cannot meet the teaching effect, new teaching thinking and new teaching technology. Therefore, the computer public course teaching in colleges and universities is also facing the challenge of teaching reform.

#### **3.1. The personnel training objectives in professional certification does not match the course objectives.**

In the traditional teaching mode, the course of "University Computer" can not effectively reflect the cognition of professional certification to knowledge system, and it does not reflect the individualized needs related to professional learning. The course orientation only highlights the generalist part and does not interface the subject and professional curriculum modules with the course objectives. The course objectives are also limited to the course knowledge system itself. At present, the specific individual needs of the "University Computer" course are different for each major. For example, the art major attaches importance to the intelligent design ability, the engineering major emphasizes the modeling ability, the liberal arts major pays attention to the practical application ability and the science major pays attention to the computational thinking training. However, the effective docking of talent training objectives and curriculum objectives with existing teaching modes in professional certification is obviously unsatisfactory[3].

#### **3.2. The multilayered and stereoscopic demand can not be reflected**

The principle of one-size-fits-all is often adopted in course objectives. Therefore, students' selective learning is restricted in the traditional teaching environment. The era of "Internet +" environment can not reflect the demand for multilayered and stereoscopic curriculum content, and the content of the course is too single and flat. Due to the limited teaching resources, the wide coverage of the curriculum and the influence of training programs, teaching content is more centered on the teaching materials and the curriculum system cannot be perfected.

#### **3.3. Students' enthusiasm for learning cannot be mobilized by the existing teaching models**

The promotion and vigorous development of the mobile Internet is the most prominent feature of the "Internet +" era. Our lives and learning styles have been changed by the further expansion of the scope of Internet services. With the rich learning content and convenient learning methods, online learning has fully stimulated students' interest in learning. The applicability, innovation, practicality and fast update are the most important features of the knowledge system of "University Computer". The needs of students for private space learning, multiple information channels and fragmented time learning are limited by traditional teaching models. Therefore, the enthusiasm of students for learning is also limited.

#### **3.4. The teaching process cannot be effectively reflected by the teaching evaluation system.**

It is the basic function of a perfect teaching evaluation system to make a comprehensive evaluation on teaching and to combine academic achievement with learning process. However, the

existing teaching evaluation system does not fully incorporate procedural assessment into the teaching evaluation system, neglecting the application of learning practice, weakening the learning process and only focusing on the results. The combination of theory and practice is the basic attribute of the "University Computer" course. Coupled with the emergence of new elements in the new teaching process, such as online learning and virtual experiments in the "Internet +" environment, the practical application characteristics of the curriculum cannot be reflected by the existing teaching evaluation system, thus affecting the teaching evaluation results of the curriculum[4].

#### **4. The application of MOOC+SPOC teaching mode in computer public course teaching in colleges and universities**

The MOOC+SPOC teaching team of the University Computer Course was successfully established with the support of the school. This plays an important role in the better use of the MOOC+SPOC teaching model in the teaching of computer public courses in colleges and universities. It is mainly manifested in the following two aspects: First, daily teaching can be supplemented and enriched through the active introduction of high quality online courses; Second, online course resources should be actively built, and self-construction and introduction in teaching resources should be fully integrated. In this process, the principle of gradual progress and the principle of from less to more should be adhered to, with the analysis of the evaluation standards, curriculum contents and course achievements of the teaching reform test class, the MOOC+SPOC mixed teaching mode suitable for the "University Computer" course in our school has gradually formed[5].

##### **4.1. Accuracy of course objectives**

In order to make better use of MOOC + SPOC teaching mode in computer public course teaching in colleges and universities, it is necessary to make more precise positioning of the course objectives based on the characteristics of the course. In order to replace the "one-size-fits-all" curriculum objective in the traditional mode, the corresponding course objectives for different subject groups are set according to the division of the subject group in our school. The "University Computer" course is a foundation course for professional skills in the liberal arts and arts curriculum, and is the pioneer courses of advanced language programming in science and engineering. Therefore, we accurately orientate the training objectives of the discipline in the new model based on the discipline. In addition, the resources of SPOC have been targeted construction and targeted selected[6].

##### **4.2. Hierarchy of course content**

The course resources of "University Computer" have been greatly enriched in the mixed teaching mode of MOOC+SPOC. Therefore, in the process of teaching, students can do hierarchical learning according to their own reality, divide the course content into different levels, and improve the understanding and effect of the course step by step according to professional needs and learning differences. The resources of SPOC are personalized and complementary content. The resources of MOOC are universal and general content. Combining MOOC resources with school course objectives and syllabus, a selective learning framework system can be established under the guidance of teachers. The resources of SPOC are mainly curriculum resources such as testing, discussing topics, exercises, lectures, courseware and videos. Students can selectively supplement their individualized learning. The two advantages of personalized learning and teaching resource sharing of the MOOC+SPOC teaching modes can also be fully reflected by the hierarchy of the course content[7].

##### **4.3. Autonomous ways of learning and practice**

The greatest characteristic of MOOC + SPOC mixed teaching mode is that the ways of practice are more flexible and diverse. The regular release schedule of online resources allows students to

arrange their own time for repeated learning and digestion based on their own receptivity, providing a relatively flexible space for students to learn and digest. At the same time, with the continuous improvement of the coverage of the campus network, the increasing popularity of mobile Internet technology and the relative stability of online resources, students do not have to be constrained by fixed classroom learning, and can learn fully using their own fragmentary time. The comprehensive monitoring program of the online platform can promptly remind students of the learning tasks and remind the progress of the study, and at the same time, the phenomenon that the supervision is not in place in the classroom teaching can also be effectively improved. The problem of insufficient teachers and obsolete experimental items in traditional teaching can also be solved by means of the virtual laboratory portal provided by the online platform in the mixed mode, so that the quality of the course practice part can be improved[8].

#### **4.4. The procedural teaching evaluation system**

The scientific and reasonable teaching evaluation should reflect the unity and effective combination of procedural learning and consequential learning in teaching evaluation, and combine the test evaluation of the course with the formative evaluation. Counting students' online discussion time and fragmented learning time. Relying on the functional support of the online learning platform is the main way of the formative evaluation part. The extensive test and evaluation methods such as the demonstration of online and offline homework evaluation, the online and offline tests, and the online and offline questions and answers are the main methods of test evaluation. The combination of test evaluation and formative evaluation is not only the evaluation of learning results, but also the evaluation of course learning.

### **5. Conclusion**

In summary, the application of the MOOC+SPOC teaching mode to computer teaching with the development of computer technology and modern science and technology can improve students' learning efficiency. Building a flexible and autonomous learning environment that meets the needs of students not only conforms to the trend of the times, but also plays a role in integrating the teachers of the school and optimizing the teaching process. The contradiction between teaching time and content should also be effectively dealt with to cultivate more innovative talents in computers for the country.

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