

Applications Research of Micro-Video Education Resources in Flipped Class—Taking the Course of Directing and Producing of TV as an Example

Guan Huang^{1,*}, Yali Peng²

¹China West Normal University, Nanchong, 637009, China

²Wenchang Primary School, Qionglai City, Qionglai, 611530, China

Keywords: micro-video; flipped class; application

Abstract: Through the analysis of the flipped class and the micro video, the paper constructs the model of the flipping classroom teaching of micro video educational resources. Taking the educational technology compulsory course of Directing and Producing of TV as an example, this paper makes an experimental research on the application of micro video educational resources in the flipped classroom. The research shows that the teaching mode based on the micro video in the flipped classroom can stimulate the interest of learning and promote the internalization of knowledge. But the effect is not very significant in the actual operation of students.

1. Research Background

Directing and Producing of TV mainly teaches students the principles, methods and processes of making TV teaching materials, and trains students to make corresponding television teaching materials according to their teaching needs [1]. In this course, the students learn the theoretical knowledge in the final through the film and television works to be produced. However, the teaching status of this subject is not optimistic and facing many challenges. The way of teaching is obsolete, and the learners lack the motivation of learning. When the teaching time is insufficient, the learners cannot grasp the comprehensive knowledge of the system. The lack of experimental equipment, the learners cannot exercise the practical ability.

Directing and Producing of TV teaching material is a combination of theory and practice of the course, but due to the limitation of equipment and experimental school class of backward students often theoretical knowledge is not solid and practical ability is not strong, the lack of camera experimental needs, experimental courses often group learning, usually a group of four people we can't guarantee that every student can understand the structure and using method of the camera, and flipped classroom teaching resources based on the micro video, before the class teacher will be related to the theoretical knowledge and experimental equipment operation method is designed for micro video [2].

2. Teaching Model Construction of Flipped Class Based on Micro-Video

In accordance with the requirements of the syllabus and the arrangement of the teaching plan, the teachers analyze the teaching content and make up the difficult and difficult points of the teaching. The analysis of the characteristics of the learners will subdivide the relatively small and complete knowledge units in the heavy and difficult points. Then the Micro video is created by using the camera device and the post production software, such as Edius. Students watch the new knowledge of micro video before class and record the difficult problems to communicate with the teachers and students in the class.

The teacher first collected students' questions and pick out the typical problems, and then organize the students to communicate with each other in the form of group of teachers, students explore the issues in the process to provide appropriate guidance to avoid the blind students to discuss, after the discussion please student representatives published on the issue of teachers view and analyze

problems. To guide students to review knowledge of deep thinking and problem solving, students summarize perfect knowledge system [3].

After finishing class, students use their knowledge and skills to complete the learning tasks assigned by teachers, and the works completed by commented by teachers and classmates, students collate and modify their works, and share them through the network platform [4].

3. Applications of Micro-Video Education Resources in Flipped Class

3.1 Experiment design

Research purposes: from the three aspects of learners' emotion, attitude, knowledge and skills, to test the implementation effect of micro video education resource flip classroom teaching mode.

Research methods: literature research. By consulting books, periodicals and books of various teaching models, this study forms an objective understanding of the concepts, categories, tests and applications of teaching models. Collect and collate the literature to grasp the latest development results of the flipped class and its teaching model, and the application results of the overturned class in various fields.

Questionnaire survey method. In the study, take the questionnaire survey on the emotional attitude of grade 2013 students before the experiment began after the end of the experiment, according to the actual situation of "directing and producing" television teaching material teaching, design and preparation of the questionnaire to investigate two classes to learn different ways of teaching, emotional changes.

Experimental research method. The project adopts observation mode, all students of grade 2013 in China West Normal University of education technology is divided into two classes, an experimental class (using the flip classroom teaching mode) and a normal class (using traditional teaching mode) before the start of the experiment to all students in before the test, the aim is to understand the basic situation of them. After 5 months' experiment, we carried out the post test, strictly controlled the variables in the experiment, collected data and analyzed the results in the process of experiment, and came to the corresponding conclusion.

Research hypothesis: (1) the teaching mode based on micro video educational resources can improve the students' interest in learning. (2) the teaching model based on the micro video educational resources can improve the students' performance. (3) the teaching model based on the micro video educational resources can improve the students' practical skills.

Research variables: the independent variables in experiment are micro video flipped classroom teaching mode and traditional classroom teaching mode. Variables are teaching contents, teaching hours and teachers. Variables are students' emotional attitude, academic achievements and practical skills. The experimental class adopts the teaching mode of micro video flipping class, and the traditional teaching mode is adopted in the control class. Students' emotional attitude is investigated through questionnaires. Their academic performance is obtained from usual homework and final exam results, and students' practical skills are evaluated by students' work quality.

The object of study: in this study, China West Normal University 2013 junior next semester "professional courses in directing and producing television teaching materials for educational technology specialty 124 normal college students as the research object, the course was randomly divided into two groups, is divided into two classes, each class respectively 62. An experimental class and a control class, and after the pre-survey, two classes of learners are no systematic study of editing and production of television, can think of learning the same starting point, two learners take the same teacher, the same teaching content teaching methods, small group learning. In this study, the traditional teaching model was used in the control class, and the classroom teaching mode was carried out in the experimental class using the flip research based on the micro video education resources.

Research process: according to the characteristics of the micro video educational resources flip classroom teaching mode and the teaching material of TV textbook editing and production, the author designed the teaching process of this course, which includes three links before class, after class and

after class. The transmission of knowledge, the internalization of knowledge and the transfer of knowledge are realized. The specific situation is shown in Table 1.

Table 1. Teaching Flow Table

Sector	Teacher's behaviors		Students' behaviors
Knowledge transfer before class	<p>(1) according to the arrangement of the teaching plan, teachers collate the difficult and difficult points of the curriculum of "television textbook compilation and production" and subdivide the important content into the knowledge unit.</p> <p>(2) classifying subdivided knowledge units into conceptual knowledge (theoretical knowledge) and practical knowledge (operational skills knowledge).</p> <p>(3) according to the category of knowledge and the nature of the teaching content, the corresponding teaching micro video is made.</p> <p>(4) the production of micro video is posted on the learning platform for students to download and learn.</p>		<p>(1) students use various mobile terminals (computers, cell phones, flat panels, etc.), and social tools (QQ, e-mail, etc.) to get teaching micro videos uploaded by teachers, download and do autonomous learning.</p> <p>(2) when students watch the teaching of micro videos, they use mind map to sort out knowledge in micro videos and record problems at any time, so that they can have communication discussions in subsequent classes.</p>
Internalization of knowledge during class	Propose question	Collect the questions raised by the students and select the typical questions to let the students talk about it.	The classification of problems that are not understood before class are not understood.
	Collaboration	<p>(1) the students are divided into groups, and 4 people are a group to exchange the typical problems listed.</p> <p>(2) teachers visit the group to exchange the situation and give help when necessary to guide students to discuss the problems correctly.</p> <p>(3) according to the learning tasks arranged before the class, the teachers randomly select the students to show the content of the study and score.</p>	<p>(1) the group explored the questions raised by the teacher and sent representatives to express their views on the question.</p> <p>(2) go to the stage to complete the operation required by the teacher.</p>
	Guidance	<p>(1) summarize the opinions expressed by the group representatives, guide students to review the learning knowledge, analyze the key points of the problem, and let the students think deeply and solve problems.</p> <p>(2) comment on the operation of the students, point out the problems in the operation, and emphasize the matters needing attention in the operation.</p>	<p>(1) to think seriously about the difficult and difficult problems, and to learn how to solve the problem according to the analysis of the teachers.</p> <p>(2) combine the knowledge of new learning with the knowledge that has been learned and build a knowledge system.</p>
	Summary	The teacher summed up the lesson and arranged the learning task after class.	The students rethink their knowledge and apply the knowledge to the practice to complete the work.
Post - class knowledge transfer	<p>(1) collect and collate the works completed by the students.</p> <p>(2) to sum up the problems encountered by the students in the process of completing the work, and to score the scores in groups.</p>		<p>(1) collate and modify the works.</p> <p>(2) sharing works through the network platform and exchanging experience with each other.</p>

3.2 Application result analysis

Analysis of students' emotional attitude: Based on the micro video resources flipped classroom teaching mode is helpful to improve the independent learning ability, team cooperation ability, arouse

learners' interest in learning, the survey results show that 48.39% learners believe that this teaching mode is helpful to improve the ability of autonomous learning and help learners think 32.26%.

Analysis of academic achievement: in this study, we used the independent sample T test to analyze the scores of the experimental class with micro video resource flipped classroom teaching mode and the traditional teaching mode. The mean, standard deviation and T test were shown in the following table. The experimental class that uses micro video resources to flip the classroom teaching model is higher than that of the control class that adopts the traditional teaching model.

Table 2. Statistics

	Class	N	Mean	SD	SE of mean
Final score	0	61	78.6066	8.93547	1.14407
	Control	61	72.5574	12.22910	1.56578

Table 3. Independent sample test

	Levene test of variance equation		T test of mean equation						
	F	Sig.	t	Df	Sig. (bilateral)	Mean difference	SE	95% confidence interval of difference	
								lower limit	Upper limit
Final result variance is equal	7.447	.007	3.119	120	.002	6.04918	1.93921	2.20967	9.88869
variance is not equal			3.119	109.856	.002	6.04918	1.93921	2.20606	9.89230

In terms of skills, scoring according to the learner after the completion of the works, using independent samples T test, in the process of teaching, divided into two stages. The first stage requires the evaluation of students, students according to their knowledge group shooting teaching film, second stage in the first phase of the evaluation work summary the documentary film. The results of the work of the teaching film are as follows:

Table 4. Statistics

	Class	N	Mean	SD	SE of mean
First score	Experiment	61	81.5738	8.85524	1.13380
	Control	61	81.5574	8.14151	1.04241

Table 5. Independent sample test

	Levene test of variance equation		T test of mean equation						
	F	Sig.	t	Df	Sig. (bilateral)	Mean difference	SE	95% confidence interval of difference	
								lower limit	Upper limit
First result variance is equal	2.132	.147	.011	120	.992	.01639	1.54017	-3.03304	3.06582
variance is not equal			.011	119.162	.992	.01639	1.54017	-3.03325	3.06604

The average score of the experimental class was 81.57, and the average score of the control class was 81.55. After the completion of the first work, students exchange their works with each other in class, teachers comment on each group's work, guide the problems in each group's works, and reflect

on the students. At the same time, we began to prepare for the filming of second documentary films. The analysis of the performance of the documentary works is as follows:

Table 6. Statistics

Class		N	Mean	SD	SE of mean
Second score	Experiment	61	83.2951	8.86819	1.13546
	Control	61	81.0656	7.91174	1.01299

Table 7. Independent sample test

	Levene test of variance equation		T test of mean equation						
	F	Sig.	t	Df	Sig. (bilateral)	Mean difference	SE	95% confidence interval of difference	
								lower limit	Upper limit
Second result	3.272	.073	1.465	120	.145	2.22951	1.52165	-.78325	5.24227
variance is equal			1.465	118.470	.146	2.22951	1.52165	-.78365	5.24266
variance is not equal									

Acknowledgement

This research is the periodical result of the Project of the Talent Research Foundation of China West Normal University (Grant No. 17YC203) named “Model Construction and Applications Research of Innovative Learning of Wisdom Class under Information Environment”.

References

- [1] Liu Xiaojing, Zhong Qi, Zhang Jianping. The Application Research of Flipped Classroom Model in the Course Teaching of Data Structure [J]. China Educational Technology, 2014(8): 105-110.
- [2] Zhao Chengling, Xu Jingjing, Liu Qingtang. The Designing and Exploring of Flipped Classroom Based on Micro-video Resources [J]. Modern Educational Technology, 2014, 24(12): 70-76.
- [3] Xie Guilan. Analysis of five relationships between MOOCs, flipped classroom micro-lecture and micro-video [J]. Education Science, 2015, 31(5): 43-46.
- [4] Xie Mengmeng. The Design Principles of Micro-Video Production and In-Class Activities on the Base of Flipped Classroom [J]. Overseas English, 2016(3): 80-83.