Constructing a Student-oriented Teaching Model Involving Micro-Course Online Videos-Based on Specialized PPT Making Course

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Abstract

In a student-oriented teaching model (hereinafter referred to as “SOTM”), the students are the focus, and actively acquire knowledge under the instruction of the teacher. However, traditional teaching models are monotonous, resulting in many problems with the teaching process, while a SOTM involving micro-course online video scan work otherwise and facilitate the students in acquiring knowledge better. Therefore, it is of great importance to construct a SOTM involving micro-course online videos.

Keywords: Student-oriented, Micro-Course online video, Teaching model and PPT.

1. INTRODUCTION

With the development of society, modern education has increasingly relied on the information technology. Under such a background, traditional teaching models, which fail to comply with the student-oriented teaching principle and are not favorable for the students to fully grasp the knowledge, can no longer meet the demand of modern education. Nevertheless, integration of micro-course online videos into traditional teaching models can better involve the students as the focus of classroom activities, enable them to acquire knowledge at any time and any place, and effectively increase their learning ability and knowledge.

2. LITERATURE REVIEW

After conducting a research and an investigation on the student-oriented teaching principle, Li Zhuo (2014) found out that students have high expectations on it and anticipate more relaxing and active classroom activities, and more flexible and interesting teaching methods rather than monotonous teaching models (Li, 2014). Based on practical researches on micro-courses, Jin Yan (2014) summed up its basic characteristics and advantages, and designed the basic subjects of computer science accordingly. Her practice proves that integration of micro-courses into the teaching has greatly enhanced the operational capacity of students (Jin, 2014). Wang Tongju (2015) also integrated micro-course online videos into his teaching and practice. But unlike Jin Yan, he introduced such videos into the processes of both previewing and learning, and found that at the end of the semester, the students have greatly improved their problem-solving ability (Wang, 2015). Huang Hong, Wei Chen, and Zou Changwei (2016), from the perspective of researching the role of micro-courses, integrated micro-course online videos into classroom activities to build a three-dimensional teaching model that combines micro-course online videos and classroom instructions, and based on the following evaluation, came to the conclusion that the teaching model involving micro-course online videos can exert significant positive impact on students (Huang et al., 2016). Zhao Guodong, Feng Chen and another two researchers (2016), after conducting researches on the technical characteristics of micro-course development and launching relevant investigations in different colleges, concluded that the micro-courses have exercised great influence on the students, which inspires the design of the micro-course online videos (Zhao et al., 2016).

3. RESEARCH BACKGROUND

In recent years, such new teaching methods as micro-courses and MOOCs have become an integral part of the teaching system, and drawn wide attention from educators. After much teaching practice, some colleges have also chosen suitable reform projects, and encouraged teachers to adopt new teaching technologies and methods by various means. Under such a background, the teachers have gradually accepted and adopted the
micro-courses. However, the key lies in how to design and make use of feasible micro-course online videos. Therefore, it might become an important strategy to enhance the teaching performance to research how to construct and promote a student-oriented teaching model (“SOTM”) involving micro-course online videos.

4. THEORETICAL BASIS

4.1 Student-oriented teaching principle

Unlike traditional teaching models, the SOTM shifts the focus from the teacher to the students, where all teaching activities are oriented on the students who actively acquire knowledge, and great attention is paid to independence and autonomy of the students during the process of learning. Meanwhile, the teacher, as the source of support and instructions, actively encourages the students, and more often gives support than instructions. In this way, the students can attach equal importance to independent learning and cooperative learning, and master the methods and skills of learning apart from grasping knowledge, which is conducive to their development. The model is mainly based on the Constructivism Learning Theory, the core of which lies in the relationship between the students and knowledge. The theory emphasizes that the students should actively build their own knowledge system rather than accept knowledge passively. Besides, the teacher shall emphasize on teaching methods and the problem-solving process, rather than simply give the answer to a question. The theory encourages students to actively explore the unknown world, associate the knowledge with their own experience, and raise relevant questions and bravely challenge the unknown world, thus helping students build the ability to solve problems independently, deepening their impression on the knowledge imparted and enhancing their interest in study.

4.2 The definition and types of micro-courses

Micro-courses originate from the idea of 60-second courses proposed by McGrew, namely, to explain a certain topic or knowledge point in one minute. At present, micro-courses are mainly designed for the core knowledge that are explained in short and pithy videos with a clear structure, and are mainly used as a supporting method for classroom teaching. Micro-courses are featured by integration of online videos, much interaction and great simplicity. In terms of design technology, they can be divided into two types, namely, non-interactive and interactive micro-courses, the latter of which allows interaction and feedbacks. In a broad sense, micro-courses have evolved through four stages, namely, from micro-video, micro-lecture, micro-lesson to micro-course, which are together referred to as the “Four-Stage Teaching Model”. Please see Figure 1 for details.

![Figure 1. Four-Stage teaching model](image_url)

Micro-courses can be designed in various ways. To be specific, there are ten templates, namely, course recording (to record the teaching process of a teacher in real time with a camera), course recording plus screen shot (to record the teaching process and insert PPT during the instruction), PPT screen recording (to have the computer record the PPT played on it), software simulation (to simulate the teaching process with specialized software), role play (the teacher and the students act as per their respective roles), and animation (to make the teaching process into an animation), etc. The function of micro-courses may vary with their types, but their overall
teaching objective is to promote students to master learning methods and enhance their ability to accept the knowledge. This paper focuses on specialized PPT making micro-courses to construct a teaching model involving micro-course online videos and with a simple but clear structure.

4.3 The function of micro-courses

Micro-courses have decided advantages: Firstly, it is fully consistent with the student-oriented teaching principle. With students as the focus, it can bring into better play the initiative of students to learn, so that both the teacher and the students are fully engaged in the classroom activities. Meanwhile, combination of direct instruction and constructivist learning can facilitate teacher-student and student-student communication in the perspective of both time and space, thus greatly improving the relationship between the teacher and the students. Secondly, micro-courses can effectively improve the students’ learning mode, where they can, based on the materials provided by the teacher, do independent thinking, and actively identify and solve the problems involved. Moreover, under the guidance of the teacher, the students can transform learning pressure into motivation, which can enhance their willingness to learn, ability to think independently, and in turn their learning efficiency (Zhang, 2014).

5. TO CONSTRUCT A SOTM INVOLVING MICRO-COURSE ONLINE VIDEOS—BASED ON SPECIALIZED PPT MAKING COURSE

5.1 To make a PPT-based micro-course video oriented on students

PPT is an important piece of Microsoft Office software, and plays a main role in micro-course design, with the design interface shown in Figure 2. The design of a micro-course with specialized PPT takes the following steps.

![Design Interface of PPT-based micro-course](image)

**Figure 2.** Design Interface of PPT-based micro-course

5.1.1 Designing the PPT outline

When making a PPT-based micro-course, the first step is to design the PPT outline to highlight the topic of the course, and the next step is to set up the primary and secondary titles based on the objectives of the course so as to make clear the teacher’s teaching thoughts and the course topic.
The design of PPT master can set the overall background for the courseware and thus enhance work efficiency. 

The master can be applicable to many slides, so the teacher shall include the common modules in the master, such as the topic of the micro-course, markings, date and knowledge navigation. Meanwhile, the master can also contain some background music and relevant videos, so as to make all slides consistent in style(Xv, 2016). Based on an understanding on the function of PPT master, the teacher may, according to the sorted materials and PPT outline, prepare the master, and edit the master interface via the “View Menu” of PPT, when the emphasis shall be put on the first slide, table of contents, transitional slides, the main body and the last slide. After the PPT master is ready, efforts shall be made to develop the PPT courseware through the “New” option under the “Start Menu”. At this stage, the teacher can develop the courseware based on the existing PPT master.

5.1.2 Inserting the Text and Other Materials

When inserting the text into the courseware, the teacher shall pay attention to the font size and color matching. It is common practice to set the ideal font size as the default size, but it is also acceptable to choose any appropriate font size, as long as the slides will not result in visual fatigue of the students but can meanwhile highlight the key information. The teacher can stress some key information via the “Bold” option(Pan, 2015). Moreover, elegance and simplicity of the PPT courseware depend on the materials and PPT material library owned by the teacher. Therefore, when developing the courseware, the teacher shall, based on the teaching content, download relevant text information, pictures, audios, etc. Besides, the teacher shall also match the text with the picture on each slide because similar colors of the text and the pictures will cause visual fatigue. Besides, it is also necessary to cut or zoom (in or out) the materials so as to fit the slide size. At last, the teacher can also add some patterns to beautify the slides, which enables the students to have a pleasant experience when reading the PPT courseware(Guo et al., 2015).

5.1.3 Recording the Micro-Course videos

Recording the micro-course videos is the key to the micro-course design. To this end, the teacher may choose a computer screen recording tool to record the screen actions, such as the Camtasia Studio developed by Tech Smith (hereinafter referred to as “CS”). First, after CS is installed to the computer, the CS plug-in will be inserted into the PPT, and can record the slide screens. During the process of recording, it is possible to adjust the screen size and position to avoid monotony. Click the “Record” option to start recording the screen. When giving instructions, the teacher can use the “Brush”, a built-in PPT tool, to mark any content, so as to highlight the key information and draw attention from the students. Besides, the teacher may also use the “Lens” tool in the lower left corner to zoom in any section of the slide. At the end of the recording, the recorded videos shall be clipped and edited to develop a courseware that is both simple and with key information highlighted. The last step is to export the videos, where close attention shall be paid to any blank frames which will result in blank screen. Please refer to Figure 3 for the detailed micro-course development process.

**Figure 3. Micro-course development process**

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5.2 To Construct a SOTM involving micro-course online videos

There are three elements for constructing a SOTM involving micro-course online videos.

5.2.1 The teacher

First, the teacher shall, before giving instructions, make micro-course videos, including the PPT outline, script, content and technical design. The PPT outline shall include the course name, knowledge points, design ideas and so on. Second, the core of the micro-course lies in its content and technical design, which requires the teacher to understand the key and difficult points of teaching, highlight the knowledge points, and introduce the key points step by step. Besides, the teacher shall also pay attention to the design of the teaching situation, distribution of teaching content, and control over the teaching rhythm, so as to facilitate students' active participation in class. Third, the teacher shall upload the micro-course videos online so that the students can download them before or after the class for the purpose of preview and review, and finish the corresponding assignments online. Moreover, the teacher shall carefully check and evaluate the assignments submitted by students, and eliminate any doubts they have during the study (Qi, 2014).

5.2.2 Classroom activities

The classroom is the main place for the teacher to impart knowledge, so an important strategy for enhancing the students' learning efficiency is to combine active discussions, case study and independent analysis by students during the class, and much practice after the class. To this end, first, the teacher shall have face-to-face communication with the students. The teacher may divide the students into several groups by their characteristics, and assign the same task to each group, so that the students can preview the micro-course videos and have discussions before the class, and demonstrate their discussion results during the class. Meanwhile, the students can also put forward their doubts or suggestions for the teacher, which can facilitate communication between the teacher and the students. Besides, the teacher may also, based on the practical situation, raise new questions to provoke independent thinking among the students, which helps create a more active atmosphere. Second, the teacher may also demonstrate his/her learning experience (e.g. learning skills and methods) via online video and/or PPT, so that the students can accomplish the learning tasks with clear objectives, and achieve twice the result with half the effort. Then, the students can carry out independent inquiry-based learning, when the teacher shall put forward practical problems to inspire thinking among students. Third, under the guidance of the teacher, the students may participate in relevant practice and submit a report on it, while the teacher shall take into consideration the suggestions from the students and answer their questions.

5.3 Points for attention

When integrating the micro-course online videos into the teaching model, first, the teacher shall emphasize the key points through graphic or color-block contrast. Generally speaking, the micro-course videos shall comply with the following order of priority: graphics, tables, phrases and paragraphs. Therefore, relevant pictures can be employed to arouse the interest of students. Moreover, it is NOT acceptable to insert long paragraphs into the PPT courseware; on the contrary, the teacher shall emphasize the key points, and use succinct language and graphics and tables to impart the knowledge. Furthermore, to provide the students with excellent visual perception, the teacher may explain a knowledge point by combining a short text and interesting pictures and icons. Second, the PPT courseware shall be consistent, which means that the teacher shall adopt consistent pattern and format, such as identical word space and line space, rather than design a complicated and dazzling courseware. Third, the teacher may utilize the "Animation Effect" of PPT to make the courseware interesting and eye-catching, so that the students may develop a strong interest in the courseware (Chen, 2016). However, flashy animation may distract the students' attention from the knowledge points, which is not good for their learning. Therefore, the teacher shall only make use of animation effects to highlight the key and difficult points, or to explain the logical relationship, so as to leave a deep impression on the students or enhance their understanding. Of course, to prevent aesthetic fatigue after long-time study, the teacher may add some animation effects to transitional slides, but shall avoid frequent effect change as this may adversely affect the imparting of knowledge.

6. INSPIRATIONS

If micro-course online videos are introduced into the teaching model, the teacher shall change the evaluation
method accordingly. Traditional evaluation methods often attach great importance to the students’ score in the final exam. However, as the teacher is unable to supervise the students during their process of learning via the micro-course online videos, the students’ learning efficiency remains unknown to the teacher at relevant stages. Therefore, the evaluation method shall also be changed to cover such elements as micro-course video learning, exercise, feedback, in-class discussion, idea presenting, practice, and final exam, etc. Please refer to Table 1 for the detailed evaluation elements.

Table 1 Distribution of evaluation elements

<table>
<thead>
<tr>
<th>indicators for performance check</th>
<th>content of examination</th>
<th>Assessment proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro class feedback</td>
<td>1. Micro class listening level</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>2. Degree of practice completion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Degree of problem feedback</td>
<td></td>
</tr>
<tr>
<td>seminar</td>
<td>1. Degree of participation in class discussion</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>2. introduce a question</td>
<td></td>
</tr>
<tr>
<td>practical training</td>
<td>1. practice process</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>2. practical results</td>
<td></td>
</tr>
<tr>
<td>Final assessment</td>
<td>examine</td>
<td>0.3</td>
</tr>
</tbody>
</table>

7. CONCLUSIONS

With the development of information technology, the Internet has become a necessary study tool for students. Thus, the teacher shall, under such a background, construct a SOTM involving micro-course online videos, so as to promote the students’ motivation to learn and enhance their learning interest and efficiency by highlighting the key knowledge points via short and pithy online videos.

REFERENCES