

The Application of Flipped Classroom in High School Physics Class

Hanxuan Gao, Zhendong Yang

School of Physics Science and Technology, Guangxi Normal University, Guilin, Guangxi Zhuang Autonomous Region 541000 China

Abstract: With the development of my country's economy and technological progress, various industries continue to carry out system reforms, especially in education. In order to promote the reform of new courses, the teaching model has developed diversified. It is conducive to changing the traditional teaching mode and promoting the continuous development and improvement of the quality of education. Based on the flipped classroom, this article will study its significance and characteristics through its application in high school physics courses. It will analyze the current problems and put forward corresponding solutions to improve high school physics classroom teaching. Quality, lay the foundation for the advancement and development of students.

Keywords: Flipped classroom; High school; Physics classroom

Foreword: Physics learning is an important subject in the high school education stage. It has higher requirements for students' logical thinking ability and social practice ability. When studying physics, students should not only pay attention to the analysis and research of theoretical knowledge, but also go through Repeated practice and application, so as to form good behavior habits, to improve students' physical thinking ability, and apply the learned physics knowledge to real life. At present, high school students have insufficient social experience and their thinking logic is still in the formation stage. There are many difficulties and obstacles in learning physics. It is difficult to grasp the essence of learning. Flipping the classroom has great advantages, which can improve students' imagination and change their logical thinking and creative ability. The flipped classroom that combines pictures, video and audio can get rid of the traditional theoretical teaching mode, pay attention to the main status of students, and lay a good foundation for physics learning.

1. The concept and significance of flipped classroom

Flipped classroom adapts to the trend of social development and meets the requirements of quality education. In the process of teaching practice, it has been praised by teachers. This creative teaching mode has changed the main body of teaching. It will teach the original teacher in the classroom, and the students will learn in the classroom. Assign homework, the teacher understands the student's knowledge mastery, this teaching mode is reversed^[1].

2. Problems of flipped classrooms in high school physics teaching

2.1 Flipped classroom has limitations in the choice of teaching content

As we all know, the implementation of flipped classroom has great advantages, but in physics teaching, part of the teaching content is not suitable for flipped classrooms. It conveys a concept of physics knowledge that requires teachers and students to communicate face-to-face to achieve the teaching effect. Therefore, When teaching, teachers should combine the actual situation, seek truth from facts, and avoid blind use of flipped classrooms, which will cause confusion to students and reduce the quality and effectiveness of teaching.

2.2 The degree of student participation is not high

In high school physics teaching, the flipped classroom more reflects the autonomous initiative of students. The ability of students to learn independently has an important impact on the flipped classroom, so students develop good learning habits, which is conducive to the efficient implementation of flipped classrooms. In real life, for students with high independent learning ability and strong self-discipline, they feel that they have mastered the teaching knowledge through video learning. When the teacher conducts classroom teaching activities, they feel that they have mastered the knowledge in the classroom. Discussion is meaningless. Facing this situation, teachers need to change their teaching plan and adopt corresponding teaching methods according to different students. For example, formulate stepped teaching to meet the requirements of students at all stages and let students participate in the classroom. Come^[2].

3. The effective application of flipped classroom in high school physics curriculum

3.1 Accurately locate teaching content

For high school physics textbooks, teachers should improve their own discrimination ability, accurately position the course content, and distinguish which teaching content is suitable for flipped classrooms and which are not suitable for flipped classrooms. The implementation of flipped classrooms requires students to master and memorize classroom content. To achieve the teaching goal,

it is necessary to know in advance whether the course content matches the student's ability to accept, so as to design high-quality teaching content.

3.2 Improve students' autonomous learning

Flipped classroom has high requirements for students' autonomous learning, attaches importance to student learning initiative and enthusiasm, and at the same time turns teaching from passive to active, forms a scientific and reasonable teaching concept, and allows high school physics classrooms to be effectively carried out. How to give full play to the subjective initiative of students in learning, teachers should start from the perspective of students, accurately understand students' interest in learning, combine students' interest with teaching content, and achieve the purpose of teaching. For example: in the teaching of acting force and reaction force, the teaching can be carried out in the form of games. The physics teacher can invite 4 students and divide them into 2 groups. Two groups stand opposite each other in front of the podium, and the first group of students push each other. The other party, observe whether they are leaning back; in the second group, one student does not move, and the other student pushes each other hard to see if both of them are leaning back, and then perform the exchange, repeat the experiment, and guide the students to teach them. Students discuss what is the relationship between the interaction of two objects, and summarize the view that the effect of force is mutual. In teaching, it is necessary to combine the situation of different students, seek truth from facts, fully consider the individual differences of students, and carry out differentiated design of teaching content. Teachers should actively communicate with students during the teaching process, deal with the problems encountered by students in a timely manner, encourage and guide students Become the main body of learning and give full play to students' subjective initiative, thereby improving learning efficiency and ensuring the quality of learning.

4. Conclusion

In summary, high school physics teaching overcomes the traditional conservative concepts of teaching, fully integrates with educational information, and effectively uses the flipped classroom teaching model. It is an innovation in the physics curriculum under the new curriculum standard, allowing students to learn the physics process In, improve learning ability and practical operation ability. Flipped classroom can change the traditional single solidified teaching method and diversify the teaching mode. Therefore, flipped classrooms are of great significance in high school physics teaching. Teachers should make reasonable use of flipped classrooms, continuously improve educational concepts, change educational methods, and strive to maximize flipped classrooms in physics learning.

References

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- [1]Wang Jingying, Zhang Yue. Research on the effect of flipped classroom teaching in middle school physics based on modeling mechanism[J]. Audio-visual Education Research, 2016(9):116-122.
- [2]Lian Xuyan. The application of flipped classroom and interactive teaching in physics teaching[J]. Middle School Physics Teaching Reference, 2018, 47(20):16-17.