Suggestions and thoughts on improving the teaching ability of teachers in higher vocational colleges under the background of MOOC

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Abstract. This paper elaborates on the emergence and development of MOOC, investigates and researches the current situation of teachers’ MOOC teaching in higher vocational colleges, deeply analyzes the role of MOOC in promoting the professional knowledge structure and professional quality of teachers in higher vocational colleges, and puts forward some Suggestions and thoughts on the current situation of teachers’ teaching ability in terms of using MOOC in higher vocational colleges. The first section in your paper

1. Introduction of MOOC
MOOC means Massive Open Online course. MOOC is the full integration of latest information technology and the high-quality teaching resources. MOOC has the characteristics of open sharing, flexibility and convenience, which are making it popular in the global scope.

MOOC started at Stanford University in 2011. Professor Sebastian Thrun, who founded Udacity, has attracted students from nearly 200 countries to complete online courses. Later, promoted by Wu Enda and Daphne Koller, Coursera was established. In 2012, MIT and Harvard University implemented the edX online learning program. At present, Udacity, Coursera and edX have developed into three MOOCs. In 2013, famous universities in China joined the MOOC platform one after another, sharing educational resources and ushering into a new era of MOOC in China. After several years of development, a number of excellent MOOC platforms represented by "Chinese University MOOC" have been formed in China.

2. The present situation of teachers' MOOC teaching in higher vocational colleges
Compared with undergraduate colleges, higher vocational colleges' response to MOOC is relatively late. In 2015, teachers in higher vocational colleges gradually joined in the subversive global education revolution [1]. The rise of MOOC has a huge impact on the traditional higher vocational education, and poses a new challenge to the teaching ability of teachers in higher vocational colleges. As an important part of China's national education system, higher vocational education is bound to evolve in this reform.

In recent years, China's vocational education reform has made great achievements. Secondary and higher vocational education has developed rapidly with the significant improvement of school-running
ability, which has trained a large number of technical and skilled talents for all walks of life. Despite this, the overall teaching level of higher vocational colleges is still not high. There are two main reasons for this: Firstly, the professional competence and teaching level of teachers in higher vocational colleges are uneven. Secondly, the application of information technology in teaching process is not satisfactory. To a certain extent, these two weak points restrict the cultivation of students' innovative practice ability and practical ability. In this regard, the research group visits some vocational colleges in Tianjin, and conducts a questionnaire survey and analysis on the information technology application ability of teachers in higher vocational colleges under the background of MOOC. The content for analyzing includes problems about classroom teaching, current situation of information technology use, and understanding on MOOC platform, the difficulty of teaching MOOC, and the construction of the course of the MOOC. 69 valid questionnaires were returned.

As can be seen from Table 1, more than 94% of the teachers surveyed do not have the knowledge and ability to carry out MOOC teaching. Among them, “no relevant training” and “requires technical guidance” account for 76.8%, which reflects that most teachers have the desire to learn and carry out MOOC teaching.

| Difficulties               | Number | Percentage of cases |
|----------------------------|--------|---------------------|
| No-relevant training       | 31     | 44.9%               |
| Inadequate school infrastructure | 12     | 17.4%               |
| Need technical guidance    | 22     | 31.9%               |
| No difficulties            | 4      | 5.8%                |

Table 2 further shows that teachers in higher vocational colleges only have some understanding of the two MOOC platforms--- Chinese University MOOC and the NetEase Open Course (account for 66.7% and 50.7% respectively), and don’t know much about other MOOC platforms. 23.2% of teachers hardly know the MOOC platform. Therefore, cultivating and improving the MOOC teaching ability of teachers in higher vocational colleges will become an important task in the future of vocational education.

| Common MOOC platform       | Number | Percentage of cases |
|----------------------------|--------|---------------------|
| EdX                        | 19     | 27.5%               |
| Coursera                   | 21     | 30.4%               |
| Udacity                    | 18     | 26.1%               |
| Wisdom Tree                | 23     | 33.3%               |
| Chinese University MOOC    | 46     | 66.7%               |
| Netease Open Course        | 35     | 50.7%               |
| Sina Open Course           | 23     | 33.3%               |
| UOOC Alliance              | 11     | 15.9%               |
| ICourses                   | 10     | 14.5%               |
| Super Star Erya            | 17     | 24.6%               |
| have no idea               | 16     | 23.2%               |

3. MOOC promotes the professional and cultural quality of teachers in higher vocational colleges

3.1. The content of MOOC is "fragmented", which urges teachers to integrate their knowledge structure

MOOC has set off a revolution in fragmented learning, which, to some extent, satisfies people's need to use fragmented time to learn knowledge. This characteristic of MOOC makes learners' learning time more flexible and learning content more targeted. MOOC is a fragmented learning method. Compared with the traditional teaching mode, it breaks through the limitation of fixed time in the
traditional teaching. Through a few minutes to a dozen minutes of short video, and the combination of sound and painting, MOOC makes a certain knowledge point vivid and interesting. Accordingly, it is easier for students to focus on the content, thus promoting the optimization of learning effect.

Due to the fragmentation of learning time and content, what is learned from MOOC is often not limited to books, and is even more vivid and easier for students to understand than that in books, which puts forward higher requirements for teachers' knowledge structure in higher vocational colleges. Teachers in higher vocational colleges should keep pace with The Times, constantly updating the knowledge structure, mastering the skill of fragmenting the course content and cultivating the ability of reasonably dividing and reorganizing the key knowledge points. In short, teachers should integrate their knowledge structure to adapt to the new requirements of MOOC teaching.

3.2. The "large scale" of MOOC encourages teachers to continuously improve their professional quality and humanistic quality

MOOC are not limited by time or space, age or nationality. Everyone can learn what they want to learn through MOOC [2][3]. Compared with traditional classes, MOOCs have a much larger scale, with not only one or two hundred people, but tens of thousands or even hundreds of thousands of people learning a course at the same time. In higher vocational colleges, students come from different sources, thus there are great differences in their professional knowledge, cultural background, learning habits and degree of using MOOC. So this situation requires teachers of higher vocational colleges to take into consideration of the learning needs for students with poor foundation as well as top students. At the same time, teachers themselves should also pay attention to the development of academic frontier, constantly adjust the knowledge structure, actively learn new methods, technologies and techniques in this field, and consciously apply them to MOOC teaching.

At present, well-known MOOCs at home and abroad include Udacity, Coursera, edX, MOOCs of Chinese universities, etc. They offer courses for teachers' professional development. Taking "Chinese university MOOC" for example, as to August 31, 2019, the courses about teachers' development of curriculum on it has reached 1482. Among them, 349 are the national excellent courses, such as how to do research as a teacher, teachers' professional ethics and education policies and regulations, "flip classroom teaching method", the micro class design and manufacture, and etc. They are one of the few good lessons for resources.

However, there are relatively few studies on the application of MOOC in higher vocational education. Figure 1 show that from the search results on CNKI, only two people paid attention to the application of MOOC in the teaching reform of higher vocational education in 2013. Only until to 2015, the number of relevant researchers had been greatly improved. So, it's not hard to see that teachers in higher vocational colleges have little and late contact with MOOC. In the face of the rapid development of MOOC, teachers in higher vocational colleges should join in the educational reform as soon as possible and actively carry out the study and research on MOOC.

Figure 1. current condition of MOOC in higher vocational education reform
Therefore, teachers in higher vocational colleges can regularly select relevant MOOC for online learning according to the needs of professional development, absorb advanced teaching concepts, consolidate professional foundation and improve cultural literacy. The higher the personal cultivation and the more profound professional knowledge of teachers, the more able to enlighten students' innovative thinking in class, which will also play a role in promoting the training of senior application-oriented talents in higher vocational colleges[4].

4. Suggestions and thoughts

4.1. Improve the standardization of MOOC courses and create unique MOOC resources

MOOC should be further improved and developed to realize the teaching concept of fair education and sharing of high-quality resources[3]. Therefore, standardization construction is extremely urgent. As important "consumers" of MOOC resources, higher vocational colleges should actively join in and become important participants in the standardization construction of MOOC courses. The office of academic affairs and secondary departments of colleges shall take the lead and set up a MOOC standardization construction working group, which shall be responsible for overall arrangement and coordination of resources within the university. At the same time, we should strengthen inter-school exchanges, learn from each other's strengths and achieve win-win cooperation with similar colleges to build a MOOC platform that meets the needs of higher vocational education. We should make continuous practice and exploration to promote the gradual renewal and improvement of MOOC platform.

The implementation process can be followed as this. Firstly, Based on the existing professional teaching materials, combined with the characteristics of each discipline, a MOOC platform is set up according to the school's professional structure. Secondly, in line with the principle of classification and individualized teaching, with the help of the front-line teachers, some interesting and key knowledge points should be selected and recorded into videos. The length of video should be 5-10 minutes. Each section of video only tells one key point.

It should be noted that the construction of MOOC should not be rushed, and should be conducted under the guidance of scientific planning. Instead, it can be carried out in consideration of both its connotation and quality. Great efforts are made to build some good MOOC courses which conform to the professional structure, subject characteristics and students' cognitive rules in two to three years. For professional and technical knowledge, relevant video can be obtained through the Internet or other platforms. If it is possible, schools can organize business experts to participate in jointly.

4.2. Strengthen education theory and information technology training in higher vocational colleges

Compared with undergraduate colleges, higher vocational colleges are short of excellent teaching teams. Faced with the impact of MOOC, teachers in higher vocational colleges will encounter more challenges. In the age of information technology, teachers are no longer the sole owners of knowledge, but the interpreters, transmitters, organizers of learning resources, and instructors of learning methods[5]. So, for teachers in higher vocational colleges, the first step is to change the teaching concepts, change the role of teachers and build a new teaching model. Faced with the new generation of educated youth, teachers’ proficiency of network technology and ability to obtain information, make and use multimedia software are directly related to the teaching effect. The severe reality requires teachers in higher vocational colleges to actively improve their information technology ability and apply it to front-line teaching.

For this purpose, the information technology training should be made regularly for teachers of higher vocational colleges in the form of workshop. Its training contents include MOOC teaching, flipped classroom and educational teaching. Teachers should be encouraged to cooperate with each other to comprehensively improve their teaching ability and information technology quality[6].
4.3. Change teaching concept, innovate teaching methods

The teaching concepts pursued by information technology holds that only when the actual needs of learners are fully considered, can effective teaching activities be carried out. Teachers in higher vocational colleges should actively change their teaching concepts, break the traditional teacher-centered teaching methods, actively introduce MOOC—the modern teaching methods, highlight the dominant position of students, and advocate student-centered teaching. In this regard, teachers should re-identify the role positioning and focus on how to cultivate students' interests toward the subject in order to realize the transformation of teaching from the deductive "conclusion education" to the applied "experience education". In addition to teaching professional knowledge, teachers are supposed to guide students to study independently, broaden their academic horizon and inspire students to learn creative thinking.

Higher vocational colleges emphasize the close combination with the actual industry. They require more detailed division in specialty setup. So, some breakthroughs should be made in terms of teaching methods. Traditional teaching methods, such as lecturing method and demonstration method, should be abandoned. Instead, task-driven method, workshop practice teaching method and on-site teaching method should be used. In the teaching process, modern teaching media, such as micro video and MOOCs, should be used. Besides, teaching cases closely related to the production practice should be cited. If it is possible, schools can adopt "MOOC + on-site" way of teaching, a good combination of theory and practice. This teaching method requires that a part of teaching and learning are carried out in the enterprise in order to channel the latest, most comprehensive, and the most practical skills to the students.

4.4. Actively learning new media skills to improve information-based teaching means

In the 21st century, information technology has exerted great influence on education, and informationized teaching has become the consensus of educators. The deep integration of information technology and subject curriculum will become the focus of teaching for teachers in higher vocational colleges in the future. The emergence of Internet products, such as MOOC, flipped classroom and mixed teaching, puts forward higher requirements for teachers' ability on information technology application. During the teaching process, teachers are required to skillfully use multimedia technology and rationalize the use of modern teaching equipment, which helps to strengthen students' visual auditory experience and enhance their memory and understanding effect. Therefore, the knowledge and skills could be quickly and efficiently passed on to students. At the same time, transmission and communication of psychological, spiritual and emotional information between teachers and students could be achieved as far as possible.

In addition, teachers in higher vocational colleges should not only have operational skills in a variety of teaching media, but also have the strong ability to acquire and integrate network resources. On-line teaching resources should be screened through the Internet and combined with off-line resources for final application in MOOC teaching. In the process of using or participating in the production of MOOC, teachers should first acquire certain network knowledge, master the operation methods of audio and video software, and understand the usage and management of MOOC platform, which contribute to improve the application ability of teachers on information technology in higher vocational colleges.

4.5. Promote Teaching and Learning through Self-reflection

Reflection is the beginning of progress. In a society of knowledge, every citizen has to learn for sustainable development. American scholar Posner pointed out that "teacher's growth = experience + reflection", which fully shows the importance of reflection for teacher's growth. "Teachers' teaching activities are by no means a process in which teachers mechanically apply pedagogical knowledge to make technical responses to educational activities, but are based on teachers' reflective wisdom to make a judgment in line with the actual situation.". For teachers in higher vocational colleges, reflection ability is very important. They should reflect not only on what kind of skills the society
needs, but also on how to solve the existing problems on the current teaching plan. Through reflection, teachers in higher vocational colleges can constantly improve their professional skills and classroom teaching ability, and provide a strong guarantee for training senior application-oriented talents.

5. Conclusion
With the development of technology and society, MOOC is becoming more and more prevalent in the teaching field. The mainstream mode of education in the future will take video as the main carrier. With abundant educational resources, the concept of distance education will gradually disappear. Facing this educational reform, it is an important task for every teacher in higher vocational colleges to figure out how to follow the trend of information technology. In spite of this, teachers in higher vocational colleges do not need to panic, instead, should pay enough attention to making full use of the MOOC platform and network information technology to effectively improve their teaching ability and professional quality to meet the challenges.

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