An Effective Production Process for Quality Video Open Course

Mao Chen, Huaxin Wang, Miao Dai, Ying Ying Li and Sanya Liu

ABSTRACT

Quality video open course has played an important role in expanding the transmission of high-quality educational resource in universities and promoting the balanced development of educational resources. The production method and technology of quality video open courses directly determine the quality of the course and affect its application effect. Due to the lack of unified standard or template, the overall level of current quality video open course is not high enough. Under the guide of National Standard on Production Technology of Quality Video Open Course, this paper focuses on the target needs of the construction of the video open course, and a practical and effective shooting and making method is proposed by combining the video production industry norms and the current development trend of video technology. The whole production process, including the preparation, shooting and post-editing are all described in detail, and some important skills and matters needing attention are introduced for reference. The proposed method has been tried and tested in Central China Normal University and its effectiveness and efficiency has been successfully confirmed.

INTRODUCTION OF NATIONAL QUALITY VIDEO OPEN COURSES

In 2011, according to The Implementation Opinion on National Quality Video Open Courses Construction, National Education Ministry plans to build 1000 quality video open course during the period of 12th Five Year Plan.
The national quality video open courses are divided into quality video open course and the quality resource sharing course. Quality video open course is mainly for college students, while quality resource sharing course is not only for college students and teachers, but also is suitable for the social learners [1]. The construction of national quality video open course can help to inherit and pass on the knowledge and culture, and fully demonstrate the scientific teaching methods and concept of our country. Moreover, construction of quality video open courses plays a great role in promoting the education reform, which can help solve the problem of uneven distribution of education resources to some extent, and provide more choice for students in choosing leaning resource [2].

PROBLEMS IN THE MAKING OF NATIONAL QUALITY VIDEO OPEN COURSES

By April 2015, the website of iCourse has launched 806 quality video open courses, which covered 12 categories including industry, agriculture, science and so on. Through the investigation of on-line quality video open course, it is found that some colleges and universities did not abide by the national technical standards strictly during the course production [3]. At present, there are some common problems in quality video open courses as follows:

(1) Poor light or uneven light.
When arrange lighting before the shooting, we should not only follow the national standards, but also design the scientific light layout according to the actual situation.

(2) The shooting studio is not professional.
For instance, irrelevant contents such as air conditioning are shown in the video. In fact, the studio area of the production course should not be less than 50 square meters, which is stipulated in National Standard on Production Technology of Quality Video Open Course.

(3) The picture is blurred.
It is often that case that the image synchronization performance is not stable enough, and white balance is not adjusted before the shooting. As a result, there is generally color cast phenomenon. According to the national standard, the level of digital shooting equipment should not be lower than the professional level.

(4) Recorded sound is not clear, and the sound and picture are not synchronized.
The device that used to record sound is not professional, and do not use professional level microphone when filming. Besides, the volume of recorded sound is often distorted and unstable.

(5) Teacher's clothes usually cause stripe images.
In many cases, the color of teacher’s clothes is not suitable and cause chromatic aberration or stripe images.

Aimed at the above problems and other issues that affect the video effect, this paper proposes an effective production method and process, which sums up the key technologies and precautions of quality video open courses from our practical experiences.
PRODUCTION PROCESS OF QUALITY VIDEO OPEN COURSES

Preparation

The teacher of the quality video open course should contact with the recording staff of the shooting studio in advance to determine the recording date and venue, learn the recording requirements and precautions, prepare the lesson and PPT courseware according to the requirements, prepare the clothing and so on[4].

To be familiar with the circumstance, the teacher should get to the studio 30 minutes before the shooting, and two camera staff should come to the studio in advance too. The recording equipment, lighting and air conditioning should be opened, so that the teacher can test the PPT courseware.

Recording Stage

A variety of recording equipment, lighting and air conditioning should be opened 30 minutes before the shooting time. The equipment parameters should be initialized according to the technical requirement of corresponding recording course [5].

All staff should get to the recording studio according to the planned time. The teacher should arrive at the studio 30 minutes early to make-up, test PPT and do other preparatory work. In addition, the teacher should communicate with the staff if interaction teaching activity is adopted in the course.

When arranging seats for students, the seats in front row have the priority to be arranged. Students should dress neat, and try to avoid wearing dark clothes. Girls should not loose hair on the shoulders. During the shooting process, students should turn off their phone, keep quiet and maintain a good mental state.

During the recording process, teachers should face the camera and keep a line of sight at the main camera. The description and explanation of the teacher should be loud and clear, and he should always maintain a good standing posture. During the teaching process, teachers should not move in the studio, and the duration of each course should not exceed 45 minutes. When the students answer questions, the answers should be clear, concise and well-organized.

After the recording, the recorded files is copied from the camera, and then shut down the lights and equipment in the studio.

Post-editing

Firstly, teachers review the teaching contents to ensure that they are scientific and normative. If there is a problem, it should record in time for subsequent modification. Secondly, the video is edited frame-by-frame (25 frames per second) by the non-linear editing system according to the reporting requirements and the point-in-time marked by the teacher. Next, the video is transformed into a general file format. After being reviewed by the teacher again, if there is no problem then design and make the beginning and end of the open course. After adding the beginning and end, the video is trans-coded and outputted to the specified format according to the reporting requirements.

Lyrics are an essential element of quality video open course, which is usually inputted by the teacher, and the content is what the teacher said in the course. After inputting, the lyrics file (SRT) should send to the technical staff.
After all the processes above are completed, the video file is burned to CD, and corresponding cover page is designed and printed for the CD.

THE REALIZATION OF THE KEY TECHNOLOGY IN THE VIDEO

In order to make high-quality video open course, key technologies in quality video open course production are summarized in the following:

Lighting Design

In order to achieve the effect of lighting arrangements, a movable track where all the lights can be installed is used. 4 × 36 W trichromatic cold light is used for the background light layout, which can light up the rear area evenly without significant cross-shadow. 6 × 36 W trichromatic cold light is used as backlight to obtain clear profile, and the three-dimensional effect of the view is strengthened. 6 × 36 W trichromatic cold light is used as the main light, so that the light on the teacher’s face could distribute uniformly and the view is clear and natural.

The white balance settings of the cameras should be consistent, and the aperture and gain of the cameras should be adjusted according to the environment to ensure the details can be shown even the environment is too bright or too dark. Specifically, when the ambient light is too bright, the aperture size can be adjusted; but if it is still very bright when the aperture is very small, the gain must be reduced. Similarly, if the environment is very dark, and it could not improve even after adjusting the aperture, then we could try to adjust the gain. Note that if the gain becomes too large, it will produce noise.

Improve the Quality of Recorded Sound

The teachers wear the tie clip microphone during the recording. There are six hanging microphone for recording the voice of the students, and the arrangement of hanging microphone is shown below:

![Figure 1. The arrangement of hanging microphone.](image)

Layout Design for the Cameras

Camera stands can be divided into host position and student position. The host position has a panoramic view and close-up view. The student position is mainly used to take pictures of the interaction between teacher and students. In selecting shooting
scene, the platform should in the main scene, also should note that when shooting teachers and students interact, the King do not close to the scene than the far vision.

The panoramic plane should not be zoomed, and the panorama of the classroom should be displayed at the beginning and the end of the course [6]. Students’ mental outlook can be shot by pushing, pulling, shaking and shifting the camera track.

It’s better to shoot line-by-line, so as to ensure the quality of subsequent editing. A possibility of dead angle still exists even though there are three cameras. Therefore, some more shots should be taken in the latter part of the shooting process in case of need. Sufficient material is very important, which can reduce the burden of the late production. The lens in the shooting process must be in proper perspective.

**Edition Techniques**

A complete quality video open course comprises three parts, i.e., beginning, main contents and end. The length of beginning should not exceed 10 seconds, which mainly include the school logo, the title of the course, the name, major and professional post of the teacher and other basic information. The end part includes information such as copyright, production units and recording time.

**BEGINNING SECTION**

The beginning is the most important part of the quality video open course, because the picture and sound effects can arouse the audience's attention. We use software Adobe After Effects to produce the beginning part, by which we can use virtual special effects and background animation to enhance the video effect, and texts are also added to show the teaching topic of the open course.

**MAIN CONTENT and END SECTION**

The main contents and end are edited in EDIUS software. During the editing process, the camera pictures are switched according to the actual situation of the course. The multimedia courseware used by the teacher in class should not be shot separately. It can be directly made into JPG picture or animation according to the aspect ratio of the camera, and inserted into the corresponding position of the video. However, the time of multimedia courseware should be planned to ensure the display of multimedia content is complete and clear.

It should also make full use of the images taken by the mobile station to enhance the vivid effect of the course. Perfect match of pictures and audio is also very important, and dislocation should be avoided [7].

**ACKNOWLEDGEMENT**

The research was financially supported by self-determined research funds of CCNU from the colleges’ basic research and operation of MOE (NO. CCNU15A02006).
REFERENCES