# Effective Application of Flipped Classroom Teaching Mode in Computer Specialty Teaching

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*Abstract:* Owing to the progress of science and technology, computer technology has been widely used in people's life, study and production. In order to give better play to the function of computer, teachers should focus on adopting scientific and reasonable ways for computer professional teaching. This paper studies the flipped classroom mode and its advantages and effective application in the teaching of computer courses, hoping to provide reference for the teaching design based on flipped classroom.

## **1. Introduction**

In recent years, the continuous emergence of new forms and new carriers in the field of education and teaching, especially the rise of flipped classroom mode, has triggered a new round of teaching reform. Combining the advantages of flipped classroom teaching mode, the teaching of computer specialty can greatly promote students' autonomous learning ability, enhance students' enthusiasm, promote teaching practice, improve students' ability to analyze problems and solve practical problems in life.

# 2. Introduction to Flipped Classroom Teaching Mode

Flipped classroom is for students to learn independently by watching the teacher's video explanation before class. The classroom has become a place for question-answering and cooperative exploration between teachers and students and between students and students. In flipped classroom teaching, teachers mainly play the guiding role, and students are the main body of the classroom <sup>[11]</sup>. Flipped classroom realizes the reconstruction of students' learning process. Usually, the first stage of students' learning is "information transmission", which is mainly realized through the interaction between teachers and students. The second stage is "absorption and internalization", which is completed by students themselves after class. Due to the lack of teachers' help and classmates' company, the "absorption and internalization" process offen frustrates students and makes them lose learning motivation. The "information transmission" of flipped classroom is carried out before class. Teachers can not only provide videos, but also conduct online counseling. In addition, "absorption and internalization" is completed in the classroom through various classroom activities. This process is assisted by teachers' explanation and mutual communication between students, promoting the process of students' knowledge absorption and internalization. Flipped classroom can

enhance students' autonomous learning ability and cultivate students' active thinking ability and problem-solving ability <sup>[3]</sup>.

# 3. Advantages of Flipped Classroom Teaching Mode in Computer Specialty Teaching

Flipped classroom has many advantages in the teaching of computer courses, mainly in enhancing students' autonomous learning ability, enriching computer teaching resources and cultivating students' independent thinking ability.

## 3.1 Enhance Students' Autonomous Learning Ability

In the past, the teaching mode of computer classroom teaching was single. Teachers mainly explained computer knowledge, and put forward some questions, which were answered by students, but the students who answered the questions in the classroom were often a few students. A large part of the reason for this problem is that students' learning ability is limited and they can't internalize the knowledge learned in the classroom, resulting in the reduction of students' learning enthusiasm. In flipping classroom, after the teacher lists the outline, the students use the teaching video to arrange their own learning according to their actual situation. The rhythm of students watching the video is completely controlled by themselves. They can watch it again and again, think carefully and take notes without worrying about something missing in the classroom <sup>[2]</sup>. This can well enhance students' autonomous learning, so as to greatly enhance students' learning enthusiasm and improve learning efficiency.

# **3.2 Enrich the Teaching Resources of Computer Courses**

In the past, due to the limitation of classroom time and students' receiving ability, the knowledge taught by teachers in the classroom was limited, and it was hard to have a specific understanding of each student's learning situation, so it was difficult to ensure the teaching quality, and the effectiveness of computer teaching can't be guaranteed. Flipped classroom can enrich teaching resources, including computer information resources, computer video resources and so on. The teaching mode of flipped classroom allows students to actively participate in classroom teaching, and changes the teaching task of computer teachers from inculcating knowledge to scientifically cultivating students and guiding students to actively learn more teaching, and teachers guide and mobilize student' independent enthusiasm, promote students' independent thinking, so as to enhance students' ability to solve problems independently. Flipped classroom can increase the richness of teaching resources and enable students to learn more extensive knowledge.

### 3.3 Strengthen Students' Independent Thinking Ability

Quality education requires that in the teaching of computer courses, students should not only master theoretical knowledge, but also have good thinking ability and be able to use the learned knowledge to solve problems in practical application. Flipped classroom teaching can fully meet this demand, focus on students' ability to find and solve problems, and enhance students' independent thinking ability. Computer courses need strong practice, so that students should continuously practice and explore to enhance practical ability. Many students lack self-control after class and do not pay attention in class. Therefore, they need to give full play to the advantages of flipped classroom teaching. Before class, students complete independent learning. Teachers explain key and difficult knowledge in class, urge students to develop more practice, and cultivate students'

ability to think and solve problems independently.

#### 4. Application of Flipped Classroom Teaching Mode in Computer Specialty Teaching

Flipped classroom teaching mode has many advantages in the teaching of computer professional courses. In order to fully play the role of this teaching mode, teachers need to make sufficient pre-class preparation, organization and planning of classroom activities, timely and effective after-class evaluation, so as to give full play to the greatest advantages of flipped classroom in the teaching application of computer professional courses.

#### 4.1 Insufficient Pre-Class Preparation

Computer specialty courses can't be ignored in the current education system. Computer specialty courses mainly include computer hardware, network, software, common office software and so on. Teachers need to divide these knowledge points scientifically and reasonably, and then make the detailed knowledge points and collected data into video. The length of the video should be well controlled. It can't be too long, otherwise it can't highlight the key points, so that students' attention is easy to lose. And it can't be too short, otherwise it can't express the content clearly, and students are not easy to master the knowledge system and context. Generally, video within more than ten minutes is the most appropriate.

Students study online before class. They get videos, materials and tasks released by teachers before class for autonomous learning and practice. Independent online learning and practice enable students to have more thinking space and time, and it is easier to master and internalize knowledge. In this process, teachers can also guide and answer students' questions at an appropriate time through online means, so as to have a certain understanding of students' mastery of knowledge points in advance and be targeted in class. Teachers can also encourage students to discuss in groups, so that some students' questions can be answered in the group discussion.

For example, in the knowledge point of "conversion between different number systems", students should master the conversion methods between various number systems, so that they can use their knowledge to solve the problems existing in real life. On the basis of this requirement, teachers need to reasonably design videos, focus on the conversion method between different number systems, and focus on the demonstration of the conversion law between number systems, so as to help students master it more easily. Adding exercises in the video can help students to preview with purpose and sign their own learning tasks.

#### 4.2 Organization of Classroom Activities

In the process of flipping teaching, video materials and students' preparation before class are very significant, but how to control the time in class and how to design and organize classroom activities are the joint links that determine the quality of knowledge internalization. According to the characteristics of computer courses, teachers can adopt classroom homework, classroom discussion and other methods.

For example, in the process of "excel table" teaching, for the "practical application of setting up enterprise payroll", teachers can create an error payroll with some common problems, and then put forward questions to let students find out the errors and think independently, so as to give full play to students' potential and personality. After the students have fully thought, teachers can arrange groups to communicate and discuss, let each student in the group fully express their views, and strive to find the correct answer through cooperation. In this process, the teacher should pay attention to the progress of each group, participate in the group discussion, and actively mobilize the atmosphere of group communication and let students have deeper thinking. It should be noted that when teachers set the situation of "wrong cases", students can easily and independently learn. Teachers shouldn't copy the contents of teaching materials. Through error discrimination and correction, students can enhance their mastery of knowledge points, improve computer application ability in real life, so as to lay a foundation for the actual operation of excel in the future <sup>[4]</sup>.

In short, in classroom activities, teachers should help students deepen their understanding of what they have learned through appropriate ways, so that students can always think and learn with problems, master knowledge and apply more flexibly in real life, learn to think independently, unite and cooperate, and learn the ability to solve problems.

#### 4.3 Timely and Effective after-Class Evaluation

Teachers also need to evaluate students' mastery situation in flipped classroom. In the theoretical teaching part, the evaluation can be divided into two parts. The first part is classroom performance, such as students' answering questions in class. The second part is to the completion of students' homework. In the practical teaching part, the assessment results mainly include three parts: autonomous learning before class, students' group discussion and report, and classroom practice. Timely and effective after-class evaluation can stimulate students' learning enthusiasm and initiative.

## **5.** Conclusion

To sum up, the flipped classroom teaching mode plays a positive role in the teaching of computer courses, which can fully enhance students' autonomous learning ability, independent thinking ability and problem-solving ability, and smoothly realize the cultivation of computer teaching talents. In order to give full play to the role of flipped classroom in computer specialty teaching, teachers need to constantly strengthen the research on this teaching mode. I hope this paper will be helpful to promote the effective application of flipped classroom teaching mode in computer specialty teaching.

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