Best Practices of Flipped Classroom Teaching Based on "Rain Classroom" Platform in Application-Oriented Private Universities in Shandong Province

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Abstract: As a new smart teaching solution, "Rain Classroom" is widely used in the innovation and reform of classroom teaching in various disciplines. This article takes 12 parallel classes of the 2019 preschool education major in Weifang Institute of Technology as the research objects, and develops the teaching practice of "Rain Classroom" applied to the flipped classroom of the "Pedagogy" course. Research shows, the scores of the experimental group were higher than those of the control group, and the results of the questionnaire survey also showed good results.

1. Introduction

"Pedagogy" is an important basic course offered to normal students who will be teachers in Weifang Institute of Technology. The scope of its research is mainly some basic theories, principles and laws of education. It has a profound impact on students forming modern educational concepts and grasping teaching skills. The preschool education professional training program requires 18 weeks of teaching in "Pedagogy", 36 hours, and 2 credits. The training objectives require that the graduates of this major should have correct professional ethics, cutting-edge educational thinking, have a deep understanding of various professional theories, and further grasp the comprehensive professional skills.

At present, most teachers teach the "Pedagogy" course in a traditional mode. Although the course format has added some group discussions and after-class practice, it is still a bit boring, and the students may not enjoy the class. Teachers are unable to grasp the learning status of students before and after class. The classroom efficiency is low. Under the traditional education model, the examination method of "pedagogy" is relatively simple. It is calculated through the usual grades and final exams to calculate whether students can pass, and the usual grades are single. Such an education method is not adapted to the schooling philosophy of Weifang Institute of Technology, to be an applied undergraduate college. It is difficult to cultivate compound talents that meet the needs of the country and society. Based on this, the pedagogy curriculum reform is very critical in our school. Therefore, this article takes the 12 parallel classes of the 2019 preschool education major in Weifang Institute of Technology as the research objects, and carries out the teaching practice of "Rain Classroom" applied to the flipped classroom of the "Pedagogy" course.

2. Introduction to Flipped Classroom and Rain Classroom

In many traditional classrooms, it is difficult for teachers to have a clear grasp of the situation of each student because of individual differences, which may affect students' accepting abilities. Many students can not keep up with the teacher's classroom rhythm and the content taught in the learning process, and the learning process is stumbling, so the learning efficiency is greatly reduced. The form of flipped classroom encourages students to start active learning based on the material recorded by the teacher, and then interact with the teacher in the classroom. Under the premise of implementing flipped classrooms, teachers can use teaching videos to enable students to refer to their respective conditions to optimize their learning methods, improve their own progress, and help solve problems, such as inability to adapt to the teaching rhythm, independently adjusting learning plan. Based on this, the flipped classroom has a profound impact on autonomous learning.

In April 2016, Xuetang Online cooperated with the Online Academic Affairs Office of Tsinghua University to create a free teaching system with perfect functions and technical advantages, namely "Rain Classroom". The software combines various information technology and PowerPoint combined with the WeChat platform to allow teachers to carry out teaching. The materials are transferred to students' mobile devices, so that they can preview in advance, answer questions from the classroom, and have in-depth interaction with classmates. As a result, teachers and students have a comprehensive data platform to improve classroom efficiency.

3. The Best Practice of Flipped Classroom Teaching on the "Rain Classroom" Platform

3.1 Practical Research Objects and Methods

3.1.1 Research Objects

In terms of research objects, 12 parallel classes of preschool education major of Grade 2019 were selected, and the experimental group and the control group were distinguished. Classes 1-6 were the experimental group, where the new teaching model of "Rain Classroom" was adopted, and the total number of students participating was 272. Classes 7-12 followed the traditional teaching model, and the number of these students was 274. In terms of student selection, there was no significant difference in the age, gender, entrance scores and other aspects between the two groups. In terms of teaching implementation, there was no difference in the training plan, curriculum implementation, syllabus, teaching content and teachers between the two groups.

3.1.2 Research Methods

The new teaching model of "Rain Classroom" was chosen in the experimental group, while the traditional teaching model was used in the control group. On this basis, questionnaire surveys were carried out based on the students' learning situation, and related data were integrated through the distribution and recovery of the questionnaires, and further perform descriptive statistics. Based on the effective use of the rain classroom online system, this paper differentiates the teaching of "Pedagogy", including three stages of "pre-class preview, in-class teaching and after-class tutoring", which greatly improves the classroom efficiency and teaching quality. This method gives full play to the initiative and enthusiasm of students, truly reflects the subject status of students, improves the ability of independent learning, breaks through the time and space limit of teacher-student interaction, offers timely feedback of students' questions and performance, and makes students more interested and focused in learning.

3.2 The Teaching Practice Process Based on Rain Classroom

3.2.1 Preview Before Class

Teachers input Pedagogy teaching resources such as teaching plan, syllabus, teaching objectives of each chapter and section, teaching courseware, teaching important and difficult points into the online system of "Rain Classroom". Students of experimental observation group used the platform of teaching resources for preview according to the teachers' released preview task. In the preview process, students could mark the difficult content on the teaching courseware as not understood. Students could be initiated through the platform to discuss or answer questions, teachers through the platform side can know the progress of the students to preview before class, effect and summary of student knowledge and problems. The students in the control group previewed the lesson through the textbook "*Pedagogy* "and the electronic teaching materials provided by the teacher. Teacher could not accurately grasp the progress and effect of the students' preview in the control group, and even didn't know whether the students previewed or not.

3.2.2 In Class

Before the class in the experimental group, the teacher generated the QR code to let the students enter the class through the teacher side, so that the teacher could quickly and accurately learn the attendance information of the students. In the teaching process, the teacher emphasized on the explanation of the questions and difficult points that students encountered and marked before class. Meanwhile, the fact that students clearly knowed the emphasis and difficulties of communication with their teacher, this method contributed to effective interaction between teachers and students greatly. Through discussion and teachers' leading, students were capable to have a basic understanding of the knowledge system and their ability to solve problems is improved in this period.After the basic knowledge system is explained, classroom tests can be applied to test the teaching effect in time, and students should further play their dominant position in the process of discussion and answering questions in class, from "let me learn" to "I have to learn", "I must learn". Teachers can selectively display classroom test results, and give timely praise to students with high accuracy rate, so as to further enhance students' sense of achievement. Meanwhile, they can give precise guidance and explanation to students who lack mastery. For the problems with low accuracy, detailed and in-depth explanation can make students' attention more focused, teaching objectives more clear, and student training more accurate. At the same time, bullet screens and red envelopes can also be used to attract students' attention and interest in learning. The students in the control group adopted the traditional teaching method, and there was no difference in the teaching plan, courseware and classroom test. The traditional way actively played the leading role of the teachers. The teaching interaction was carried out by traditional methods such as question and answer, discussion, etc., and the classroom test was carried out by electronic version.

3.2.3 After Class

After class, in terms of unfinished tasks and teaching aims, the teacher could assign individualized tasks to each student with the help of data collected by "Rain classroom" . According to teaching reflection and comparison with teaching objectives in the teaching process, the teacher was able to teach students in accordance with their aptitude, and provided students with individualized and comprehensive feedback. Students in the traditional group used traditional homework, and teachers assigned unified homework for correction.

4. Data Analysis and Interpretation

The study was conducted from September 2019 to January 2020. The evaluation is conducted in

two stages. The evaluation methods included test assessment and questionnaire survey, in order to comprehensively evaluate the teaching situation of the experimental group, combined with the students' identification in the "Rain Classroom".

4.1 Mid-Term Exam

In the middle of teaching, the teacher conducted mid-term tests on both groups of students. The test results showed that the average score of the experimental group was 85.5 points, while the average score of the control group was 82.1 points. The average score of the experimental group was 3.4 points higher than that of the control group.

Group	The number of students	The mid-term grades
Experimental Teaching Section	272	85.5
Traditional Teaching Section	274	82.1

4.2 Final Exam

After the course, the teacher conducted a final test on both groups of students. The test results showed that the average score of the experimental group was 88.7 points, while that of the control group was 84.3 points. The average score of the experimental group was 4.4 points higher than that of the control group.

Group	The number of students	The final result
Experimental Teaching Section	272	88.7
Traditional Teaching Section	274	84.3

4.3 Practice Assessment

After the course, the teacher conducted a practical assessment on the teaching skills of the two groups of students (according to the four dimensions of very good, good, qualified and unqualified). The operational test is a 10-minute demo. In the experimental group, 35 cases were very good, 152 cases were good, 79 cases were qualified, and 6 cases were unqualified. In the traditional teaching group, 20 students were very good, 117 students were good, 94 students were qualified, and 43 students were unqualified.

4.4 Questionnaire Survey Results

After the teaching, the teacher conducted a survey on the students who implemented the "mixed teaching method based on rain classroom platform" by means of questionnaires. The survey was

completed anonymously and collected on the spot. According to the survey results, 86.1% of the students in the experimental group approved of this teaching method. They recognized attendance management, timely feedback from teachers, interesting class style, significant improvement of learning interest and obvious teaching effect. However, 13.4% of the students thought that this teaching method had a high demand on the Internet, and the students felt tired in class, and the pre-class preview and after-class tasks were heavy.

5. Research Conclusions and Recommendations

The "Rain Classroom" teaching platform provides functions such as preview before class, instant response in class, large screen barrage, data analysis, etc., which establishes a foundation for the further development and implementation of flipped classrooms. Applied universities require students to focus on how to transform theories into practice based on understanding and mastering theories, that is, how to apply theories to practice. Based on the implementation, the Rain Classroom teaching system fully demonstrates the student's dominant position.

Informationization, modernization and computerization is the development trend of The Times. As an application-oriented undergraduate college, Weifang Institute of Technology lays emphasis on the cultivation of students' practical and theoretical ability. The concept of the school and and requirements of the major are fully embodied in the implementation of the teaching method, which highlights the leading role of the teacher and enable students to further feel and understand their subject position. The teaching effect is obvious. The research and application practice in Weifang Institute of Technology preschool education professional grade 2019 students of the pedagogy teaching, The results showed that although students didn't adapt to this teaching method in the early stage, but after four classes teaching, they could fully grasp the rules and enjoy the teaching way. This method is helpful to realize the educational teaching objectives accurately, complete the "pedagogy" teaching tasks successfully, and lay a good foundation for students' independent learning.

6. Conclusion

In summary, no matter from the results of practice, assessment or survey, the teaching model of Rain Classroom plus flipped classroom has great advantages compared with the traditional teaching model, and it is also very popular among students. Of course, this teaching model has some imperfections. For example, it is difficult for students with low self-discipline to supervise their learning. Therefore, teachers and schools still need to listen to and absorb feedback from students, actively adjust and make corrections. However, on the whole, the classroom breaks the limitations of previous teaching, creates opportunities for the educational reform of private universities, and further improves the teaching effectiveness, especially the efficiency of teaching, which is conducive to achieving the expected goals and efficient learning.

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