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Study of Flipped Classroom Teaching Method together with Cyberspace Learning to Promote Chinese Contemporary Literature History Achievement of University Students

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Abstract

The research aimed to explore the application of flipped classroom teaching method together with cyberspace learning, and discuss its feasibility in today's teaching practice and even enlighten educational innovation and development. Thus, two research objectives were proposed: 1) to compare the course achievement before and after receiving the flipped classroom teaching mode based on cyberspace learning, 2) to compare the course achievement with the determined criteria at 70 percent. It selected 30 freshmen randomly as a sample, majoring in Chinese Language and Literature, and took the course Chinese Contemporary Literature History. The experimental design was one group pretest posttest design which was to determine a new teaching mode by integrating flipped classroom teaching method together with cyberspace learning in order to promote Chinese contemporary literature history achievement of university students. The instrument was achievement test with the validity at 1.00, inter-rater reliability at 0.72, item difficulty (p) 0.20-0.45 and item discrimination (r) between 0.2-.07. The collected data were analyzed by computer software. The statistics of analysis were mean scores, standard deviation, t-test. The results showed that 1) students that immersing into the flipped classroom teaching method together with cyberspace learning got a higher score in the post-test than they achieved in pre-test without such teaching method at .05 level of statistical significance (t_{29} = -9.043, $p < .05$) 2) post-test mean scores of students' Chinese Contemporary Literature History achievement after learning through flipped classroom teaching mode based on cyberspace learning was statistically higher than the criterion of 70% at .05 level of statistical significance (t_{29} = 26.837, $p < .05$)

Keywords : Chinese Contemporary Literature History Achievement,   Flipped Classroom Teaching Method,   Cyberspace learning

1. Introduction

With the continuous development of information technology, Internet has developed greatly and integrated into many fields, esp. education. Moreover, it has emerged various forms of educational resources and autonomous learning platforms, such as MOOCs, micro-lectures, or APPs, and more advanced information technologies have been used to assist learners in academic study in different disciplines. Because of the innovation in teaching concepts, teaching methods and objectives, etc., a new teaching idea – flipped classroom was first emerged and discussed in United States (Baker, 2000; Bergmann & Sams, 2012), and a new teaching mode came into being, i.e. the flipped classroom teaching, which has been accepted and promoted gradually by world-wide educators and scholars, as well as front-line teachers (Yang, 2015).

There are several reasons for the prevailing application of the flipped classroom teaching. First, there is the need to promote the in-depth development of education informatization. The government documentary — *Ten-Year Development Plan for Education Informatization (2011-2020)*, proposes that China should explore the deep integration of information technology and Education, and innovate educational concept and educational model by informatization, in order to give full play to the supporting and leading role of educational informatization in educational reform and development. Second, there is the need of education reform and innovation. Third, there is the need for the construction and development of cyberspace learning. And the cyberspace learning complies with the needs of educational reform and development in the era of "Internet+". According to the thirteenth Five-Year Plan (2016), it is the trend for the construction of online teaching and learning with the development of education informatization.

As an instructional strategy and a type of blended learning, flipped classroom reverses the traditional learning environment by delivering instructional content, often online, outside of the classroom. It is the reallocation of in-class and after-class activities based on learners' characteristics and teaching needs, and also the realignment of time in and out of the classroom, so that students can make decisions and gain autonomy in learning (Yang, 2015).

Learning space refers to a space or platform that provides help and resources for learners. It is consisted of two features: one is supportive for learners, and the other is extensive in learning resources. It is a virtual or physical place or environment that can be designed and planned for learning (Fabregas, Farias, Dormido-Canto, Dormido, & Esquembre, 2011). And the concept of cyberspace learning is based on that of learning space, which is a specially designed virtual space that uses modern information technology and computer networks to support learning (He & Xue, 2013). Cyberspace learning is a kind of learning environment which integrates management, resources, evaluation, service and interaction. It provides a whole new learning environment, whose biggest advantage is that it can be designed and realized according to the characteristics of different subjects (Mulholland, 2012). Domestic scholars in China believe that

cyberspace learning is a virtual interactive autonomous learning space that combines information technology with Internet technology and provides massive information for learning through discipline design optimization (Zhong, et al., 2008; Xie, 2017; Li, et al., 2017).

In the study, the flipped classroom teaching method is defined as: through information technology means, combined with the teaching content, the original classroom teaching model for students and teacher-only approach is transformed into a new teaching mode characterized with the student-centered teaching idea, rich learning methods and means (online teaching and learning plus offline centralized tutoring) and bilateral interaction (Gerstein, 2012; Lorenzetti, 2015).

Talking to the traditional teaching approach, several problems are often discussed. First, it emphasizes teachers' leading role in class, neglects to motivate students' interest and inquiry motivation towards self-learning. Usually, teachers talk more, while students passively listen, almost no effective teacher-student communication. Second, no enough time for teacher-student interaction in class, and little chance for students to think deep and discuss thoroughly with teachers or other peers. Third, most teachers did not make full use of modern advanced equipment in traditional class. Forth, students cannot make good use of online learning resources in traditional class, because it forbids students from using smart phones or other mobile devices in classroom. But they'd like to surf online to study anytime anywhere in the fragmented self-learning. As a result, the traditional teaching approach is unsuitable for today' education innovation and cannot satisfy students' needs, who would like to learn independently in the diversified way, not just in-class learning only.

Compared with traditional teaching approach, the flipped classroom teaching method together with cyberspace learning has several advantages and characteristics. First, the leading role will be changed from teachers to students. Teachers are not the lecturer any more but the guide for learners' self-growth in academic study and critical thinking. Second, the learning environment generated by the flipped classroom teaching becomes more comfortable and friendly to students' physical and mental growth. Third, more time and opportunities for students to discuss and cooperate with classmates in project learning, and both teacher-student and student-student interaction become frequent and available in flipped classroom.

Therefore, both teachers and students need to change their roles and their ideas towards the application of internet learning resource and platforms. And teachers should reconsider the critical influence of education informatization upon their teaching design, and value both physical and psychological development of students to cultivate their deep understanding.

This study takes an experimental approach to investigate the design and application of flipped classroom teaching method together with cyberspace learning, aiming to offer a new teaching model for higher education reform and innovation. With the emergence and development of flipped classroom teaching mode, as well as the popular application and convenance of

cyberspace learning, teachers can break the traditional classroom teaching structure through this teaching mode. Students can carry out preview task, topic discussion, and learn the new content first through the cyberspace, and then improve the learning efficiency through in-class explanation and presentation. The flipped classroom teaching method together with cyberspace learning can better improve the teaching efficiency and teaching quality, and can better shorten the relationship between teachers and students; it can also help cultivate learners' understanding.

2. Research Objectives

2.1 To compare Chinese Contemporary Literature History achievement before and after receiving flipped classroom teaching mode based on cyberspace learning.

2.2 To compare Chinese Contemporary Literature History achievement with the determined criteria at 70 percent.

3. Research Methodology

3.1 Samples

The samples were composed of 30 freshmen enrolled in September 2020, majoring in Chinese Language and Literature in the School of Chinese Language and Literature of Zhoukou Normal University. They were randomly chosen from around 200 undergraduates in 8 classes.

3.2 Experimental Design

This study employed an experimental design with one group pretest-posttest design shown in the figure below. Pretest-posttest were used to investigate students' achievements in learning the history of modern and contemporary Chinese literature before and after learning through flipped classroom teaching method together with Cyberspace learning. The experimental design was shown in the table below.

Table 1 Experimental design employed in this study

Group	Pretest	Treatment	Posttest
Experimental group	O_1	X	O_2

O_1: was the study of students' achievements in learning the history of modern and contemporary Chinese literature before learning through flipped classroom teaching method together with Cyberspace learning.

X: It was the treatment of learning through flipped classroom teaching method together with Cyberspace learning.

O_2: was the result of students' learning of Chinese modern and contemporary literary history after learning through flipped classroom teaching method together with Cyberspace learning

3.3 Research Instruments

According to the research methodology, the research instruments mainly included 1) the instrument for experiment was lesson plans which were designed based on flipped classroom teaching method together with cyberspace learning space and 2) the instrument for data collection was achievement test of Chinese Contemporary Literature History with validity at 1.00, inter-rater reliability at 0.72, item difficulty (p) 0.20-0.45 and item discrimination (r) between 0.2-.07.

3.4 Data Collection

The data was mainly collected through Superstar Erya network platform, which constituted the basic requirements of cyberspace learning for students' online learning, and then was analyzed by SPSS. The pre-test was first carried out to gain a general idea of students' learning circumstance towards the course, and other issues were also investigated, like teaching objectives, specific learning contents, teaching keys and difficulties, etc., all of which were supposed to be considered in the teaching design of the course.

As to the application of flipped classroom teaching method based on cyberspace learning, both online learning resource and related tasks or tests were specially designed to check the feasibility of the new teaching method. The implementation of new teaching method took 12 hours with four topics including 1) MAO Dun's novel creation, 2) *Midnight*, Chinese modern full-length novel written by MAO Dun, 3) Lao She's creative path, 4) *Rickshaw Boy*, Chinese modern full-length novel written by LAO She. At the end of experiment, the samples received from the posttest by the same test used in the pretest. Both pretest and posttest were arranged with a unified online test upon Superstar Erya network platform, which composed the cyberspace for both online teaching and online learning. As to the questions and score distribution, there are three types of questions — the first is a multiple-choice with 5 items, the subtotal is 15 scores; the second is a brief-answer with 2 items, the subtotal is 10 scores, and the third one is an essay question with only 1 item, the subtotal is 15 scores. The test scores in pretest and posttest were made a comparison to reveal the advantage of enhancing academic achievement, as well as teaching and learning effects by the flipped classroom teaching method based on cyberspace learning.

3.5 Data Analysis

The quantitative analysis of pretest and posttest analyses included both descriptive statistics and inferential statistics as follow.

3.5.1 The pretest and posttest analyses by descriptive statistics, like mean scores ($\overline{X}$), standard deviation (S.D.)

3.5.2 The pretest and posttest analyses by inferential statistics to illustrate the significant difference of achievement in the course test. According to the research objectives, statistical procedures were used to analyze the data;

       1) comparing Chinese contemporary literature history achievement before and after completing instructed by flipped classroom teaching method together with cyberspace learning through t-test for dependent sample.

       2) comparing Chinese contemporary literature history achievement of posttest with the determined criteria at 70 percent (28 scores) through t-test for one sample.

4. Research Results

       The findings of this research were analyzed through descriptive statistics and t- test by using statistical package program to answer the progress of participants after its implementation. The findings were described as follows.

       4.1 The result of comparing the different scores of Chinese contemporary literature history achievement before and after learning through flipped classroom teaching method together with cyberspace learning was illustrated in Table 2.

Table 2 Research result for the first objective

Group	Population	Pretest		Posttest		t	p
		$\overline{x}$	S.D.	$\overline{x}$	S.D.		
Experimental Group	30	28.73	6.44	38.70	2.18	-9.034	0.000

       Table 2 illustrated that the pretest mean score of students' Chinese contemporary literature history achievement was 28.73 (SD = 6.44), while in the posttest, the mean score was 38.70 (SD = 2.18). The result of the table showed that after learning through flipped classroom teaching based on cyberspace learning, the posttest scores of students' Chinese contemporary literature history achievement was greater than pretest scores at .05 level of statistical significance (t_{29} = -9.043, p < .05). The average scores of the study developed increasingly higher than pretest.

       4.2 The result of comparing the different scores of Chinese contemporary literature history achievement after learning through flipped classroom teaching mode based on cyberspace learning with the criteria set at 70%. The below table showed descriptive statistics and t- test as the qualitative analysis by statistical package program. This table aimed to answer the research objective whether flipped classroom teaching method together with cyberspace learning was able to enhance Chinese contemporary literature history achievement

Table 3 The Result of Posttest Score

Group	N	Full score	Criteria score	$\bar{x}$	S.D.	t	p
Experimental group	30	40	28	38.70	2.18	26.837	.000

As presented in table 3, the mean scores of students' Chinese contemporary literature history achievement after learning through flipped classroom teaching mode based on cyberspace learning was 38.70 from a possible full mark of 40 and the standard deviation was 2.18 which was statistically higher than the criterion of 70% at .05 level of statistical significance (t_{29} = 26.837, p < .05).

5. Discussion

The study aimed to examine the effectiveness of the flipped classroom teaching method together with cyberspace learning to cultivate Chinese contemporary literature history. In this study was shown that the flipped classroom teaching method and cyberspace learning were an effective pedagogy in Chinese contemporary literature history. As mentioned above, the results revealed that academic achievement of Chinese contemporary literature history for students immersed in the flipped classroom teaching method together with cyberspace learning is better than that before learning.

This result can be explained that the new teaching method was learner-centered instruction that provides an opportunity for students to gain first exposure prior to class or out of class. Students developed their understanding of course content with rich learning resources, and they reified that information in some way, and teachers used various information technology to convey that reified information to students by out-of-class tasks, as these class activities were designed to help students construct deeper understanding of content by making them complete tasks *during class, which* would make main contents understood by individuals or by assistance of others (The Faculty Innovation Center, 2022).

With the new teaching method in the course teaching, no matter out-class activities online or in-class participatory learning, students have been gradually emphasizing independent inquiry, and they were immersed in the sense of achievement gained by their own efforts. It was generally believed that this teaching method would improve their independent learning ability, and they hoped to learn online and participate into learning tasks thoroughly. Students tended to use learning materials that were demonstrable and shared in class and provided direct assistance to their own learning. And before teaching in class, the learning resources or tasks provided by teachers were mostly used and previewed by students, such as video materials, lectures or PPT, which are all transmitted onto the online learning space. In addition, some popular online chatting APP, like QQ, WeChat, are often used to clarify out-of-class teaching.

As discussed above, cyberspace learning was a space or platform that provides resources for learners, which is characterized with extensive content and also supportive to learners. It should be the effective product of the combination of the virtual and the reality. And it is a whole new learning environment integrating various aspects, like the management of resources, service, evaluation, and interaction (Fabregas et al., 2011). On the basis of the original theoretical framework of learning space, cyberspace learning will provide users more resources and information through convenient online services (Mulholland, 2012). And since 2020, because of the epidemic of COVID-19, various universities and colleges were required to establish online teaching resources and construct online learning space, and front-line teachers were asked to make full use of network or information technology to set up their own online micro-lectures. Thus, the flipped classroom teaching method and cyberspace learning indeed played an important role in improving teaching effects and quality, and enhancing learning efficiency and interest of students in their independent online learning, who were adjusted well to such relatively relaxed and free learning environment, and might maximize their learning potential.

Therefore, because the concept of flipped classroom has been advocated around the world for many years, and popularizing across Chinese universities to enhance student-centered teaching idea, therefore, it was reasonable and feasible to combine the idea of flipped classroom with cyberspace learning in the course teaching. As both teaching resources and learning record can be traced and analyzed on the cyberspace, which is established upon the superstar network teaching platform, thus teachers can deal with the problems and feedback timely, adjust teaching contents and schedules, and communicate more effectively with students to make them learn actively and independently, consequently, obtain their recognition and active cooperation.

The results of this study were consistent with the previous studies or research showing that the construction of Cyberspace learning could help transform learning mode and change learning environment, and students' autonomous online learning was greatly benefited from the construction of Cyberspace learning. And with the application of information technology and the construction of cyberspace, teachers could set up online teaching and offline teaching, and activate students' center roles in participatory learning, consequently, teachers would flip class teaching and embed cyberspace learning into flipped classroom. Meanwhile, many scholars and educators argued that flipped classroom teaching method together with Cyberspace learning could significantly enhance both teaching and learning effect, and optimize the learning process, as well as improve learners' attitude toward self-study, and such method was approved by most students in today's colleges and universities (Zhong, et al., 2008; He & Xue, 2013; Li, et al., 2017; Liu, 2017; Zhao & Zhang, 2019).

Consequently, the combination of flipped classroom method and cyberspace learning of this study revealed that students have learnt in both flipped classroom teaching method based

on cyberspace learning. They could manage their time reasonable in dealing with their self-learning in cyberspace, and think deeply and communicate freely without much anxiety in the virtual cyberspace learning. However, the comparison of academic achievement of the course Chinese contemporary literature history was much significant between before and after learning the flipped classroom teaching mode based on cyberspace learning. Therefore, the flipped classroom teaching based on cyberspace learning was proved to be advantageous in enhancing teaching and learning effects, as well as stimulating students' learning interest and participation in teaching activities, no matter in-class group work or out-class preview or assignment.

6. Conclusion

The flipped classroom teaching method together with cyberspace learning is integrated of flipped classroom and online learning due to the development of information technology and networking, and it plays a critical role in the teaching practice and innovation, and it also makes active influence upon teaching effects and learning effects, encouraging students to diversify their learning methods and manage to deal with time reasonably in their autonomous learning. Compared with traditional teaching approach, the flipped classroom teaching method can strengthen teacher-student interaction, and enhance students' interest and participation in various learning tasks, no matter in-class activities or out-class assignments, and it could enforcement the student-centered teaching idea in future reform of higher education.

7. Recommendations

7.1 Recommendation for Implication

7.1.1 The design and application of flipped classroom teaching could be a good example for the higher education reform and innovation. The young teachers are supposed to learn new pedagogical theories to refresh their teaching idea and guide their teaching practice, to adjust teaching design to meet the cultivation of the talents with discipline theories and professional competence needed by social and economic development.

7.1.2 As a teacher, it is apparent that flipped classroom teaching method together with cyberspace learning should be an integrated aspect of education. Investigations from the repeated implementation to use it in the classroom show that it transformed students from passive to active learners and also change the progression in academic achievement.

7.2 Recommendation for Further Research

7.2.1 The further study should make further analysis on the complexity of flipped classroom teaching method together with cyberspace learning. The flipped classroom teaching mode concentrates on reversing the teaching procedures, and extending learning space for students, but the concrete implements is a bit out of control, because the idea of learning first

probably does not get students' enough attention, and teachers' administration may be not timely and effective. Besides, the construction of the flipped new teaching method together with cyberspace learning is a bit sophisticated; it should be revised in the future study.

      7.2.2 Time duration for the observation and data collection is a bit limited, more time is needed for the further study, and discuss the close relationship between flipped classroom teaching method together with cyberspace learning.

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