

Research on the design and production of videos in micro-lecture for colleges and universities

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Abstract

Micro-lectures arise with the development of educational informatization, which allows learners to use the fragmented time to complete the learning. As the core element of micro-lectures, high-quality videos are crucial for micro-lectures. This paper firstly elaborated the definition of micro-lectures. According to the means to produce the micro-lectures, they were divided into four groups, including videos based on screencap of PPT, videos based on animation, videos based on course videos and videos based on green screen matting and PPT. Finally, four suggestions were introduced for the production of videos in micro-lectures, which can provide a reference for college teachers to make videos for micro-lectures.

Keywords

Educational informatization; teachers in colleges and universities; videos in micro-lectures; design and production.

1. Introduction

The rapid development of information and technology provides technical support for the reform and informatization of education. "The ten-year development plan for educational informatization (2011-2020)" released by the Ministry of Education of the People's Republic of China in 2012 points out that promoting educational modernization with educational informatization is a strategic choice for the development of China's education and we should make full use of the advantages of information and technology by deeply integrating them into education to improve the quality of education. It is obvious that books and textbooks cannot meet the needs of informational teaching. Teachers should make full use of various teaching tools (e.g., the Internet, the high-quality teaching platform, the discipline teaching tools) to integrate teaching resources, improve teachers' informational ability and innovate classroom teaching mode, so as to improve teaching effect. Micro-lectures arise with the development of educational informatization. Micro-lectures are appreciated by many learners because they are short and small as well as applied by college teachers for assisting teaching, meanwhile, the teachers, in turn, participate in the research of micro-lectures.

2. Definition of micro-lecture

The academic community has not yet reached a consensus on the definition of micro-lecture. In China, Hu (2011) defined micro-lecture as the combination of teaching and learning resources with teaching video as the main format that can reflect teachers' teaching and learning activities in a classroom and the resources is designed for a certain knowledge point in accordance with the New Course Criterion of China [1]. According to Jiao (2013), micro-lecture is a short and small online teaching video with the goal of explaining a certain knowledge point [2]. The viewpoints of Li (2013) thought that micro-lecture is a small course in the format of micro-video that lasts less than 10 minutes and has clear teaching objectives by focuses on illustrating an issue [3]. Different scholars give the definition of micro-lecture from the perspective of their

own practice and research. Although they have not reached a consensus, it is not hard to find the important role of micro-video in micro-lectures. Moreover, Wang (2014) believes that the core element of micro-lectures is micro-video [4]. Therefore, to give full play to the role of micro-lectures, it is necessary for college teachers to design micro-videos that can meet learners' learning needs, fully explain teaching knowledge points and achieve teaching objectives according to their own information technology ability.

3. Types of micro-lectures video

Micro-lecture videos can be classified from different perspectives. In this study, we mainly classify the videos into the following four types according to their production methods. The four types are screencap of PPT, videos based on animation, videos based on classroom recording and videos based on green screen matting and screencap of PPT

The screencap of PPT is the simplest operation and one of the most widely used methods by teachers. Teachers only need to prepare a laptop, PPT, microphone and headphones and use some software to record the micro-lesson video. Teachers can record the screen in a relaxed environment avoiding the tension of facing the camera. After the recording, teachers can cut the recorded video, add subtitles and background music to make a complete micro-lecture video.

Videos based on animation are relatively complicated, which requires that teachers have a high level of IT skills, and can use Flash, Premiere, 3D Max and other software to create animation according to their teaching objectives. The animation can vividly show the knowledge in front of students, or present a series of knowledge points to students step by step, thus helping students better understand the knowledge and improving the learning effect. Compared with the screencap of PPT, the animation is more attractive. Therefore, teachers can make animated videos to support the teaching.

Compared with the screencap of PPT and animation videos, videos based on the classroom recording require more manual labor and material resources. Teachers and students need to prepare for the recording in advance, and the videographers need to set up the camera according to the teachers' needs, such as taking the scene of teachers, students and blackboard-writing. It is also needed to take close-ups of the interaction between teachers and students. Therefore, classroom recording usually needs that the videographers have rich experience in filming. To complete a micro-lecture video, editing of the video is needed, which includes noise reduction, video screen processing, etc.

The combination of green screen matting and the screencap of PPT is also widely used for making a micro-lecture video. In this way, students can see not only the image of teacher, but also the content of the lecture, which can give students the intimacy of face-to-face teaching. The teacher usually records the videos in the green screen studio, and the crew should set up the camera and the light in advance, and tell the teachers some matters needing attention, such as what to wear and the speed of speaking. The crew also needs to help the teacher to remove the green screen and match the corresponding virtual background after the recording, and synthesizes it with the teacher's lecture PPT to complete the video.

4. Suggestions for making micro-lecture video

4.1. Attaching importance to the teaching design of micro-lecture video

As the core element of micro-lectures, the teaching design of micro-lectures video has a great impact on the learning effect of students. A micro-lecture video without teaching design is hard to stimulate students' ability of independent thinking and exploration, while too many micro-lecture videos can aggravate students' learning burden and cause students to lose interest in

learning. Although the micro-lecture video is short, it is working as a whole. Therefore, it should not be produced by cutting a long teaching video into many short slices. Instead, good design and editing are needed. Teachers should design a good video script in advance, in which the teaching objectives and key points should be clarified. Teachers also need to design the switching of each scene, so that the teaching process is complete and in stages, and further improve students' understanding of the teaching contents.

4.2. Improving teachers' informational ability

The presentation of micro-lecture video is subjected to teachers' informational ability. Teachers with high-level informational abilities can usually make good micro-lecture videos. However, for teachers who do not major in information and technology or some older teachers, it is difficult to master professional recording and editing software. As a result, the beauty and artistry of the micro-lecture video made by them are often unsatisfactory, which cannot attract students' attention. College teachers should improve their informational ability as much as possible within the scope of their own ability. This can be implemented through self-study or participating in information and technology-related training. In this way, teachers can better present micro-lectures to students and promote students' learning. Micro-lectures are used for assisting teaching and learning, therefore, the goal of improving informational ability is to cater for teaching, not just to pursue the improvement of technical level.

4.3. Choosing proper topic for the micro-lecture

When making micro-lecture, teachers should fully consider the characteristics of subjects, and determine the topic of micro-lecture video scientifically. Teachers should investigate the learning characteristics and psychological state of students, and choose topics that can meet the needs of learners and is easy to be accepted. Particularly, it is important to avoid redundant boring and tedious content in the micro-lecture video. Meanwhile, teachers should refine the knowledge points of the contents, select several key points that are suitable for presentation in a micro-lecture. The key points can be important and difficult points, confusing points, or extra-curricular extensions. Teachers should integrate micro-lecture videos scientifically into the traditional classroom by considering students' characteristics, teaching objectives and web-assisted resources. The micro-lecture videos should play an important role in helping students grasp the key points of the courses, stimulating students' interest and enthusiasm, and eventually promoting the application of micro-lectures in actual teaching.

4.4. Set up professional team and repositories

At present, most of the teachers in universities make micro-lectures alone or with the assistance of technicians in video production, and few of them make micro-lectures through teamwork, which can cause duplication of resources and waste of teachers' time and energy, and is adverse to the sharing of high-quality micro-lecture resources. Therefore, building a professional production team and high-quality micro-lecture resource library is especially important for the development and application of micro-lectures. Team members should be composed of the leader of the subject, professional teachers, and educational technicians or teachers proficient in IT. Teaching design is in the charge of the leader and professional teachers and the micro-lectures are developed by teachers with the assistance of technicians. By setting up a high-quality micro-lecture resource library, establishing a co-construction and sharing mechanism of micro-lectures, micro-lectures can be developed in the direction of thematization and serialization and benefit teachers and students.

5. Summary

Micro-lectures arise with the continuous reform of teaching informatization. To play a good role in teaching, choosing appropriate topics and professional and systematic design are crucial for micro-lectures. Teachers should choose a suitable way to develop micro-lesson videos and apply them in classroom teaching in a proper way to help students learning. In addition, teachers should learn new technologies actively, catch up with the progress of teaching development, continuously improve their informational ability, and investigate teaching approaches in the new era to meet the needs of informational teaching and cultivate more innovative talents.

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