

Research and Practice of MOOC Construction Based on Vocational Education Platform

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ABSTRACT

Vocational education is the extension and supplement of college education and post training. The rise and development of MOOC brings opportunities and challenges to vocational education. From the perspective of vocational education, this paper puts forward the methods and strategies of MOOC course content design, teaching implementation, teaching evaluation and teaching guarantee, and validates the contents of the study by combining the construction of "MOOC course of aviation maintenance quality management" in practice.

Keywords: vocational education, MOOC, curriculum construction.

1. INTRODUCTION

With the rapid development of Internet technology, MOOC attracts high attention around the world. As a new mode of vocational education, it has the characteristics of "large-scale", "open" and "online", and personalization, flexibility, interactivity and autonomy. MOOC teaching has been widely used in recent years, which provides a new idea and a new way for the informatization development of vocational education [1]. The research and practice of MOOC construction based on vocational education platform is of great practical significance to the further development of MOOC teaching. Combined with the construction of "aviation maintenance quality management" MOOC, the paper makes an in-depth study and practice on the construction of MOOC based on vocational education platform.

2. MOOC COURSE CONTENT DESIGN

The content of MOOC course mainly includes knowledge points, teaching videos, animation and unit testing.

2.1. Knowledge point

Knowledge point is the basic unit of teaching information transmission in the course of teaching activities, including theory, principle, concept, definition, formula and so on. The set of knowledge

points and the logical relationship between knowledge points constitute the knowledge system of MOOC. The learners' mastery of the knowledge system is actually the mastery of the knowledge points and their relations [2].

While dividing knowledge points, one should take teaching objectives and syllabus as theoretical basis; the other should ensure the accuracy of teaching content, MOOC class time based on vocational education platform is generally not more than 10 weeks, the accuracy of teaching content is higher, the curriculum knowledge with less correlation degree should be eliminated [3]; the third should pay attention to dividing granularity, so as to ensure that the knowledge points are full and relatively independent. Also to meet the length of micro-video requirements.

2.2. Video of teaching

Teaching video is a short, well-designed video with knowledge points as its unit. Each class contains 3-5 short video clips on the topic, which is convenient for learners to follow the subject and to learn at any time and at any place. Teaching video of MOOC is usually less than 10 minutes long, which is in line with the characteristics of information age learners using fragmentation time to learn. The practice at Khan College shows that video length of 6-10 minutes is the best. Video can be presented in a variety of ways, can be random switching between image and PPT, can also be

real-life teaching. Video content should be colorful, can be text, pictures, cases, animation, video, as many forms as possible to present knowledge points, so that learners will like the course [4]. In order to enable learners to feel the warmth, enthusiasm and strong sense of the scene from the MOOC video, the teacher must be enthusiastic and affable when recording the video, and be able to infect the learners, like a friend, with generous manners and appropriate gestures.

2.3. Animation

In order to increase the attraction of teaching and improve the teaching effect, some of the course contents such as case, operation process, execution process can be displayed visually in the form of animation. Animation design is usually provided by the course team with animation scripts, which are produced specifically by information technology companies. Scripts are the basis of animation production, must be specific and refined. In the MOOC "Aviation Maintenance Quality Management", more than 20 real cases of aviation maintenance quality safety warning are designed to make the learners aware of the danger of the accident and the importance of operation according to the rules so as to raise their safety awareness consciously. Its accident case animation script includes the title, content, process, cause, enlightenment and so on [6].

2.4. Unit Test

In order to enhance their participation and to consolidate, urge and test their learning, the learner can ask questions and interact with the learner when watching the instructional video, that is, arrange exercise test questions around the teaching purpose between the video units. The design of the test questions is based on the knowledge points, and the content is closely related to the teaching videos [7]. The learners can test their mastery of some knowledge points through the exercises, and then consolidate and self-feedback in time. The test questions are mainly objective questions, such as judgment questions, single-choice questions and so on. The exercises designed in this way will be more focused.

3. IMPLEMENTATION OF MOOC TEACHING

The implementation of MOOC teaching based on vocational education platform, from the point of view of teaching process, roughly includes the following links:

3.1. Course release

Before the beginning of the course, the teachers will release the basic information of the course on the vocational education platform with the basic unit of the course, including the course propaganda film, the course introduction, the knowledge needed to learn the course, the syllabus, the team of course teachers, the course start and stop time, the study time, the study difficulty and so on. The course propaganda film is very important, the learner can understand the course setting background, the study content, the study goal and so on through the propaganda film, the high-quality course propaganda film will attract the learner's study interest greatly.

3.2. Curriculum Teaching

At the beginning of the course, the teacher will regularly release the course materials, including video, test questions, courseware, assignments, etc., which will be entered through the platform "I manage the course"/ "Manage the course"/ "Course Content Management"/ "New Unit". After the new course, click "enter chapter management" can add course materials, such as video, test questions, etc., can be modified, preview, after confirmation can be released [8]. At this stage, the teacher should encourage students to post on the MOOC platform forum and submit problems to the platform for interactive discussion. Teachers need to take time out for online tutoring to answer difficult or common questions, as well as on-line assessment, exchange feedback and on-line testing to track learning.

3.3. Course Learning

Students are scheduled to participate in the course video learning, test exercises, problem discussion and homework and other teaching activities. Teachers can also regularly go to the unit to organize some off-line meetings to meet the students face-to-face exchange activities. Homework usually has a deadline for completion, which can be achieved through a variety of evaluation methods, such as system auto-grading, self-grading, and learner-to-learner evaluation [9].

3.4. Examination and certification

At the end of the course, eligible students can apply for the examination within the schedule time. After passing the examination, they can obtain the certificate of the course.

4. EVALUATION OF MOOC TEACHING

Through the relevant research of MOOC course quality evaluation, it is found that the quality of MOOC

course is mainly related to the quality of teaching content, the quality of lecturing teachers, the quality of teaching resources and the quality of technical support.

4.1. Quality of teaching content

The quality of teaching content is the key problem of learning effect and efficiency. From the linear regression analysis, the quality of MOOC curriculum is related to learning effect. The quality of MOOC curriculum is influenced by whether the course content is combined with the actual military training, whether it adapts to the characteristics of various professional posts, whether it highlights the post-holding ability and so on. Only by fundamentally designing, building and evaluating MOOC can the learning effect of MOOC be improved.

4.2. The quality of the teachers

In a questionnaire survey on the quality of MOOC courses, more opinions and suggestions are directed at the teachers, such as "not enough fun" and "not enough affinity". The teacher's language expression ability, inductive ability, content organization ability, professional accomplishment, and Individual manners and so on not only directly affect the transfer of teaching content, but also affect the learning effect.

4.3. Quality of teaching resources and technical support

Advanced technology makes teaching resources rich, teaching interaction diverse and effective, learning analysis and evaluation in-depth and concrete. By optimizing the teaching resources, the quality of the course and the learning effect can be improved to a certain extent. Through video, image processing technology to enhance the interaction between video and learners, to promote learners to think, to maintain attention [10].

In order to improve the quality of MOOC course "Aviation Maintenance Quality Management", the course team includes five teachers with rich teaching experience and strong teaching expression ability, combing the knowledge points by division of labor, cooperation and discussion, determining the teaching content and presentation mode, cooperating with professional companies in technology, which is responsible for courseware beautification, video recording processing and animation production. The quality of the course is guaranteed.

5. MOOC TEACHING SUPPORT

5.1. MOOC curriculum team

To create a clear division of labor, unity and cooperation of the curriculum team is the key to the construction of MOOC, the MOOC curriculum team includes the on-line MOOC course teachers, offline course teachers and teaching activities of the auxiliary and management staff, MOOC teaching emphasizes the concept of student-centered teaching, which puts forward higher requirements for teachers [11].

On the one hand, the teacher must have solid teaching design ability, should carefully design the student's study task, edit the student's self-study teaching video, design the student's main body's classroom study form. The focus of a teacher's function shifts from lecturing to designing, organizing, helping and mentoring.

On the other hand, teachers must have strong on-line learning resources management ability. In developing on-line MOOC learning, it is necessary to update teaching resources regularly and carry out on-line exchange and interaction between students and teachers at the same time. In the on-line learning activities, the design of the topic and the organization of the learners all need to be managed by the teachers.

In the construction of the curriculum team, we can adopt the method of internal and external recruitment to establish a relatively stable full-time faculty team. At the same time, according to the actual situation, select a group of troops grass-roots cadres with strong sense of responsibility, high educational background and certain teaching ability as part-time teachers to enhance the orientation of teaching content.

5.2. MOOC platform

At present, colleges and universities through the platform to release high-quality characteristic curriculum resources, according to the needs of personnel training units to organize all kinds of courses, and according to the need to submit examination applications, relying on the platform to organize on-line examinations, courses responsible for colleges and universities to issue certificate of completion of courses.

The service functions of vocational education platform include micro-video teaching, in-class testing, learning progress tracking, homework evaluation, learning forum, course examination, etc. The management functions of the platform include course management, user management, learning process management and learning data query.

5.3. MOOC teaching resources

The MOOC online teaching resources of vocational education platform include micro-video, syllabus, teaching plan, test questions, auxiliary teaching resources and evaluation standards. The quality of teaching resources is directly related to learners' learning motivation and interest, so it is necessary to refine the teaching resources to achieve the richness of the content and the refinement of the form [12]. We should make full use of the professional advantages of teaching designers and educational technicians to produce high-quality teaching resources.

When MOOC resources are uploaded to the MOOC platform, they are highly open and shared. Students are not subject to time and place, and the number of students is beyond the limits of the classroom. Course video can be re-watched, which greatly improves the efficiency of education resources and the coverage rate of Personnel participating in vocational education.

6. CONCLUSION

Vocational education is the innovation and development of on-the-job continuing education, the supplement and extension of college education and training practice, the strong support of large-scale training of high-quality new talents, and the inevitable requirement of constructing life-long education system. The MOOC curriculum of vocational education and its resources construction are the core of the perfect vocational education system. How to construct the curriculum system of vocational education scientifically and rationally, normalize and standardize the high-level construction of the online curriculum that meets the reform and innovation development, and explore the teaching mode of vocational education based on MOOC is worthy of the long-term attention and continuous research of vocational educators.

REFERENCES

- [1] Pong Cha, A Brief Analysis of the Course Design of Gyro Navigation Technology MOOC, Naval Academy Education, 2019, (1).
- [2] Shaocheng Song, MOOC Research on the Design and Application of Teaching Resources, Beihua University, [Network Publication Period], 2018 (08).
- [3] Ziyu Yin, A Study on the Factors Influencing the Learning Effect of MOOC Learners, Higher Architectural Education[J], 2019, (5).
- [4] Aiguo Tian, Comparative study on flipped classroom teaching and traditional teaching based on 《Statistics》MOOC technology, Shandong textile economy [J], 2016, (4) : 46-48.
- [5] Ce Zhang, Xiaofei Xu, Dianjun Chu, Build MOOC with Chinese characteristics to promote teaching quality and upgrading, Higher Science Education [J], 2020, (6) : 46-50.
- [6] Dan Hao, Literature analysis of the current status of MOOC research in China, China Distance Education [J], 2013, (11) : 42-53.
- [7] Lu Liu, Zhimin Liu, MOOC practical dilemma and enlightenment of universities in European and American universities, Academic Monthly in Education [J], 2017, (1).
- [8] Lei Zhao, Hong Zhu, Zhuoping Wu, Research on MOOC Construction and Institutional Environment of Chinese Universities, China Distance Education [J], 2019 (10).
- [9] Yun Ma, Yanlin Zheng, Xijin Fu, Visual analysis and support strategy research of MOOC research hotspots at home and abroad, Modern intelligence [J], 2017 (10).
- [10] GenFu Yang, Continuous use of behavioral influencing factors by MOOC users, Open education research [J], 2016 (2).
- [11] Ning Wang, MOOC: Cognition, participation and evaluation of college students, Journal of Hainan Normal University [J], 2018 (2).
- [12] Luyi Li, Yanlin Zheng, Promote the application of MOOC in college classroom teaching, Modern long-distance education [J], 2016(4).