

# Application of "Flipped Classroom" in China's Colleges and Universities

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**Abstract.** With the in-depth development of information education, flipped classroom has become one of the teaching models that attract the most attention of domestic and foreign educators in recent years as a new teaching model. It provides a new way for us to improve higher education. Flipped classroom exchanges traditional in-class teaching activities with after-class teaching activities. After class, students learn by themselves to learn knowledge by high-quality teaching resources provided by teachers. In class, students and teachers carry out interactive activities so that students can understand the knowledge. Practices prove that flipped classroom is helpful for arousing learning interest of students, cultivating their abilities and enhancing job satisfaction of teachers.

## Introduction

Background and Significance of Flipped Classroom. Ten-year Development Plan of Education Informationization (2011-2020) requires to establish new information teaching environment, optimize teaching model and promote education reform based on the deep integration of information technology and education. With the development and popularization of the Internet, "flipped classroom" has become popular in China as a new teaching model. The rise of "flipped classroom" is subversion in the field of education. It flips not only the classroom but also educational philosophy and plays a vital role in comprehensive improvement of teaching quality in colleges and universities.

## Features of Flipped Classroom in Colleges and Universities

First, teaching videos are short and pithy. The common feature of Salman Khan's math tutoring videos and the chemistry teaching videos of Jonathan Berman and Aaron Sams is short and pithy. Most of the videos last a few minutes or just more than ten minutes. Each video is targeted at a specific question, which is easy to search. The length of video is controlled within the time that students can concentrate. It complies with the characteristics of students' physical and psychological development. The videos released through the Internet can be paused or replayed to realize self-control, which is helpful for self-learning of students<sup>[1]</sup>.

Second, it achieves the real situation of speaking less and learning more. German educator Diesterweg says, "A bad teacher conveys truth, while a good teacher teaches people to find the truth." Flipped classroom concentrates 45-minute traditional class into 10 to 15-minute interpretation by guiding methods and collecting key points. It realizes the real situation of speaking less and precisely by leaving enough time for self-learning of students. In class, the teacher will participate into cooperation and exchange and pay attention to how students learn so that students can have more development space.

Third, it reconstructs learning process. The traditional learning process consists of two stages - information transmission and knowledge internalization. "Information transmission" is completed through interaction between teachers and students; "absorption and internalization" is completed by students themselves. Flipped classroom reconstructs the learning process of students. "Information transmission" is carried out by students before class. The teacher will provide videos and online tutoring. "Absorption and internalization" is completed by interactions in class. The teachers can know the learning difficulty of students in advance so that they can offer effective tutoring in class. The interactions and exchanges among students can promote their absorption and internalization of knowledge.

Fourth, it expands the personalized tutoring. Personalization refers to customizing the teaching goals, plans and programs for the objects of education through comprehensive test, analysis, research and diagnosis of them according to social or future development trend, the potential features and self-values of objects of education in order to help them bring their life potential into full play and realize self-growth and self-values<sup>[2]</sup>.

### **Advantages of Flipped Classroom in Higher Education**

Helpful for cultivating students' autonomy and inquiry of learning

Flipped classroom refers that students make use of teaching videos to arrange and control their study based on their own situation in order to grasp learning progress and depth according to the requirements of teachers. They can master the pace of watching teaching videos by skipping those they understand and placing emphasis on those they do not understand. Besides, they can pause or write notes or ask students and teachers for guidance or help through online communication. It fully reflects the autonomy and inquiry of college students.

Helpful for cultivating students' ability of communication and teamwork

Flipped classroom greatly enhances classroom interaction. As the role of teacher shifts from the presenter of contents to the coach of study, there are more time and space for the communication and exchanges between teachers and students and among students. Mutual understanding and meeting of teachers and students in and after class can cultivate students' ability of communication and cooperation and make them better understand the knowledge.

Helpful for mutual promotion of teaching and learning

Flipped classroom is independent exploratory learning way based on the Internet resources. The core of independent exploratory learning strategy is to fully play the initiative and enthusiasm of students and reflect the subjective role of students' cognition as well as students as the center. Whether the students are active and independently learn or not is determined by whether the teachers can design questions in which students are interested, record videos with clear thoughts, precise language and key and difficult points or not. It requires teachers to have a solid teaching foundation and master reasonable use of modern information technology. Thus, it is a challenge for teachers as well as an opportunity for mutual promotion of teaching and learning<sup>[3]</sup>.

Bring vitality for information school

Currently, most China's colleges and universities have established their own campus networks that play a certain role in school management and teaching. However, there is a lack of teaching resources. The campus networks of some schools are regarded as a kind of decoration or a framework, and most of the resources are about news of education and the schools. There are few resources for self-learning of students with slow pace of update of resources. With the promotion and application of flipped classroom, the development and application of campus network resources will usher in the spring.

Enhance information technology literacy of students

In order to complete study of knowledge, students need to make use of information technology such as network, computers and mobile phones to download teaching videos of their teachers or other famous teachers in order to find out the best answer to the question. Students need to make use of platforms to communicate and interact with others and teachers. In this process, the

information technology literacy of students will be enhanced.

### **Limitations of Flipped Classroom**

Compared with traditional teaching, flipped classroom is of great significance in innovating higher education and improving teaching quality. However, there are some limitations of the application of flipped classroom in higher education.<sup>[4]</sup>

Although there are some advantages of flipped classroom in mobilizing college students' learning enthusiasm, stimulating and maintaining the motivation to learn, cultivating their ability to learn independently and cooperate, flipped classroom has its limitations. As higher education focuses more on the internal understanding, construction and thinking of abstract concepts and principles, the teaching results of flipped classroom about conceptual and principle knowledge in higher education are not satisfactory, which is even worse than that of traditional teaching.

College teachers basically welcome flipped classroom as it makes them get rid of low-level repetitive work and conduct valuable creative work. However, flipped classroom requires more time in class to organize teaching activities to deal with the special situation of some students. If there is no plan in classroom teaching, it may lose control or even reduce teaching efficiency.

In addition, the effective application of flipped classroom in higher education requires college students to have certain ability of self-management and self-study. Moreover, the effective application of flipped classroom in higher education should suit their measures to "classroom" based on innovation of teaching model and "flip" of "teaching" and "learning". In addition, it should take the design and organization of classroom teaching activities as the foundation, the teaching videos as the guarantee and the innovative teaching of college teachers as the key<sup>[5]</sup>.

### **Conclusion**

Modern society is information society with rapid update of knowledge. The society requires us to continuously learn to keep up with the times, especially college students. Self-learning ability is an important quality of lifelong learning, and flipped classroom is an effective solution to internalize knowledge and cultivate lifelong learning ability. Like other mature teaching models, flipped classroom is just a kind of teaching organization. Not all the class and knowledge can adopt flipped classroom teaching model. Flipped classroom teaching should coexist with traditional teaching, and the teaching of one subject should combine both the two teaching models. Colleges and universities should apply flipped classroom in order to make up for shortcomings of traditional teaching. Besides, they should create favorable conditions for implementation of flipped classroom and overcome its own limitations.

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