Deep Integration: Research on the Construction of OMO Teaching Mode

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Abstract: *OMO teaching mode is an efficient classroom that deeply integrates the online and offline teaching process into the three links of pre-class preview, in-class comment and after-class Q & A teaching, giving full play to the dominant position of students in learning, and realizing the complementary advantages and mutual promotion of online and offline teaching. Flexible response to students in the case of force majeure, their own needs in the form of class, give full play to the reuse of information technology means, so that the classroom becomes easy to participate in, students are willing to learn. In order to promote the integration of online and offline classes, we should build a rich shared resource bank, reduce the pressure of teaching preparation, and prepare for the subsequent promotion of OMO teaching mode.*

Keywords: *Online and offline; Deep integration; Teaching mode*

1. Introduction

Since the COVID-19 epidemic, teachers or students are often unable to come to school normally. At this time, online teaching plays an important role in primary and secondary school teaching. However, while satisfying the suspension of classes, it also exposes the problems of weak sense of presence, lack of face-to-face communication and low learning efficiency [6]. Through the questionnaire, the author found that 27% of the students thought that online teaching could not be understood and could not adapt to the teacher's teaching. 53% of the students think that online teaching has a certain effect, and they can understand it by communicating with teacher's offline. 20% of the students think the online effect is good. Mathematics, as a compulsory course for every major in secondary vocational schools, is highly theoretical and difficult for students to learn, which often makes students afraid of difficulties. Students with better grades can complete their studies independently. Online learning can often improve their learning efficiency. Students below the middle level will have a decline in their grades after a long period of online learning. In the absence of face-to-face offline teaching, teachers usually do not pay attention to learning, and cannot ask questions to teachers in time, and it is difficult for teachers to grasp whether they really understand learning in online Q & A [5][7][8]. The root of the problem is that online and offline teaching cannot be simply used alternately, and the way of online teaching cannot be the traditional way of repeating offline teaching. Teachers should seek more efficient teaching methods of online and offline deep integration. Based on this, this paper puts forward a new teaching mode of OMO (Online Merge Offline). OMO teaching mode gives full play to the advantages of breaking time and space online and also gives full play to the convenient and interactive learning atmosphere offline. It has played a positive role in students' learning habits and academic performance.

2. Current situation of online teaching

The outbreak of COVID-19 in early 2020 forced teachers and students to shift their teaching activities from offline to online. With the continuous maturity of online classroom technology, online teaching mode has been accepted by more and more teachers and students. Online teaching has the advantage of breaking the limitation of time and space. If students are sick and cannot participate in classroom learning on time, they can watch the playback by themselves, which can also have a good learning effect. With the gradual stabilization of the epidemic, we have entered the post-COVID era, at which time many new problems have arisen. First of all, in the whole school network live broadcast, there is often a network stutter, the viewing effect is not good, resulting in students losing patience with

online learning, and even absenteeism on the grounds that the network is not good, and then more and more students have a feeling of online learning. Secondly, long-term online learning is very harmful to students' eyes, and the intense online video broadcasting also makes students' psychological pressure too great, resulting in many psychological problems, and some students are tired of learning. Thirdly, some students have poor learning enthusiasm. They often chat secretly, play games, or even hang up to listen to the class. They cannot really concentrate on listening to the class, and the learning effect is poor. Finally, after the epidemic gradually stabilized, online and offline teaching switched back and forth, many students cannot adapt well, sometimes do not know whether the knowledge points in the classroom have been explained, whether the homework is submitted online. At the same time, teachers are also under great pressure in class. Generally, teachers need to prepare online and offline teaching resources at the same time, which takes more time. In the process of online teaching, teachers and students lack effective interaction, lack of intuitive feeling of students' learning state, cannot grasp the process of students' thinking exploration, and the classroom effect cannot be truly implemented. Under the guidance of the new curriculum standards, the learning of mathematics knowledge in secondary vocational schools pays more attention to the cultivation of students' logical thinking quality. In order to achieve this goal, it is necessary to constantly carry out dialogue and communication between teachers and students, students and students, but online teaching is difficult to achieve. In the online classroom environment, teachers cannot really teach students in accordance with their aptitude. After a long period of accumulation and precipitation, offline teaching has many irreplaceable advantages.

The author conducted a questionnaire survey on the online learning status of 125 students in three classes, and the results showed that most of the students had weak awareness of online autonomous learning, vague autonomous learning objectives, lack of good autonomous learning habits and effective self-supervision. This is mainly reflected in the fact that it is difficult for students to maintain a high degree of concentration in online learning for a long time. Under the digital learning environment, students' attention to text and video content will continue to decline if they continue to learn for more than a certain period of time. In interviews with teachers and parents, most of them will mention. It is difficult for students to participate in online learning seriously at home, and they will be attracted by online chat or games. Some students often listen to lectures on mobile phones or computers, they may be sleeping and resting, and the content of online lectures often needs to be re-taught offline, which wastes the time and energy of teachers and students. So how to realize that offline classes can be accepted by students as well as online classes, how to learn independently by students, and the deep integration of online and offline teaching are worthy of teachers' consideration.

3. Method

OMO (Online Merge Offline) was put forward by KAI-FU LEE in 2017, which attracted wide attention of scholars from all walks of life, and began to explore a new teaching mode based on OMO. OMO teaching mode deepens the integration of information technology and education and teaching, and realizes the organic integration of online and offline teaching. OMO teaching mode makes full use of the advantages of information technology to break the time and space constraints to meet the needs of students to learn at anytime and anywhere [2] [3]. At the same time, the effective interaction of offline classroom makes up for the lack of communication in the network classroom, and it is easier to find the complement of learning in face-to-face teaching, so as to help students correct the wrong knowledge in time. OMO teaching mode requires teachers to do a good job of reasonable teaching design, so that online resources cannot be separated from offline teaching. Make full use of information technology in teaching, so that students can easily use the learning platform, the platform can also be a good monitor of learning, timely feedback to the relevant teachers. Finally, we should choose online or offline on the premise of meeting the needs of students, not to cope with teaching. When implementing the OMO teaching mode, we should pay attention to the current learning status of students and the number of people who can learn offline. Pay more attention to the physical and mental changes of students in the offline class, find out whether students can really participate in the class in time, and pay attention to individual students who can't seriously participate in the online class in time [4][9].

3.1. OMO Instructional design

OMO instructional design requires teachers to take into account the differences in student learning caused by different online and offline teaching environments. Teachers must fully consider the close combination of online and offline content arrangements, so that students can get a good learning experience online or offline. Before class, teachers should collect relevant resources and make teaching

courseware according to the actual teaching content and learning situation analysis. Teachers should integrate teaching resources to achieve the unity of online and offline. For example, on the nail platform, preview tasks are arranged for students to study independently online in advance. Offline teachers should further adjust the content of offline classroom teaching and improve the pertinence of offline teaching according to students' online message feedback and offline pre-class test. Secondly, because students have digested some basic content before class, teachers should respect students' dominant position more in the mixed teaching class, let students take the initiative to raise problems in online learning, and explore and solve problems independently offline with the help of teachers. Moderately open and flexible teaching environment makes students willing to participate in classroom teaching, whether online or offline is not forced. Offline teaching strengthens the centralized comment on key points, difficult points and error-prone points. Finally, we should also do a good job in the situation that some students are temporarily unable to participate in learning, and formulate a learning guide plan that can be learned by them, so that students can also have the opportunity to learn the knowledge taught by the teacher in the classroom after recovering from health. At the same time, students who are weak in learning can also use their spare time to repeat what the teacher said. Therefore, when designing the learning guide plan, we should try to be as detailed as possible. For the knowledge points, we should try to explain them in layers that are simple and easy to understand. It is difficult to practice different test questions to assist.

3.2. OMO answer mode

The advantage of online teaching is that it can break the limitation of time and space, so we should give full play to this advantage [1]. Whether online or offline teaching, students will have a lot of puzzling knowledge, which requires timely answering questions. Teachers can divide students into groups and set up online question-answering groups. In each group, there are students with better learning and students with general level to form mutual learning groups. When other students ask questions, the group can discuss them first, and seek teachers' help in time when they can't solve the problems, which can help students solve their puzzles in time and improve their learning efficiency. At the same time, the problems that cannot be explained clearly online or the problems of most students can be explained in the classroom with typical cases of homework, so that students have a strong desire to solve problems, and their enthusiasm for learning is higher. At the same time, in daily teaching, students will have many courses to learn. They may not be able to find the teacher in time when they encounter problems, or the teacher cannot answer the students' questions when they go out. At this time, online question answering groups can be used to record the questions and wait until the teacher is free to deal with them immediately, so as to avoid the possibility that the problems are not dealt with in time.

3.3. OMO Resource database construction

Curriculum resources are the prerequisite for the implementation of teaching activities. The construction of online and offline resource library should be an organic whole, rather than copying the traditional classroom into online teaching. The resource library should contain preview content suitable for online publishing, mind maps of knowledge points, PPT courseware, MOOC videos and so on. Teachers should record the teaching video of each lesson so that students can learn independently in time when they can't listen to the class in time, because during the epidemic period, students can't physically participate in the class in time. The release of content should be accurate and useful, and can be easily downloaded and used by students. Good use experience is also one of the ways to improve interest in learning. The information in the question-answering group can be sorted out and provided to students, because in the actual teaching, students will be unwilling to let others see that they do not understand the situation, they can find the answer independently in the question-answering group, so more and more people dare to speak out their questions and participate in learning. At the same time, online and offline resources should be targeted, not repeated learning twice, which will discourage students' enthusiasm for learning. Online should pay attention to the construction of resources suitable for timely communication, and offline should pay attention to the construction of resources suitable for face-to-face communication and improving thinking training. Finally, in the construction of the resource database, the differences between students at different levels should also be considered, and the learning resources should also be recorded at different levels. For students with good learning ability to deal with complex problems, open problem resources can improve their innovative thinking ability. Students with weak learning ability can use more simple and understandable learning resources to watch and learn repeatedly until they understand.

4. Results and Discussion

Teachers should pay attention to guiding rather than leading, return the initiative to students in the classroom, and fully stimulate students' subjective initiative. Teachers arrange pre-class preview, after-class homework, summarize tasks and expand resources through the online platform, help students consolidate and expand knowledge offline, and adjust the time ratio of classroom comment and inquiry in time according to the feedback of students' homework, so as to find the optimal balance, and concentrate on commenting on the knowledge points with more errors in the next class. Establish the mode of teachers' comments and students' mutual comments, strengthen communication and communication, and display excellent homework in a unified way to create a good learning atmosphere. In actual teaching, it is easy to find that the lack of supervision of students in online teaching is the biggest problem. Once students lack the ability of autonomous learning, online learning will not be carried out effectively. Therefore, we should select suitable student leaders in the construction of the question-answering group to lead the students in the group to learn, which is both supervision and help. In the construction of resource library, it is convenient for students to find appropriate learning resources, help students establish appropriate learning objectives and methods, especially correct demonstration learning or interesting inquiry activities.

5. Conclusion

This study proposes a deep integration of OMO teaching mode, and the results show that this new teaching mode can fully support students to overcome the time and space barriers of learning, and improve learning efficiency. In order to realize the online and offline hybrid mode of curriculum teaching reform, we should not only use offline classroom teaching, but also use a lot of online teaching time to obtain information, so as to meet the personalized learning needs of students. In order to achieve good teaching results, teachers should also make full use of information technology, division of labor, cooperation and sharing of resources, design teaching resources suitable for OMO teaching mode, and combine online and offline classes in depth. Through the blended teaching mode, it can not only extend the classroom learning space to the cyberspace outside the classroom, but also broaden the learning channels of students and improve their learning efficiency. Finally, online and offline learning is the most important thing for students to learn independently. How to enable students to study seriously without supervision, the effectiveness of online learning resources, and the impact of online learning on offline learning are all issues worthy of in-depth consideration.

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