

Practice Analysis of Online Primary School Mathematics Teaching Combining Autonomous Learning and Cooperative Learning

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Abstract: At present, the rapid development of network platform and information technology also leads to modernization and innovation in the field of education. Amid the novel coronavirus pandemic, most teachers have formed online mathematics teaching system to meet the learning needs of elementary school students. That is, through pre-class learning plan guidance, micro-class teaching mode, study group demonstration and mutual evaluation, online answers, giving full play to the interaction of online platform, group cooperation, display of learning results and mutual evaluation of students.

1. Introduction

Mathematics is a basic key subject in primary school, and it is also challenging for students to study mathematics in primary school. Research and develop the new method of mathematics teaching in primary school is the topic whenever.

2. An overview of online teaching mode of primary school mathematics

Online mathematics teaching in primary school is a kind of mathematics teaching method to assist primary school students with network technology. It is not only beneficial to the cultivation of students' good mathematics learning habits, but also can further improve their ability of independent exploration and collaborative learning and the formation of basic mathematics knowledge system and rational thinking. Online teaching can further enhance student-parent interaction and establish home-school collaborative educational mechanisms during the pandemic [1].

3. The main forms of online teaching

3.1 Teaching

Primary school mathematics teachers can use a variety of online teaching methods in the process of teaching students to achieve deep learning. Through online teaching, teachers can transform abstract and complex points of knowledge into visual images or animations to arouse the curiosity

and curiosity of primary school students. It will also help primary school pupils understand math better. Improving the efficiency and quality of classroom teaching. This kind of teaching method can improve the students' mastery of knowledge effectively. Teachers, as “guides” in the classroom, guide students to self-reflection and communication, and lighten the psychological burden of students and parents.[2]

In the case of limited course time, teaching can be carried out in the form of coursework introduction, micro course video playback, group presentation interaction and extension of teacher's questions and answers. In the classroom, the teacher should guide the students to carry out cooperative exploration activities. Homework may also be assigned after class.

3.2 Online platform and application

Students can watch micro-course videos on learning platforms and actively seek answers to questions, as well as interact in study group to help each other solve problems. The teacher combines his own teaching experience to analyze the results of these classroom discussions and make suggestions. Finally, the teacher assigns the prep task, asks the student to prepare in advance the work, guarantees that the student's online prep time will not make the mistake.

Students should not only master the basic knowledge and skills in the classroom, but also pay attention to the improvement of abilities. Teachers combine the content of the lesson plan with other knowledge so that students can complete their homework after class and display the results online. In this way, students can get more extension knowledge in the classroom, improve their ability to learn autonomously, and deepen their understanding of math.

4. The practice of integrating autonomous learning with cooperative learning in primary school mathematics online teaching

4.1 Learning plan guidance link

Teachers need to teach students about learning methods, thinking systems and creativity around the ultimate goal of online math teaching when compiling school plans. This article takes the elementary school mathematics curriculum "angle initial knowledge" as an example, from the teaching content and the pre-lesson content two aspects, proposed the realization three-dimensional teaching goal strategy: uses the online teaching platform, uses the virtual clearance game to arouse the student's independent study interest, exploits the student's exploration potential; After the prep is complete, the teacher then arranges time to practice consolidating the designed topic so that the student can better understand the points of knowledge and be able to use them skillfully. This can not only improve classroom efficiency but also cultivate students' thinking ability.

In the prep process, the teacher will guide the students through the first level of knowledge - understanding and memory of basic knowledge. He will help the students to deepen their understanding of the knowledge points by using pictures and diagrams, so that they can intuitively understand the relationship between angles and angles through images such as arrows and circles. In this way, students can deepen their understanding of knowledge.

The second and third stages of the prep focuses on process and method. This part helps students develop a stronger sense of hands-on skills and basic space concepts. Teachers can guide students through their daily lives to where the angle belong, determine what kind of angle they belong to. The last is drawing them on blank paper and then measure them further.

The first two levels are to let students know what they need to know to lead them to the next stage of their studies. The third level is for students to review and consolidate, deepen their

understanding of basic knowledge. Through the above series of methods, students can preview the game after three times to form a certain understanding of the basic knowledge, can also lay a foundation for future classroom learning.

4.2 Courseware, micro-lesson assistance links

Primary school math teachers can make PPT courseware and record the presentation as a microlesson to be uploaded to an online learning platform. For primary school children, "microlessons" are short and sharp. The teacher can add some interactive links in the classroom, let students establish their own knowledge induction framework, to understand the micro-courses involved in the knowledge points and learning methods, so that students can not only broaden the cognitive aspect, but also develop students' thinking, improve students' ability to analyze problems and solve problems [3]; Teachers should also make full use of Internet resources to enrich teaching materials, enhance the interesting content of teaching materials and classroom content organic combination, to help students better grasp mathematical knowledge. In the extended content, students can also learn about mathematical formulas and the development of mathematical concepts, and further explore appropriate mathematical learning methods to deepen understanding of the concepts and formulas.

4.3 Group cooperation and exchange links

Taking fully into account students' individual learning abilities and personality differences, they are divided into several study groups, each of which has an online communication group in which students can communicate and help each other through online platforms. Teachers divide student presentation groups into groups based on their ability to learn and speak, with each group completing tasks through collaborative learning. In the lesson plan, teachers should guide students to think independently, make micro course videos and encourage students to explore autonomously. Individual puzzles and problems can be communicated to students in study groups. Peer communication is more beneficial to solving problems. Activities such as collaborative learning and helping each other in study groups are also essential to help students better understand knowledge and improve problem-solving skills.

4.4 Presentation and sharing of results

Students after a series of learning links, the basic knowledge of the content of a profound grasp. On the basis of this, the presentation of the group's results is designed. Members of the group may take turns demonstrating or selecting student representatives to share or encourage introverts to demonstrate their performance. In this process, students should be fully aware of their own learning problems and propose appropriate solutions to these problems in order to improve classroom efficiency. Then there's the after-school communication phase. Each group uploads a video of the presentation to an online platform, while students in other groups evaluate what is presented. This can also help the presented group and students reflect and summarize themselves, while teachers make targeted assessments and guide them through deep thinking.

4.5 Teachers answer questions and individual counseling

According to the difficulties and challenges students face when studying mathematics, teachers use online teaching platform to explain and guide them, and carry out a thorough and comprehensive analysis of specific problems. Teachers can help them to solve difficult problems

and promote communication and interaction among students by making detailed presentation videos, conducting communication interactions and inspiring questions. For students with learning problems, teachers can use online platforms for private chat tutorials to help students solve them. Through this kind of auxiliary teaching method, the classroom efficiency can be improved effectively. Teachers should pay attention to enlightening and praising students in the process of instruction, and set up a record table of students' progress with the help of an online platform, so that students will have a stronger sense of experience and gain in the process of learning mathematics.[3]

4.6 Mathematical knowledge extends the reading link

Teachers should choose mathematics books and e-materials which are suitable for students to read, build a good teaching platform, formulate a reasonable reading plan, enrich the reading content and optimize the reading process according to their different learning abilities and growth stages.

With the help of school network curriculum resources to enrich the primary school extracurricular reading sources, promote students to choose their own excellent books suitable for their own development. Through the online home-school interactive platform, exchange books with students, further develop students' interest in math learning and innovation ability [4].

4.7 Teaching evaluation link

When teaching evaluation is carried out, in order to diversify the evaluation subjects, students' self-evaluation, group evaluation, teacher evaluation and parent-assistant evaluation need to be combined effectively. In this process, teachers-students, parents-teachers can also effectively communicate and interact with each other, and provide some rewards to students with better evaluation results. [5]

5. Conclusion

In the integration of autonomous and cooperative learning conditions, to make the efficient construction of “online” math classroom in primary school. Teachers must adapt to the current trend of educational reform and the needs of students to develop teaching plans scientifically and rationally in order to promote the healthy development and growth of students.

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