Research on the Teaching Reform Strategy of Professional Engineering Survey Course for Architecture Specialty based on the Internet under the Background of MOOC

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Abstract. In the "Internet +" era, MOOC is a new form of online open course, which has caused the change of teaching concept and teaching mode. MOOC is a learning experience that integrates high-quality educational resources, which brings new learning experience to learners. However, there are still some problems in MOOC, which will affect learners' difficulty to enter the deep learning state. Firstly, this paper analyzes the importance of MOOC. Then, this paper puts forward some questions. Finally, some suggestions are put forward.

Keywords: MOOC, Teaching Reform Strategy, Engineering Survey Course, Internet

1. Introduction
Engineering survey is a professional basic course for architecture majors, which is a professional course for students to measure. The course of engineering measurement requires students to master the basic theory and skills of measurement. Through basic measurement training and practice, colleges and universities can export professional engineering construction talents to the society. With the rapid development of Surveying and mapping technology, new theories, new instruments and new technologies emerge one after another. Therefore, the amount of knowledge of engineering measurement is also increasing[1]. However, the total class hours of engineering measurement course remain unchanged or even compressed. With the strong attack of MOOC, new technology has led to a revolution in the reform of existing teaching methods and education models, which will gradually change the traditional Chinese education model. Sharing course resources has become the main application resources of learners, which is the future trend of network excellent courses. MOOC has realized the upgrading of open courses with autonomous learning as the main body. Therefore, this paper believes that taking "MOOC" as an opportunity, we can combine engineering measurement courses, and college students will get a more systematic education[2].

2. The importance of MOOC to teaching reform
Engineering survey is a professional basic course with perfect theoretical system, which has very strong practicality[3]. Therefore, teachers must teach students the measurement elements, observation methods, and characteristics of different majors, which will involve all aspects of measurement knowledge[4]. However, some teachers often do not have a wide range of professional knowledge.
Therefore, MOOC is very important for the teaching reform of engineering measurement course, as shown in Figure 1.

2.1. Change the talent training mode
Colleges and universities are the base of talent cultivation, which is the cradle of cultivating excellent talents according to social needs. Architecture specialty is the product of market demand. Therefore, colleges and universities should cultivate the practical application ability of college students, which will improve the core competitiveness of college students, which will improve the core skills of students entering the society. Through MOOC teaching, colleges and universities can cultivate "production, learning and research" three in one comprehensive talents, which will form a new training mode. MOOC can more systematically meet the needs of learners, which will improve the practicality, skills and practicality of the course. Through the combination of theory and practice, MOOC has changed the traditional training mode of talents.

2.2. Strengthen students' practical ability
Engineering survey course is one of the basic courses of architecture specialty, which is widely used in various aspects, such as housing construction, civil engineering, traffic pipeline design, water and electricity transformation, etc. Engineering survey technology has become a basic professional skill of construction professionals, which requires graduates to have stronger practical ability. Therefore, the course of engineering survey must take the practical teaching as the main teaching direction. By attaching importance to experimental teaching, colleges and universities can strengthen students' engineering measurement skills. However, the new measurement technology is gradually intelligent, information-based and systematic, such as operation mode, work means, data collection, data processing, and so on. Therefore, the traditional teaching method can't meet the requirements of teaching new measurement technology. However, MOOC can solve this problem perfectly. On the MOOC online platform, we can find a variety of measurement technology courses, which are independent and diverse. Therefore, learners can choose appropriate measurement skills according to their own needs, which will strengthen students' practical ability.

2.3. Changing learners' subject
MOOC is a cheap or free learning method, which will provide flexible, open and high-quality curriculum resources for learners. MOOC is an online learning platform, which provides a platform for free communication and communication. Therefore, MOOC has changed the dominant position of learners. Learners can adjust their learning schedule according to their own learning plan, which will adapt to each student's learning. Through MOOC, students can learn all kinds of professional practical technology of engineering measurement independently, which has changed the main position of learners.

3. Problems in engineering survey course
A total of 1000 questionnaires were issued, and 982 questionnaires were valid, with an effective rate
of 98.2%\textsuperscript{16-6}. The specific analysis is as follows.

3.1. Uneven teaching content
The existing teaching content has been gradually out of line with the times, which can no longer meet the needs of society. With the continuous progress of science and technology, high-precision measurement methods have been applied to various engineering fields, such as total station, GPS, 3D laser scanner, etc. However, the existing teaching content is mainly the obsolete measuring instruments, such as theodolite, electro-optical distance meter, steel ruler precise distance measurement, theodolite mapping, etc., which is obviously out of line with the times. According to the survey results, the main problem is teaching content divorced from reality, accounting for 62.7%. The second is less measurement techniques and methods, accounting for 56.6%. Details are shown in Figure 2.

![Figure 2. Uneven teaching content.](image)

3.2. Single teaching mode
The course of engineering survey is a kind of teaching mode which is based on theory teaching and practice teaching. However, the current teaching mode is very single. According to the survey results, the main problem is cramming teaching, accounting for 68.6%. The second is lacking of interaction in teaching process, accounting for 51.4%. Details are shown in Figure 3.

![Figure 3. Single teaching mode.](image)

4. Teaching reform strategy of engineering measurement course under the MOOC
4.1. Diversified teaching methods
Colleges and universities should focus on students' learning. By building a good interactive platform between teachers and students, colleges and universities can innovate the teaching methods. MOOC is an open sharing platform. MOOC online course has become a new way for students to learn. In
MOOC learning, students can adjust the progress of receiving knowledge according to their own learning progress, which will form a student-centered education mode. Combined with the advantages of MOOC, colleges and universities can reform the teaching methods of engineering measurement course. Through diversified teaching methods, teachers can enhance students' practical ability. Through the construction of the interaction platform between teachers and students, students can preview the learning content in advance. This open teaching method will improve students' interest in learning. According to students' problems, teachers can guide students to solve problems, which will improve students' learning efficiency. Through diversified teaching methods, we can enhance students' learning ability, which can improve the basic skills of engineering measurement.

4.2. Systematic teaching content
The course of engineering survey should focus on practical teaching. Through the innovation of practical teaching mode, we can build a comprehensive practical environment. Through MOOC online course, college teachers can innovate the practical teaching mode, which will construct the practical environment of engineering measurement course in an all-round way. Through modern teaching methods, college teachers should develop systematic MOOC courses, which will improve students' interest in learning. By developing a systematic engineering measurement MOOC course, students can make learning plans according to their own needs, which will improve their learning efficiency. At the same time, the systematic teaching content will improve students' knowledge system, which will improve students' core competitiveness.

5. Conclusion
MOOC brings new challenges and opportunities to vocational college classroom. In the "Internet +" era, MOOC breaks the traditional classroom teaching mode, which will fragment the course content. Through the organic integration of online and offline ways, MOOC has realized student-centered. MOOC improves the teaching quality of engineering measurement technology, which provides reference for better teaching reform of engineering measurement technology.

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