

Construction of “Digital Electronic Technology” MOOC in Xi'an Aviation University

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Abstract

With the development of Internet and computer technology, more and more educators and learners pay attention to large-scale open network courses. MOOC provides high quality and cheap learning resources for the vast number of learners, and attracts a large number of students and social workers. This paper introduces the construction method of open network course in the aspects of making electronic teaching plan and recording teaching video, and summarizes the construction experience of “digital electronic technology” MOOC in Xi'an Aviation University.

Keywords

MOOC, Digital Electronic Technology, Network Course.

1. Introduction

With the rapid development of internet, mobile communication、intelligent computer and big data technology, Massive Open Online Courses (MOOC) has attracted more and more educators and learners because of the convenience of mobile learning and the richness of learning resources. Attention. In many ways, MOOC conforms to the characteristics of mobile Internet and continuing education. It integrates rich multimedia resources. It provides learning materials such as video, electronic teaching plan, homework questions, thinking questions and examination questions, and enhances the sharing of high-quality resources.

The course of “digital electronic technology” is a compulsory course for students majoring in electronics, communication and automatic control. The basic course of “digital electronic technology” introduces the basic concepts, basic theories, analysis and synthesis methods of digital circuits from the perspective of research methods, system synthesis and engineering application [4]. Through studying the course of “digital electronic technology”, we can deepen the profound understanding of relevant theories, improve the ability of analyzing and evaluating digital circuits and systems, master the ability of using new technologies to design standard integrated circuits and high density programmable logic devices to form digital systems, and train students to find, solve and evaluate problems. The practical ability of the project lays a good foundation for further study of VLSI systems.

“Digital Electronic Technology” of Xi'an Aviation College is a high-quality course for the first-class specialty of electronic information engineering. Xi'an Aviation University “Digital Electronics Technology” Museum Team [5] expands its knowledge on the basis of in-depth mastery of the course content, and introduces the thinking questions, examples, exercises and research-based learning projects that have been written for many years into the course. Combining with the characteristics of MOOC teaching, this paper summarizes the construction

experience of “digital electronic technology” MOOC in Xi'an Aviation University in the aspects of MOOC Electronic Teaching Plan and Teaching Video.

2. MOOC E-teaching Plan

Electronic teaching plan PPT is an important tool for MOOC teaching, which requires substantial content, clear knowledge context, concise broadcast form and standard format. The standardized E-teaching plan for MOOC should have the following characteristics.

1. Electronic teaching plan slide size ratio must meet the requirements of the MOOC website. At present, most MOOC websites recommend that the slide size be 16:9 wide screen mode. Because the projection screen size of many colleges and universities is still 4:3 standard mode, so the original electronic teaching plan needs to be substantially revised.

2. The clarity of the pictures in the electronic teaching plan must meet the requirements of the MOOC website. At present, large screen LCD TV is used in most of the teaching videos. The clarity of the display equipment and the recording equipment is getting higher and higher. Of course, it is not necessary to pursue high definition, resulting in too large storage space of electronic teaching plan, increasing the burden of online upload and download of the later stage of the MOOC platform.

3. Electronic teaching plan is rich in content, concise in background and appropriate in animation. The necessary animation can be designed in the slide to make the explanation more vivid and clear. Learners should focus on the knowledge points and the speakers when they study the course. If they design too many animations in the slide, it is not conducive to students' online learning. If the website can only upload PDF format electronic teaching plan, producers need to pay attention to PPT page animation do not block other text content.

3. Production of MOOC Teaching Video

There are various forms of recording teaching videos. The common forms of video recording include classroom live recording, professional studio recording, outdoor scene shooting, video recording (the main speaker does not appear), and so on. Each video recording method has its own advantages and disadvantages. The teaching team can choose according to the characteristics of the course and the habits of the speaker. The teaching team needs to fragment the videos according to the knowledge points of the course. The length of each video can be controlled in about 5 to 10 minutes, usually less than 15 minutes. The length of each video will affect the learner's systematic learning of the knowledge point, and the length of the video will reduce the learner's concentration. Because most of the learners are not aiming at obtaining the certificate of course completion, the teaching videos should increase the explanatory content of Engineering practice, industry dynamics and theoretical application, so as to enhance the learners' interest in learning. The length of video course in MOOC teaching is quite different from that in traditional classroom teaching. MOOC omits the teaching links of opening remarks, reviewing, asking questions, interrupting and ending in traditional classroom teaching. The same length of teaching covers more course knowledge. The digital electronic technology course of Xi'an Aviation University adopts the form of video recording, and produces film heads in professional studios. Ninety videos were produced, including basic theory teaching, course introduction, digital electronic technology experiment and common exercises. In video recording, two cameras record the panorama and close-range of the speaker and the display screen respectively, and simultaneously record the PPT screen of the computer. In the later video clipping process, three video signals are selected for editing and processing, which requires the collaboration of the video production team and the course presenter team.

4. Summary

As a new type of network teaching mode, MOOC conforms to the characteristics of mobile Internet and continuing education, and provides rich and high-quality learning resources for students and social workers. Learners can choose courses of interest at any time and place to participate in learning, and improve their knowledge level and professional skills. According to the characteristics of open network teaching, this paper summarizes the construction experience of digital electronic technology course in Xi'an Aviation University. MOOC teaching activities need to be supported by a first-class teaching team, which needs the close cooperation of the lecturer, the course team and the video production team. Short videos are the main learning resources. Short videos divide the course content into several smaller knowledge points modules according to the curriculum teaching plan. In order to help learners self-study and self-evaluation, we need to provide standardized electronic teaching plans, test questions, homework questions and seminars. Answering, discussing and interacting between teachers and students are of great help to improve student's learning effect and teacher's teaching quality.

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