

The Theory Foundation and Production of Micro Video Teaching Resources

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Abstract. The present form of teaching resources is the direct factor that influences the students' learning efficiency. In this paper, based on the production process of micro video teaching resources, to provide support for education and teaching. Based on the theory of constructivism, micro learning theory, audio-visual education theory and the theory of goal orientation, making micro video teaching resources; Compared the production tools of Camtasia Studio, Adobe Captivate, BB Flashback, and the screen recorder; Design of micro video production steps, and started the micro video recording process. In order to ensure the validity and practicability of the micro video teaching resources, we need to constantly improve production efficiency.

Introduction

Micro video teaching resources is the product of modernization, with the rapid development of science and technology, the mass media becomes more and more popular, with micro video as a learning tool in the teaching activities become more and more popular. People's way of thinking, learning style and cognitive style are gradually changing [1]. Micro video teaching resources promoted the development of education and teaching. In educational circles attention, it is short and pithy, concise, anytime, anywhere viewing characteristics greatly expanded the space of knowledge transfer [2]. Micro video teaching resources producing effect is directly linked to the learner's learning efficiency. In order to ensure that micro video teaching resources can really benefit learners, we must develop micro video teaching resources that meet the needs of learners. Therefore, the theoretical basis for supporting production to meet the micro video teaching resources of the learners' cognitive rules and cognitive level, provide a variety of effective learning for learners.

The Theoretical Basis of Micro Video Developing

Micro video teaching resources have the characteristics of miniaturization and teaching, we must follow certain teaching rules and teaching standards. Choosing the right theory as the reference foundation, designing and making the micro video teaching resources, can guarantee the teaching value and practical value of micro video teaching resources. In order to maximize the value of micro video teaching resources, determine the theoretical basis for the production of micro video teaching resources:

Constructivist cognitive theory. The learners acquire knowledge from the micro video teaching resources, and form a new cognition based on the previous knowledge construction, and form a new construction [3]. Micro video teaching resources to provide text, pictures, sound to create a new learning environment for the learners, increase learning fun.

Micro learning theory [4]. Learning content fragmentation, learning media miniaturization led to the high availability of micro video teaching resources. The development trend of learning in the information age is the concentration of complex knowledge, the media of learning process, and the random learning place.

Audio visual education theory. For the same knowledge, learners use auditory memory efficiency that is much higher than the simple using of reading, reading, writing [5]. The combination of visual

and auditory, can achieve the best memory effect.

Goal oriented learning theory. The learner according to set goals to carry out the learning process, to ensure the orderly and purposeful learning. Judging from the learning results to determine the rationality of the goal, and then adjust the learning objectives, optimize the learning process, to achieve the best learning results.

Micro Video Production Tools

Micro teaching resources development video by Web browser or Java platform, but also through the video recording software for the producing [6]. Recording software can achieve the production of video images, sound and format settings and other functions, easy to operate, learn and use and widely loved by the video producer. The following is a simple comparison of five popular video recording tools available in the market, as shown in Table 1.

Table 1. Comparison of video recording tools

Comparison Name	Function description	Characteristic	Deficiency
Camtasia Studio	Supports any display mode for simultaneous recording of screen images and audio. Video clips, modify, decode conversion, and add special effects.	High quality smooth video. Reconstruction of the time axis can add any number of multimedia tracks. Flexible custom output configuration.	Recording and exit will have short black.
Adobe Captivate	Automatic recording screen action to produce interactive Flash simulation. Add text title, narrative and electronic learning interactive action.	Able to create complex scenes and provide feedback. Easy to operate, only by clicking the mouse can add text title, description, etc.	High quality music, there will be a certain loss of quality.
BB Flashback	The screenshots results timely saved as flash animation or video file type AVI.	Support network camera recording. Support PIP function. Generate a variety of video formats.	Higher requirements for computer hardware equipment.
Screen recorder	Record video clips, videos, tutorials, courseware, etc.	Simple and convenient operation.	Does not support the conversion to.Exe file.

Five kinds of video recording tool in functional description, two Camtasia studio and adobe captivate software function was significantly higher than that of the other three, of which Camtasia Studio software focuses on record screen action and video editing, and adobe captivate software mainly used in interactive video recording. On the features, in addition to screen recorder, other four recording tools have more features. There are deficiencies in each of the recording software. In the choice of recording tools, it should be considered from many aspects, to select the most suitable for their video recording tool.

Micro Video Production Steps

The fabrication of micro video teaching resources mainly from two parts: micro video and teaching resources. Teaching resources is forming the main source of knowledge construction, is the main body of learning for the learners, which have a direct impact on learning objective and subjective attitude; micro video is the manifestation of teaching resources, is the carrier of learning resources. In order to make the teaching resources for learners to form micro video, we must accord to certain

steps. Combined with the previous steps, and further improve, summed up the concrete steps as shown in table 2.

Table 2. Micro video production steps

Step	Specific operation	Remarks
Step 1	Selection and installation of production tools	Select the appropriate video production software
Step 2	Making material	Select the material related to the content of the study
Step 3	Make a presentation	Design and make in the learners' perspective
Step 4	Recording screen and sound	Based on the first two steps to carry out the implementation of micro video recording
Step 5	Edit video	Carry out the picture, sound editing and integration
Step 6	Modification and improvement	Test and improve

Step 1: Choose the software to make micro video, the software must coincide with your computer's configuration, to avoid incompatible phenomenon that cannot be installed, then download and install, in order to follow the micro video production process smoothly.

Step 2: Production and processing for all kinds of micro video material: picture material, background material, PPT template material etc. Selecting according to the characteristics of the text and the learners, which fully service to the learner.

Step 3: Analysis of teaching content, and design the teaching resources. The typical example to the students, so that students can better understand the content of the teaching material. According to the teaching objectives of this unit set exercises, so that students answer. The answer and the question is relatively light, clear and clear. This help students to further understand the new knowledge, strengthen the students' understanding and memory of the content.

Step 4: Make all the materials ready, then begin micro video recording. Recording is divided into two parts, the first is the presentation of the recording, showing a micro video in the picture; followed by the sound part of the recording, that is, the teacher taught audio.

Step 5: The screen and audio to be integrated, and the screen or audio to the appropriate cutting. After the clip, select the appropriate storage format, save the video.

Step 6: The recording of a good micro video for the late processing, modification and improvement.

Micro Video Recording Process

Micro video and the recording results of the teaching resources, is media to present the content to the learners. The carrying media of teaching resources is PPT, as the carrier of the teaching content, the text and picture information are designed in the PPT software, and then the video recording software is used for recording. Recording process can be flexible operation, there are two kinds of recording methods, the basic process as shown in Fig. 1.

As shown in Figure 1. One is to start the recording software, then choose to record a PPT, open to record the teaching resources in PowerPoint, click on the start of the show, came to the teaching resources of the projection screen, then click on the lower right angle recording software small window in the record button, and began recording. You can choose to record the size of the screen in the recording process, choose whether to open the camera or audio recording, stop recording after the click button. The second method is to open PPT software, and then open to record the teaching resources, click on the start of the show, and then open the recording software, click start recording, the same in the recording process can choose to record the screen size, the opening state of the camera and audio, finally click the stop button, stop micro video recording.

Conclusion

Teaching quality and students' learning quality are affected by various factors, the process of teaching resource selection is an important factor to determine the effect of students' learning, and

the presentation of teaching resources is the main embodiment of the process of learning. Education informationization is becoming more and more common, with micro video as the carrier of teaching resources gradually introduced to various colleges and universities, micro video teaching resources is product of the times, is a mentor for students to acquire knowledge. Faced with the development trend of micro video teaching resources miniaturization, personalization and interaction, strengthening the practicality of micro video teaching resources is a problem that must be considered in the production of micro video teaching resources. In the design, not only to improve the students' learning interest as the starting point, but also to fully consider the differences of students. Micro video production is the key to attract the students' attention and interest in learning. Affected by various factors, micro video teaching resources need continuous refinement and improvement, summing up from the practice, to strengthen practical and effective of micro video teaching resources.

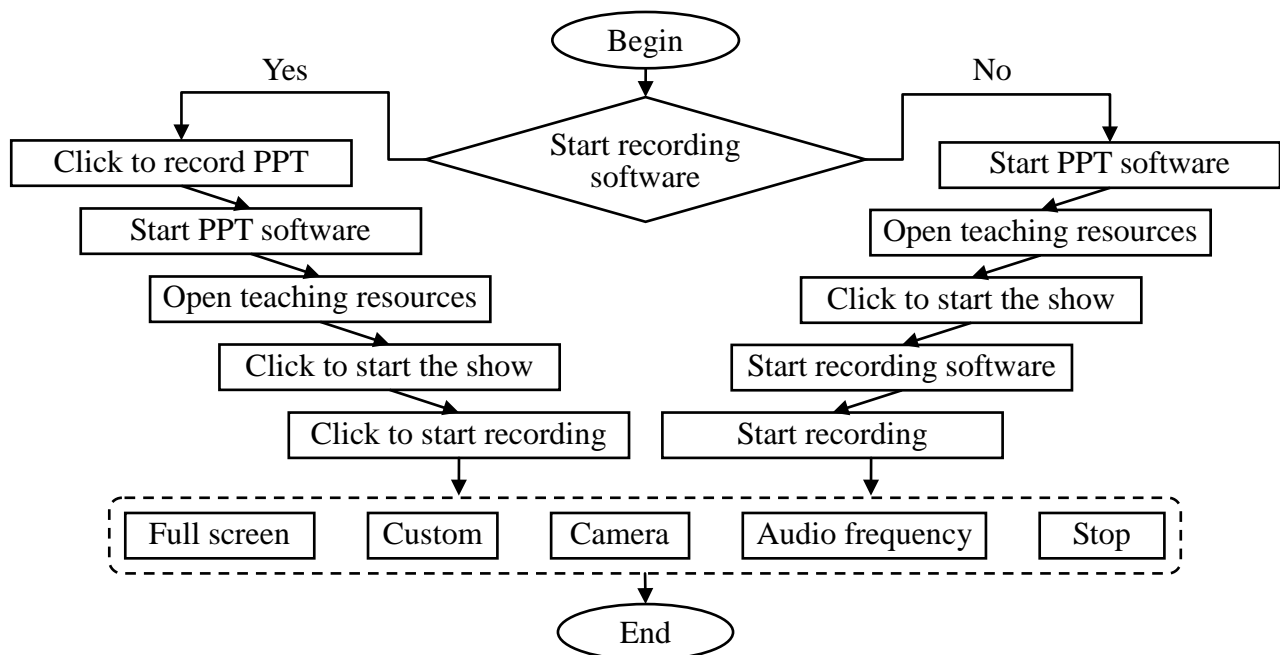


Fig. 1. Micro video process

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