

Study on Cultivating College Students' English Autonomous Learning Ability under the Flipped Classroom Model

Yanxia Du¹

¹English Department, North China Electric Power University, Baoding, Hebei, China

Correspondence: Yanxia Du, English Department, North China Electric Power University, Baoding, Hebei, China.

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Abstract

Since the 21st century, the cultivation and improvement of college students' English autonomous learning ability have become an important symbol of deepening the reform of College English teaching. The reform of teaching model is the critical to it. With the help of the self-constructed flipped classroom teaching model, this paper designs the corresponding teaching process, aiming at investigating the three dimensions of self-management learning ability, self-learning psychology and self-learning behavior of non-English majors. After the investigation and experiment on the control class and the experimental class for the whole semester, the experimental results show that the self-regulated learning model of College English based on the flipped classroom can greatly improve the comprehensive English level of College students, and the flipped classroom teaching model of College English can effectively improve the students' self-management learning ability, stimulate students' motivation of autonomous learning and activate students' autonomous learning behavior. Thus, it opens up a new path for the cultivation of College Students' autonomous learning ability.

Keywords: flipped class-room, college English, autonomous learning

1. Introduction

Since Holec introduced the concept of autonomous learning into the field of foreign language teaching in the 1980s, researchers have conducted a lot of research on it. Researchers have also emphasized the characteristics of autonomous learning from different perspectives. Holec (1981) holds that autonomous learning is the ability that learners are responsible for their own learning, which emphasizes the subjective responsibility of autonomous learners. Little (1991) harbors the idea that autonomous learning is an act that learners think independently, make and implement their own decisions, which emphasizes the independence of autonomous learners. Nuuan (1995) thinks that autonomous learners have the ability to set their own learning goals and learn according to these goals, emphasizing the self-goal of autonomous learning. Although researchers have different emphasis on autonomous learning, it can be clearly seen from their research that they all affirm the positive role of autonomous learning in the learning process. Self-regulated learners have the ability to choose suitable methods to fulfill the learning tasks set by teachers or learners themselves, so as to achieve the established learning goals. These findings can well prove that learners' autonomous learning ability is an important aspect in the process of foreign language learning. Chinese researcher, Dingfang Shu (2004), believes that autonomous foreign language learning includes attitude, ability and environment. Thus, autonomous learning is a long-term and dynamic process, rather than a static one; once it achieves its goal, it will last forever (Lianzhen He, 2003)

2. Background: Autonomous Learning and Flipped Classroom

Research on autonomous learning in China is relatively late. According to statistical data of domestic core journals, the research on autonomous learning in China can be roughly divided into three stages. The first stage is the initial stage (1991-2000), which mainly introduces and comments on the research results of the foreign researcher. Then, it is the development stage (2001-2006), which mainly focuses on the feasibility study of the autonomous model in Chinese foreign languages, and empirical studies have also emerged. The last is the boom period (2007-present), the scope of research has been further expanded and the number of articles on autonomous learning has increased dramatically. Especially in 2007, the Ministry of Education promulgated the Requirements for College English Courses, which proposed to adopt information technology to transfer the traditional classroom teaching model to the computer-base teaching model, so as to promote students'

individualized learning and autonomous learning ability (Ministry of Education, Department of Higher Education, 2007). The promulgation of Curriculum Requirements has opened up a new upsurge for English teachers and researchers to study new teaching models and students' autonomous learning.

In recent years, the rapid development of computer and Internet information technology and the change of mobile communication equipment have provided conditions for innovative teaching of College English. Based on modern information technology such as the computer network, the flipped classroom teaching model meets the needs of English teachers in teaching. The flipped classroom model mainly includes two aspects: students' autonomous learning after class and cooperative inquiry between teachers and students in class. There is no doubt that students have great freedom and can learn independently according to their abilities and energy under the flipped classroom model, which is contrary to the traditional model of "classroom teaching + home reviewing". According to the understanding of the flipped classroom teaching model, many domestic researchers (Yunyan Cheng, 2014; Di Deng, 2016; Jiehui Hu & Jiezhong Wu, 2014 et al.) have made feasibility analysis on the application of the flipped classroom model in College English curriculum, and have tried to construct a flipped classroom model suitable for college English. The results show that this teaching model can be accepted by learners. Numerous research on flip classroom and autonomous learning emerges, such as the research on the situation of autonomous learning (Hongyan Lu, 2015); the cultivation of autonomous learning strategies and abilities (Lianzhen He, 2003; Zhengxi Liu & Qianhui Wu, 2015; Xuefei Fan, 2015); the research on autonomous learning teaching model (Tingting Lv, 2016); the research on autonomous learning concepts (Reifeng Ge, 2016), etc. From these findings, it can be seen that the current researchers have done a lot of theoretical discussions, feasibility analysis and hypothesis model research on College English autonomous learning in the flipped classroom, but the flipped classroom model which emphasizes learner-centered teaching is still in the exploratory stage and needs to be studied continuously. In view of this, the purpose of this study is to provide solutions for the cultivation of College Students' autonomous learning ability under the flipped classroom teaching model by studying the construction and effectiveness of College English autonomous learning model.

3. An Empirical Study of College English Autonomous Learning Model which is Based on Flipped Classroom

3.1 Research Design and Objects

In this study, some non-English major freshmen of grade 2018 in a key university in Hebei Province of China were selected as the experimental objects. The experimental class and the control class consisted of 60 students, each with the same educational background and cognitive ability. The age range of students is 18 to age. Both classes were taught by the same teacher. Before participating in the experiment, the students all participated in the questionnaire about autonomous learning. It was found that the students in the two classes had serious learning attitude, certain information acquisition ability and self-regulated learning ability, which created conditions for the implementation of autonomous learning in flipped classroom. This study mainly collected data by means of tests, questionnaires, interviews and classroom observations. The tests are divided into the students' proficiency test before the teaching experiment and the final examination after the teaching experiment. The tests were similar to CET-4, with a full score of 100. The data collected were processed and analyzed by SPSS17.0 software to acquire the effect of autonomous learning which is based on flipped classroom on comprehensive English proficiency.

The questionnaire used in this study is based on Lilan Lin's (2013) "three-dimensional constructed energy table" for college students' autonomous learning of English, which includes 38 questions and involves three dimensions: learner's self-management learning ability (16 questions), autonomous learning psychology (10 questions) and autonomous learning behavior (12 questions). Likert Scale was used in the scale, and it was assigned 1 to 5 points from "strongly disagree", "disagree", "uncertain", "agree" to "strongly agree" respectively. The higher the total score is, the stronger autonomous learning ability students have. The original collected data were processed and analyzed by SPSS17.0. In addition to the questionnaire survey, this study also interviewed some of the students in order to further understand the specific process and causes of the students' autonomous learning ability. The university has fully covered the network, so that students can conduct static learning in the computer classroom, also can use computers, mobile phones and other electronic equipment, doing dynamic learning anytime anywhere. These provide a hardware guarantee for the implementation of the flipped classroom model.

3.2 Experimental Process

In the teaching experiment, the experimental class and the control class both used the books: New Standard College English and New Century College English learning to speak: An English Video Course, and completed

five units in one semester (16 weeks). Both classes have four hours a week. To compare the results of the study, the control class still adopted the traditional self-regulated learning model, while the experimental class used the autonomous learning model of College English based on the flipped classroom. The experimental teaching was divided into three stages: pre-class knowledge transfer stage, in-class internalization expansion stage and after-class knowledge solidification stage. (1). In the stage of pre-class knowledge transfer, teachers and students discuss the flipped classroom content of the next class, refine teaching contents according to students' characteristics and styles, integrate new knowledge into videos, micro-courses or PPT courseware, and share micro-video resources or courseware to learners with the help of classroom teaching platforms, so that students can make use of various learning platforms to conduct learning via various learning mobile terminals according to their own learning level anytime anywhere. They can control their own learning time, learning amount and learning content, and gain explicit knowledge by watching the courseware. On the other hand, teachers would guide students to explore and think about the specific topic to cultivate their ability to analyze and solve problems, and require students to complete the questions as doing multiple choices, filling in the blanks, reading, thinking and answering, writing within the prescribed time limit. All questions except question-and-answer would be automatically corrected through the platform, and scores would be recorded automatically. Teachers would review the question-and-answer for thinking. All students are required to register and complete online learning courses on time. In addition, students are encouraged to publish learning problems and suggestions to the classroom discussion group for communication and sharing. (2). In the stage of in-class internalization expansion stage, students are divided into 12 groups according to their proficiency and willingness, each of which consists of 4 to 6 members. The group leader is responsible for the management of the group's learning. Through a variety of communication methods, the students cooperate with their peers to complete group tasks, such as designing works, preparing class performances, debating. Teachers give evaluations of student participation and reporting, which enables students to internalize and expand their knowledge in the process of exchanging information with peers and teachers in the classroom. (3). In after-class knowledge solidification stage, after-class evaluation mainly comes from homework and unit test. Specifically, students can get this part of the evaluation results by completing homework and online unit tests after the completion of classroom teaching within a week, so that the internalization of students' knowledge can be verified through this step.

3.3 The Analysis of Experimental Results

Based on the influence of autonomous learning model of College English in the flipped classroom on the comprehensive English proficiency of the experimental class and the control class, a comparative experimental analysis is made between the experimental class and the control class. The following (Table 1) is the experimental results. Pre-test results show that there is no significant difference in the comprehensive English proficiency between the experimental class and the control class before the teaching experiment ($t=-0.67$). After teaching for one semester, the average comprehensive English score of the experimental class was 83.13, which was higher than that of the control class (77.45). There was a significant difference between the two classes ($T=6.31$). It can be seen that the autonomous learning model based on the flipped classroom plays a significant role in improving students' comprehensive English proficiency.

Table 1. General condition

Class	Pre-test		Post-test	
	Experimental class	Control class	Experimental class	Control class
Number	65	65	65	65
Average score	72.5	73.6	84.2	78.4
Value of T		-0.62		6.31

3.3.1 The influence of College English Autonomous Learning Model on self-management learning ability based on flipped classroom

Students' self-management learning ability refers to "students have the ability to formulate and implement, evaluate and reflect on learning effectiveness" (Lilan Lin, 2013). Through the pre-test statistics of students' self-management learning ability (Table 2), it is found that there is no significant difference between the control class and the experimental class. Most students' self-management learning ability needs to be improved urgently. After a semester of training, students' self-management learning ability in the experimental class has been significantly improved, while the control class has not been effectively improved. Through interviews with students in the control class and the experimental class, 85% of the respondents in the experimental class

expressed their progress in English learning, and made corresponding plans. They believed that the new teaching model could promote their ability to solve and analyze problems. 92% of the students in the experimental class thought they could complete the learning content according to the teachers' requirements and had clear goals. It can be seen that the autonomous learning model of College English based on the flipped classroom plays a great role in promoting the cultivation of students' self-regulated learning ability. However, after a semester of teaching experiments, 20% of the students still couldn't plan the time and place of autonomous learning very well. As high as 93% of the students thought that teachers' guidance, supervision and management were necessary for the cultivation of autonomous learning ability. 68% of the students thought that they could help themselves to choose the appropriate learning methods and strategies, but it could be found that most of the students only had the basic knowledge of learning strategies, and they lacked some advanced, interactive and effective learning strategies. This enlightens teachers to pay attention to the training and activation of students' advanced learning strategies in teaching. Although most of the students in the control class had a clear understanding of their own foreign language learning and they could use incentives to encourage themselves in the face of setbacks, 80% of the students thought that although they had goals, they lacked a strong sense of implementation plan and reflection, and could not effectively monitor and evaluate their learning effect.

Table 2. Self-management learning ability

Class	Pre-test		Post-test	
	Experimental class	Control class	Experimental class	Control class
Number	65	65	65	65
Average score	2.74	2.65	3.52	2.76

3.3.2 The Effects of Autonomous learning model of College English based on Flipped Class on Autonomous Learning Psychology

The learner's autonomous learning psychology is the premise of cultivating the ability of autonomous learning. The attitude of learners to their own learning roles and ability is the psychological preparation for the construction of autonomous learning ability. Learners with better autonomous learning ability will voluntarily adopt a positive attitude towards learning. Through the pre-test statistics of students' autonomous learning psychology (Table 3), it is found that the students in the control class and the experimental class had a certain sense of autonomous learning in English learning. They understood that the learners themselves were the main body of language learning activities, and they should be responsible for learning activities and had a positive attitude towards learning. After one semester of study, the willingness of the students in the control class and the experimental class increased significantly, and the growth rate of the experimental class was significantly higher than that of the control class. The interviews showed: 90% of the students in the experimental class expressed that their English learning had gradually turned to cultural experience, reading appreciation, cultural exchange and exhibition of works, and their interest in English learning was growing; 82% of the students thought that the resource platform and the short and concise video resources and courseware provided by teachers could be played continuously, anytime and anywhere, which not only made up for the missing knowledge points, but also stimulated the learning initiative and improved the learning enthusiasm; 78% of the students said they would encourage themselves to persevere when they met with setbacks in their studies which meant learners' learning motivation was increasing because learners would take the initiative to make learning plans, actively select learning materials, constantly evaluate the learning effect and encourage themselves to persevere only when they have a strong motivation to learn.

Table 3. Autonomous Learning Psychology

Class	Pre-test		Post-test	
	Experimental class	Control class	Experimental class	Control class
Number	65	65	65	65
Average score	2.54	2.78	4.52	3.36

3.3.3 The Effects of Autonomous learning model of College English based on Flipped Class on Autonomous learning behavior

Learner's autonomous learning behavior is the key to cultivate the ability of autonomous learning (Xiaomin Zhang, 2014). Although most students have confidence in the ability to their autonomous learning ability and willingness to assume the responsibility of learning, the pre-test scores for autonomous learning showed that they have not converted such confidence and willingness into self-regulated learning behavior. After a semester's study, the survey found that the students in the control class did not form good autonomous learning behavior, and most of the students would not take the initiative to learn English. Although some students in the experimental class didn't have a strong willingness to learn English independently, their proportion of learning English independently was significantly higher than that in the control class. 80% of the students in the experimental class would preview what they wanted to learn, while only 28% of the students in the control class did actively. From the interview, 98% of the students in the experimental class agreed to distribute the contents of pre-class preparation to the network platform in the form of homework, and said that they would complete the unit test in time; 85% of the respondents in the experimental class attributed their autonomous learning behavior to the flipped classroom teaching model. They believed that if there was no such autonomous learning behavior after class, it would be very difficult for them to perform positively in the classroom. However, it is worth noting that 50% of the students also said that this pattern made them spend too much time on English learning and sometimes felt tired of coping with it.

The survey of autonomous learning behavior shows that students are not satisfied with only learning textbook content in terms of English learning, hoping to be able to get more extracurricular knowledge. They are more interested in listening and speaking than in writing and reading, which shows that students pay more attention to the training and learning of practical application abilities such as listening and speaking under the pressure of employment competition. However, in language learning and communication, listening, speaking, reading and writing skills complement each other. Only through a lot of input training can we improve the output ability. An isolated practice of listening and speaking is not advisable.

Table 4. Autonomous learning behavior

<i>contents</i>	<i>Experimental class</i>		<i>Control class</i>	
	<i>Agree +strongly agree</i>		<i>agree+strongly agree</i>	
	<i>number</i>	<i>percentage</i>	<i>number</i>	<i>percentage</i>
I will preview the contents before the English class.	18	28%	52	80%
I will review courses or other contents learned recently.	25	38%	36	55%
I listen to online listening materials to improve my English listening ability	20	31%	33	51%
I have a habit of reading English.	15	23%	30	46%
I can record what happened around me in English.	10	15%	30	46%
After learning one or two units, I will test my learning results.	18	28%	40	62%
I will learn the social and cultural knowledge of English-speaking countries to assist English learning.	24	37%	38	58

4. Conclusion

This study confirms the hypothesis that the flipped classroom teaching model can cultivate students' autonomous learning ability. The following is the result from the study.

By using modern information technology, the teaching model of College English flipped classroom has changed the simplified teaching methods to improve students' autonomous learning ability, enhance their autonomous psychology, stimulate their autonomous motivation, and activate their autonomous behavior. It also shows that

the new teaching model is feasible. College students already have autonomous learning by means of education informationization, and can effectively complete the learning tasks assigned in the flipped classroom. Results of classroom observation show that the teaching atmosphere of the experimental class is more harmonious. Students have high enthusiasm to participate in the classroom activity, and they have heated discussion in the classroom. Moreover, the students in the experimental class have good cooperation spirit, so group cooperation is more effective. The teaching idea of student-centered and teacher-led has been realized. The new model makes up for the shortcomings of the traditional classroom. Students can arrange their study according to their level, the content they have learned, the progress they have made, their time and place. The new model can stimulate students' thirst for knowledge and innovation ability, enhance learners' self-confidence, reduce learning pressure and anxiety, and correct learning attitude. Through interviews, students said that they learned how to evaluate their learning, how to be responsible for learning, how to cooperate with peers, how to work harder than before, and how to enjoy the success of progress with peers. But the research also exposed many problems. The interviews found that some students have poor self-discipline. At first, they could keep up with teacher's progress, but soon afterwards they could not finish the learning tasks assigned by the teachers in time and failed in participating in classroom discussions. To the students who are introverted, could not adapt to the new learning model. They still missed the traditional teaching model, waiting for teachers to explain in class, which resulted in their low learning efficiency. Therefore, the autonomous learning model of College English based on the flipped classroom needs to develop the corresponding flipped classroom learning platform to adapt to the individual development of students. At the same time, we should constantly improve the monitoring system, provide timely and convenient learning feedback support, and optimize the learning environment. For teachers, they need to constantly improve learners' ability to monitor, regulate and evaluate their own learning, and understand the corresponding learning strategies in order to ensure the sustainable development of students' autonomous learning ability. Additionally, teachers should change their educational concepts and gradually establish a student-centered teaching model. According to the students' learning situation and personality characteristics, we should use multimedia and other advanced teaching methods to teach students in accordance with their aptitude and develop individualized teaching. Therefore, teachers should help students analyze their strengths and weaknesses, develop their strengths and avoid weaknesses, and find suitable learning methods and strategies according to their own characteristics. In addition, teachers should give humanistic and emotional care to students, actively understand the learning styles and dynamics of different students. In short, the overall goal of cultivating students' autonomous learning ability is to help students establish the ability of lifelong learning. With the continuous development of educational informationization, the autonomous learning model of College English based on the flipped classroom is the necessity of adapting to the teaching reform in the new era and lays the foundation for the opening of the door of wisdom education. Thus, the study of the new model is still in its initial stage. How to further improve the model and improve students' autonomous learning ability needs the joint efforts of experts and scholars.

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