A Study on Digital Media Technology Courses Teaching Based on Flipped Classroom

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Abstract This essay, beginning with the problems existed in digital media technology course, introduces the flipped classroom, and then establishes the digital media technology course teaching mode based on this theory. And finally, an empirical research of flipped classroom teaching based on "web page design and production" is conducted. And according to the study, flipped classroom is appropriate for digital media technology course, because it helps inspire students' enthusiasm and initiative, train their practice ability in computer media technology. The flipped classroom provides a new method for traditional teaching reform.

Keywords: *flipped classroom, digital media technology, teaching mode*

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1. Introduction

Digital media technology course, such as flash, Photoshop, Dreamweaver, Premiere, 3DMax and so on, constitute an important part curriculum system developing digital media technology professionals .After these courses, students are able to be familiar with basic operation related computer software and then to design, produce, spread digital product by software tools as well as be able to innovate technology. However, the present situation of curriculum teaching is not good enough. Many courses are like skill-training course, in which, the emphasis is very much on basic function instruction and operation demonstration, and students become familiar with the software by some simple copy exercise [1]. This can obviously not train students who satisfied the demand of solving practical product problem and comprehensive project implementation. Reform in media technology course is urgently needed.

2. Main Problems in Digital Media Technology Course Teaching

(1) The teaching mode is dull [2]

Because of lacking such resources as equipment and qualified teachers, "two-step" teaching strategy is often adopted in these courses. In the first step, theoretical lecture and operation demonstration are given in multimedia classroom. And in the second step, students do computer practice in a computer room. In this mode, theoretical teaching and practical training is split from each other. And for all practical purposes, it is the separation between "teaching process" and "learning", which badly affects teaching efficiency. The basic function and operation of software is relatively simple and students are able to be familiar with it by themselves. In this way, students enjoy the sense of fresh when doing it by t hem. And teachers, when liberate from dull operation demonstration are able pay more attention to comprehensive project design and provide personalized learning support services.

(2) Teaching object is not fully achieved

In the "two-step "teaching mode, teachers pay more attention to operation demonstration. As a result, the following negative effects are caused: 1) Related theories and ideas have not been explained in a systematic way. 2) Learners focus on detail study instead of thinking deeply which is harmful to develop high-level thinking. 3) Teaching mode is so dull that students are tended to be tired of it. 4) Separated teaching and learning process results in learning difficulties, low efficiencies and defeated initiative. 5) Practical ability and problem-solving ability are ignored. So, high –level teaching object can not be achieved.

Flipped classroom, a new teaching mode, provides a new way for educational reform in college or university. According to some scholar, flipped teaching can help the higher education focus on ability–training. In this mode, the theoretic lecture given in class in traditional mode is transferred to extracurricular time. Such activities as experiments, project, discussion and team cooperation are hold in class, in which students are active executor. Practical ability, communication ability and team-work spirit are well trained in class [3].

3. Establish A Flipped Classroom Teaching Mode in Digital Media Technology Course

3.1. Flipped Classroom Teaching Mode

Flipped classroom was firstly produced by two teachers in woodland park high school, Colorado, America [4]. It

was consider as new teaching mode to innovate classroom teaching. It is to flip the traditional teaching structure of "teaching in class –extracurricular internalization" and to form a new mode of "self-learning pre-class, deep interaction by activities in class [5]. When making the theory into practice, many kinds of procedures are practicable according to different characteristics of subjects. Robert Talbert, a teacher in mathematics and computing in Franklin Institute in America, conducted a

wide practice of flipped classroom to many courses like to solve problem by computer tools, Linear Algebra and so on. He achieved good teaching result. Over years' experience, he gave a summary of structure model of flipped classroom as shown in picture1. This model gives a description of the main sections in flipped classroom, including watching video and doing specific exercise before class and test, problems solving and feedback in class. As shown in Figure 1.
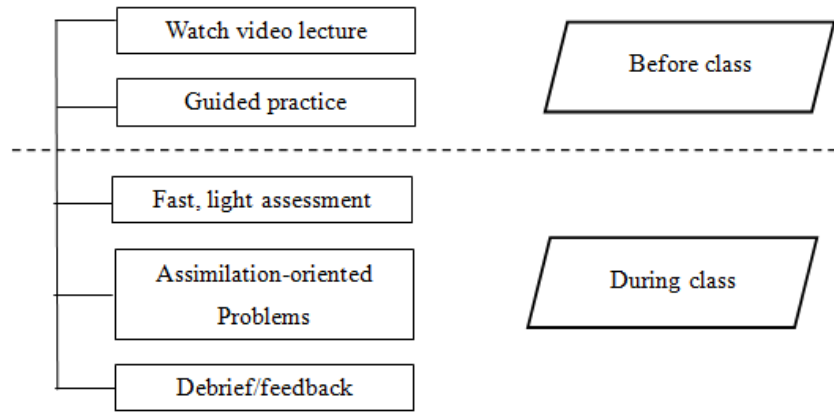

Figure 1. Structure model of flipped classroom by Robert Talbert [6]

3.2 Teaching Mode of Digital Media Technology Course

Flipped classroom structure, incorporating three stages of "before class self–study, while class internalization and post-class promotion", is designed by using the practice in

Woodland Park High School and Clinton dale High School in Colorado America as well as the study conducted by Robert Talbert for reference. And it also combines the characteristic of digital medial technology course as well as study in university. As shown in Figure 2.
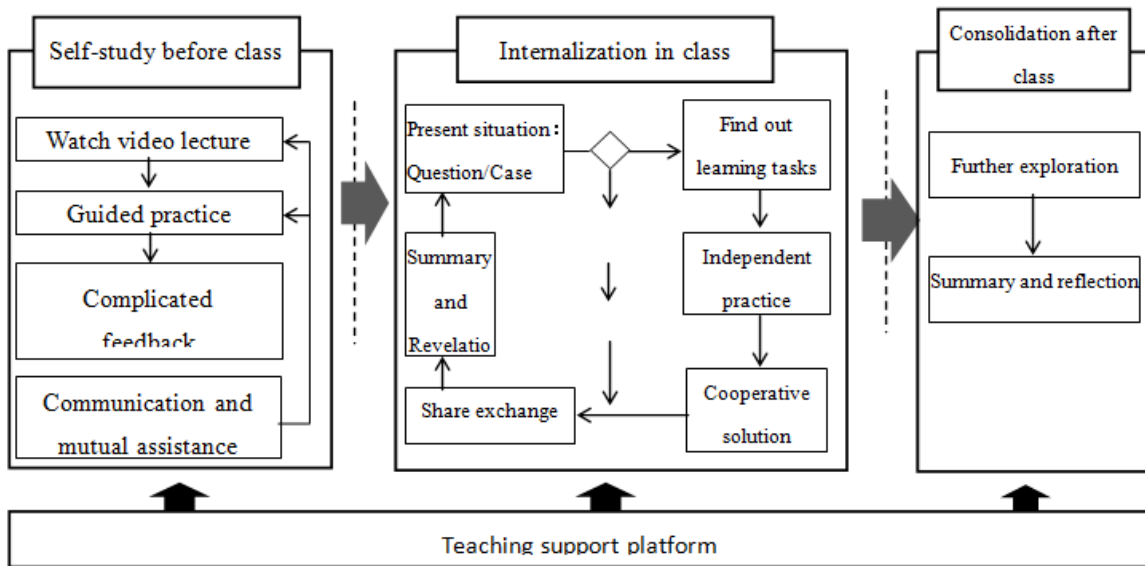

Figure 2. Digital media technology course teaching model based on Flip classroom

(1) Learning for preparation before class

Under the guidance of study manual, students conduct micro-study by watching video, and finish specific exercise. When meeting difficulties, online help and advice from teacher and partners are available. In this stage, students are supposed to memorize and understand fundamental conception and principles so as to make preparation in knowledge for deep leaning in class. The unresolved problems and difficulties are been feedback to teachers through the platform, which will provide important basis for teachers' classroom teaching strategy.

(2) Deep learning in class

Learners enter learning situations with pre-learned knowledge and pre-formed knowledge net. If it is a problem situation, students find the solution by group discussion. If it is a virtual project situation, independent exploring or collaboration is decided according to the project size. All the following factors like learners taking an initiative part in, seeking help of their teachers and classmates, making use of essential learning materials like information from the internet are necessary for meaning construction in both kinds of situations.

(3) Expanded learning after class

Expanded learning after class is a kind of spontaneous learning conducted by students having interests or need in which learners integrate theory with practice and make exploration. Learners are encouraged to record and share their exploration experience, for example, to write a blog or make digital story.

(4)Teaching support system

Reasonable technology can not only reduce labor intensity, can also support for the decision of science teaching. Teaching support system can provide the following support as releasing learning materials, extracurricular learning supervision, communication and interaction, work sharing, online work, online tutoring, online collaboration, interaction evaluation and so on. In addition, it can also record the learning process, and format learning big data. According to big data, teacher analytics learning situation, organize teaching activities and evaluate the learner. A platform with perfect function and simple operation will greatly promote the application of flipped classroom teaching.

In the flipped classroom teaching mode, there is no limitation to learning time and space, there are more and more interaction between teachers and students. Teacher is no longer the dominator but a guider and promoter. And students are the real leading role. Classroom is the place where students conduct project training and solve problems.

4. Empirical Study Based Flipped Teaching of "Web Design and Production"

4.1. Research Methods and Objects

Flipped classroom effect was verified by using questionnaire survey in the "Web Design and Production"

course. According to Danish psychology doctor Knut, learning behaviour, in a general sense, consists of factors at least in three dimensions, including motivation, content and interaction [7]. Therefore, research on flipped teaching effect has carried on the questionnaire survey. It was studied that mainly from the learning interest and learning motivation, self-learning help for knowledge learning, and independent/collaborative learning ability and knowledge internalization, etc. At the same time, Using interview method to know recognition to the new learning pattern.

The object of study is sophomore of a digital media technology professional, a total of 31 people. All students are equipped with a laptop, and the campus can be wired or wireless Internet access. It is viable to autonomous learning before-class and BYOD in class.

4.2. Research Process and Results Analysis

According to the survey, 81% students thought that self-study before class helps to master the fundamental knowledge and skills, 86% students thought that the objectives of flip learning are clearer, and 77% students indicated that they can set the pace of learning. The survey result is shown in Figure 3. as seen from Figure 4 and Figure 5, flipped classroom is good to the cultivation of independent/collaborative learning ability and knowledge internalization/application, which represented 74% and 77%. The investigation about the recognition of flipped classroom is shown in Figure 6. 71% of the learners thought flip teaching can stimulate learning interests, 79% thought it does good to the mutual communication between students and teachers, 83% thought that it helps to the mastery and application of knowledge, and 74% thought they can set the pace of learning to study individualized.
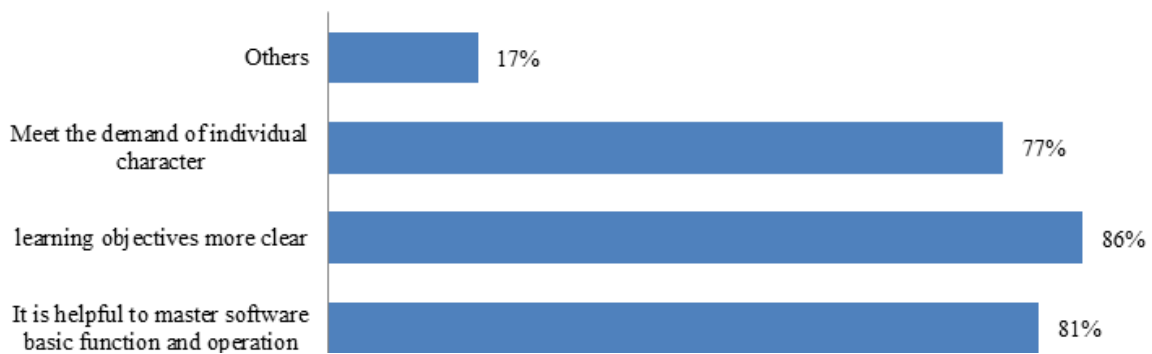

Figure 3. Investigation about flipped classroom help of autonomous learning before class to acquisition of knowledge
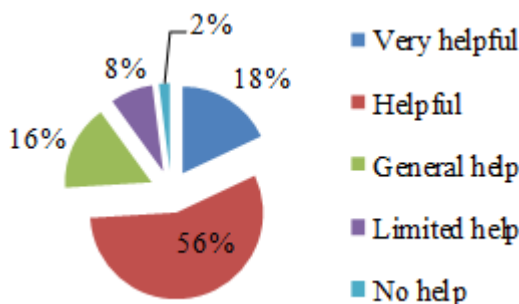

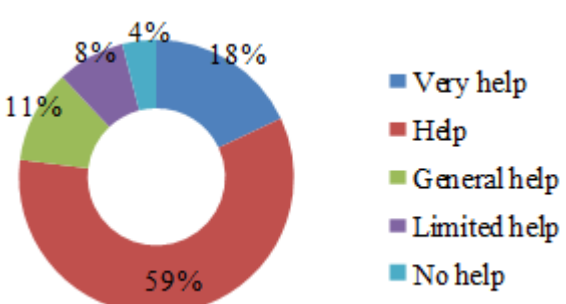**Figure 4.** Investigation about flipped classroom help to the cultivation of independent/collaborative

Figure 5. Investigation about flipped classroom helps to knowledge internalization and application
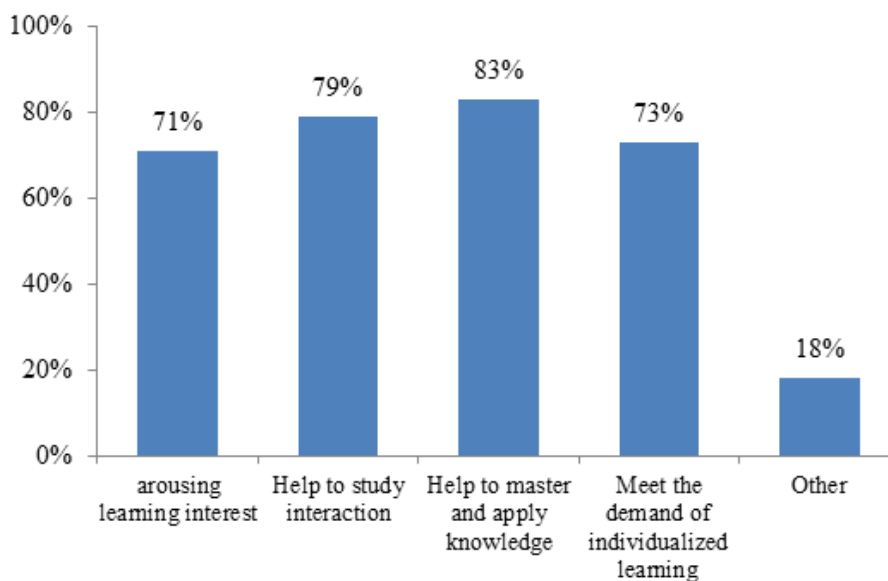
Figure 6. Recognition survey to flipped classroom

Take integrated analysis of the above research, and it is suitable that flipped classroom is introduced into digital media technology course. It helps student master knowledge and skills, and stimulates students' enthusiasm and initiative, cultivates students' ability to solve problems and innovate.

5. Conclusion

Flipped classroom is to flip traditional teaching structure of "teaching in class teaching structure of -extracurricular internalization", and truly embodies the "students centered" educational philosophy. It helps stimulate students' enthusiasm and initiative, cultivate students' ability to solve problems and innovate in digital media technology course. Flipped classroom provides a new idea for the traditional teaching innovation. Of course, some practical problems in flip teaching still need further research, such as how to coordinate well between consolidation to a theme of the past and self-study before class to the next theme

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