Research on the Teaching Mode Reform of Online Learning Course Based on Flipped Classroom under the Computer Technology

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Abstract. With the innovation and progress of the international education community, the renewal of teaching mode has become an inevitable trend for the improvement of education level in China. In recent years, the development of educational information technology has enriched teaching resources and learning approaches. Flipped classroom is an innovative point of educational reform. Today's students can search a lot of teaching resources and knowledge through the wide network channel of computer. Teachers can use the convenience of the network to understand students with learning difficulties. Teachers can also effectively guide students to study and explore courses online. However, the new teaching mode of flipped classroom also provides a huge challenge to the traditional classroom teaching.

Keywords: Flipped Classroom, Computer Technology, Teaching Mode, Reform

1. Introduction

With the rapid progress and reform of information technology, cloud technology and online course technology based on computer are gradually explored with the reform of education. The emergence of the computer age has broadened the way of education reform. In recent years, many excellent teaching resources and new teaching models have appeared in the Internet. On this basis, the traditional teaching mode has been greatly impacted[1].

As we all know, open and rich teaching resources will greatly liberate people's fun of learning. The appearance of flipped classroom technology confirms this sentence. At present, flipped classroom technology is a relatively popular new method of teaching mode reform in schools. According to the research of experts, the learning mode of online courses will become the most important learning mode of people in the computer age. It will promote the progress of the times and social development[2].
2. The teaching mode of flipped classroom and its main characteristics

2.1. Definition of flipped classroom

The concept of flipped classroom was first proposed by foreign universities. It can also be called reverse classroom teaching mode. The foundation of flipped classroom is rich micro curriculum resources. It turns the traditional classroom teaching over. We can understand it as that it reverses the teaching time of teachers in the classroom and the extracurricular time of students' self-study. Students should study and preview properly in their spare time. The way of self-study can be website self-study, lecture self-study and e-book self-study[3]. After finishing the task of self-study, students come to the classroom to discuss what they have learned. Teachers play an important role in the process of students' discussion. In fact, flipped classroom has changed the teacher centered teaching mode into the student-centered teaching mode (see Figure 1).

![Figure 1. Demonstration of flipped classroom mode](image)

2.2. The main characteristics of flipped classroom

The time of flipping the teaching video provided by the classroom is very short. However, the knowledge content of short video is huge. Generally speaking, students don't like watching long teaching videos. Long time video will make students have a lot of boredom. The short and concise video teaching method also meets the needs of students' physical and mental development. Flipped classroom advocates student-centered teaching idea. This kind of teaching method can help teachers understand students' learning difficulties and life difficulties more easily. Teachers can communicate with students without difference. Flipped classroom advocates that students should consult materials independently for course learning. Students' communication in the classroom can subconsciously help students to learn knowledge repeatedly[4].

3. Teaching process display of flipped classroom
A complete learning support system is the most important link to promote learners' interest in learning. Domestic teachers and students have been used to the traditional teaching mode. The teaching mode of flipped classroom is very new for them. The improvement of teaching process is also an essential part of education reform.

3.1. Provide the content of the guide reading and clarify the task of students' Autonomous Learning

Teachers need to prepare the main contents of students' next learning in advance. Teachers can use the teaching service platform to provide students with learning tasks. The key and difficult knowledge of the course learning can be made clear by asking questions in the reading guide. It is suggested that the key points of the design of the guide contents of the modules in database application are practical tasks and questions, the guidance of students' thinking, the stimulation of students' desire for knowledge and the cultivation of students' independent learning ability.

3.2. Provide abundant teaching resources to improve students' autonomous learning ability

Teachers can provide students with various academic resources in the form of websites, PPT and micro courses. It should be noted that such learning resources should include the main knowledge points of classroom knowledge[5]. If students can't use the Internet, teachers can use video recording to help students find their own learning resources. Students should learn in order according to the guide content provided by the teacher and the questions in it. Students should carry out independent inquiry learning according to the task content in order to find effective practical solutions.

3.3. The way of classroom communication can realize the exchange of students' knowledge

The teacher can divide the students in the class into several groups. Each group selects one member as the group leader. In the classroom, teachers should guide the members of each group to discuss knowledge with each other. During the discussion, students can share their knowledge with other children. In the process of sharing, students subconsciously acquire the knowledge of others. This way of learning can greatly increase the storage of students' knowledge. In the whole classroom, teachers should play the role of God. Teachers should not interfere with students' discussion. However, after the discussion, the teacher can point out some students' academic mistakes and correct them.

3.4. The setting of assignment module can consolidate the knowledge points of students

Pre-class preparation is essential. After class review can’t be avoided. According to scientists, children's brain stores knowledge for a relatively short time. In order to maintain the long-term storage of knowledge, only repeated knowledge can ensure that they are not forgotten by students. Therefore, teachers should use some auxiliary means to help students review knowledge independently after class. The setting of assignment module in traditional education can’t be avoided. The setting of homework after class can help teachers to understand the effect of students' learning. It can also help students improve their ability of independent review after class[6].

4. Research on the teaching mode reform of online learning course in flipped classroom under the computer technology

According to the above description, we can know that flipped classroom is a unique online course
learning mode. Compared with the traditional classroom, flipped classroom has changed a lot in teaching methods, teachers and students' roles and teaching content. Its basic idea is to turn over the process of learning to help learners to have better autonomous learning.

4.1. A brief summary of traditional classroom teaching

The traditional classroom teaching is that teachers impart knowledge in the classroom and students review independently after class. This kind of independent review method is often carried out by completing a large amount of homework. However, due to the lack of support and guidance from teachers and peers, the stage of review alone will make students feel frustrated, lonely and tired. This will make students lose their motivation and sense of achievement. In addition, the way of instilling classroom teaching is not conducive to students' autonomous learning. Once students get rid of the shackles of the classroom, they will lose interest and ability in learning.

4.2. The reform of online learning mode in flipped classroom

Flipped classroom can use the computer information technology teaching mode to replace the teacher's classroom indoctrination teaching. Students should have their own preview before class. Students should find all kinds of learning materials to study independently. This way of learning can greatly promote their enthusiasm for learning. In the past, learning in the classroom has become the learning way of discussion in the classroom today. After the discussion, the students go home to review their knowledge after class. According to the research of experts, this learning method can enrich students' knowledge and promote their understanding of knowledge. Flipped classroom advocates the main teaching ideas of expanding thinking, enriching practical basis, communicating feelings and shaping personality. In theory, this new teaching mode has epoch-making significance.(see Table 1)

| Table 1. Differences between traditional teaching mode and flipped classroom teaching mode |
|------------------------------------------|-------------------------------------------|-----------------------------------------|
| Option | Traditional classroom | Flipped Classroom |
| Teaching methods | Teacher centered | Student centered |
| The role of Teachers | Indoctrination of knowledge | Coaching for discussion |
| The role of Students | The indoctrinated of knowledge | Active learning |
| Teaching model | Classroom teaching | Informational teaching |
| medium of instruction | Teaching material | Various media |
| Teaching form | Indoctrination | Access to information |
| Final purpose | Learning knowledge | Autonomous Learning Ability |

5. The main measures to reform the teaching mode of flipped classroom based on computer technology

In fact, the main characteristic of flipped classroom is the transfer of computer information teaching
mode. Its essence is the advance of knowledge teaching and the optimization of knowledge internal digestion process. According to the practice of flipped classroom teaching mode in foreign countries, experts point out that the key to the success of the new teaching mode is whether teachers can design learning courseware to attract students to see actively before class and whether teachers can guide students to have a positive discussion in class.

Therefore, I think the main measure of the implementation of flipped classroom teaching mode is that we should update teachers' teaching thinking. As the physical and mental development of students is not sound, the teacher is a bright indicator on the way forward for students. Therefore, students' learning should rely on the guidance of teachers. Students may have been used to the traditional teaching mode, the emergence of flipped classroom may make students become busy. In this case, teachers must calm down and slowly develop students' ability of autonomous learning. I think this is the key to the implementation of flipped classroom.

6. Conclusion

In the computer age, the academic resources in the network have been very rich. It can be said that the information-based learning environment has provided a solid foundation for flipped classroom. As an educator, teachers must learn to use new teaching models, provide students with a greater learning platform, and bring more meaning to their learning.

Acknowledgments

This work was financially supported by 2019 Dandong Social Science Association social science social project "The impact of home-school co-education on the development of autistic children" (No. 2019ddsk120).

References

[1] Meng X. Research on College English Flipped Classroom Teaching Mode based on Micro-course under the Background of Internet+[C]// 0.

[2] Zhuo L, Shu-Ying Z, Qi-Xian G. Application research of Java technology course teaching reform based on the flipped classroom[C]// International Conference on Computer Science & Education. IEEE, 2015.

[3] Jinghe, Zhu. Research on Mixed Teaching Mode of Economic Law Course Based on SPOC+ Flipped Classroom[C]// 2019.

[4] Ling, Zhang, Jianguo. Application Research of Flipped Classroom Teaching Mode Based on Mobile Learning - Taking the Webpage Design Course as an Example[C]// 2019.

[5] Sufang 1, Li, Wenbin 1. Research on the reform of flipped classroom in computer science of university based on SPOC[C]// 0.

[6] Jin-Hua DONG, Ru-Nan JIANG. A Study on the Flipped Classroom Practice Supported by the WeChat Public Platform Based on the Blended Learning Mode[J]. 2017.