

Original Paper

Science Education for Preschoolers Based on Superstar Learning Access Course Blended Teaching Practice

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Abstract

The rapid development of information technology is changing and even subverting the traditional mode of education and teaching practice. Mixed teaching is an effective way to reform the teaching mode, realize resource sharing and improve the quality of talent training. Based on the concept of hybrid teaching definition, this paper to master learning theory and active learning theory as the theoretical basis, based on super learning online platform of preschool children science education course hybrid teaching practice, further discussed before class, class, after class three stages of teachers and students, in order to provide the experience of mixed teaching reform.

Keywords

superstar learning, preschool children science education, hybrid teaching

1. Introduction

At the 12th Xinhua Education Forum, Wu Yan, director of the Department of Higher Education of the Ministry of Education, said that we should make every effort to grasp the “new infrastructure” of higher education and teaching, grasp the profession, grasp the curriculum, grasp the textbooks, grasp the methods of learning technology, grasp the teachers, and do a good job of these “five grasps” to raise the quality of higher education. High quality of higher education. Curriculum is the core element of talent cultivation, without good classes, all the work may fall through. At present, the development of education informatization has entered a new stage, across time and space, cross-disciplinary online learning, flipped classroom, blended learning and other new learning modes continue to emerge, prompting college teachers to break the traditional teaching mode, and quickly adapt to the change of the education model in the information age. Catechism platforms such as Xaitang Online and Love Course, and teaching platforms such as Super Star Learning Pass, Tencent Classroom and Rain Classroom provide platform support for realizing blended teaching.

Based on the relevant conceptual definitions of blended learning and blended teaching by different scholars, this paper cites the conceptual definition of blended teaching by scholar Li Fengqing: blended teaching refers to a teaching method that allows appropriate students to form appropriate abilities at the appropriate time, through the application of appropriate media technologies, and the provision of resources and activities that are compatible with appropriate learning environments, so that the optimal teaching effect can be achieved.

Science Education for Preschool Children is a core compulsory course for preschool education majors, which is offered in the fifth semester, and the prior courses are Preschool Pedagogy, Science of Preschool Child Development, Kindergarten Play Activities, and Kindergarten Educational Activity Design and Guidance. Combined with the school’s orientation of “applied, local and international”, “based on Shaanxi, facing the west, serving the local community”, and according to the requirements of the talent cultivation program for preschool education majors, this course adheres to the concepts of “cultivating morality, moral education” and “giving priority to moral education”, and focuses on the concept of “cultivating moral education, moral education” and the concept of “cultivating moral education”. This course adheres to the concept of “establishing moral education and moral education first” and takes the direction of improving students’ science teaching literacy, so that students can master disciplinary knowledge and experience, relevant theories and concepts of pre-school children’s science education and basic skills, and based on the physical and mental characteristics of young children, they can reasonably design and organize kindergarten science education activities by combining the theme of the garden with the needs of the times and can find out and scientifically solve the practical problems of pre-school children’s science education, and have the ability of independent inquiry and learning, practical reflection. They have the awareness and ability of independent inquiry and learning, practical reflection, cooperation and communication, the spirit of serving the society and the concept of comprehensive education.

2. Theoretical Foundations of Blended Learning

2.1 Mastery Learning Theory

The mastery learning theory proposed by Bloom believes that almost all students can achieve mastery of almost all content as long as they are given enough time and appropriate instruction. After the mastery learning theory was put forward, the education sector in various countries around the world carried out large-scale mastery learning experiments, but due to the limitations of the conditions at that time, it has not been able to completely solve the contradiction between the unified teaching process and the individual learning needs of students, in particular, the learning needs of the outstanding students can not be met, and the development of the theory is in a state of stagnation. Today, more than half a century later, the natural advantages of information technology for meeting students' learning needs have been highlighted, and the theory of mastery learning provides a solid theoretical foundation for blended teaching, especially for the pre-course knowledge transfer stage.

2.2 Active Learning Theory

According to the information processing theory, all learning processes are the process of processing external information through a series of internal mental actions. Research by cognitive scientists has shown that active learning is the best way to promote the transformation of knowledge from short-term memory to long-term memory. Direct teaching mode students passively accept the indirect experience transmitted by the teacher in the teaching process, so that the memory retention time is shorter, learning is inefficient; and active participation in learning activities to reflect the external world with a concrete image, which can contribute to the long-term retention of memory, which is not unlike the teaching methodology of the modern Chinese educator, Mr. Chen Heqin, who said, "Doing in teaching, doing in the middle school, and doing to make progress. This coincides with the teaching methodology of Mr. Chen Heqin, a modern Chinese educator, "teaching by doing, learning by doing, and making progress by doing". In blended teaching, through the guidance and support of teachers, students participate in the practical activities of real problem solving in the learning mode of independent learning and cooperative inquiry, gain knowledge and experience through mobilizing multiple senses to observe, master problem-solving abilities and methods, and continuously enrich and improve their own emotions, attitudes and values.

3. A Blended Teaching Construction of Science Education for Preschool Children Based on Superstar Learning Access

3.1 Design of Blended Teaching Ideas

Centered on the Pan-Asia network teaching platform, Super Star Learning Link covers classroom teaching, student self-study, teaching management and other modules, which runs through all aspects of teaching and realizes the whole process of tracking learning records, providing basic support for guaranteeing the quality of teaching and talent cultivation. In the blended teaching practice of the course "Science Education for Preschool Children", based on the syllabus, grasping the principle of

learning before teaching, the teaching design is carried out in four aspects, namely, preparation, design, implementation and evaluation. The first part of it mainly carries out the research on the preparation for carrying out blended teaching, including the front-end design and the construction of a blended online teaching environment; the second part mainly carries out the research on the specific implementation of blended teaching; and the third part mainly carries out the evaluation of the blended online and offline teaching effect and satisfaction.

This course has a certain degree of innovation in teaching ideas, making full use of online resources, optimizing the classic “BOPPPS” teaching mode into “PBOPPPS” mode. Before the class online self-study, complete the pre-test; in the class to solve the problem, participatory learning; after the class thinking to organize, modify the program. At the same time, we open up the exercise library and online discussion forum for exchanging and answering questions. Through the process of continuously discovering problems, recognizing problems and solving problems between teachers and students and between students and students, students’ scientific literacy and sense of efficacy in science teaching are enhanced, and the basic ability of early childhood science teaching is formed. Throughout the teaching process, through the Xueyin online platform and Superstar Learning Pass, timely examination of the degree of goal achievement, formative evaluation, and continuous improvement of teaching optimized teaching mode.

3.2 Preparation of Blended Learning Resources

The online resources of the science education course for preschool children mainly include the course plan, introductory plan, PPT courseware, videos, chapter quizzes, classroom extension resource library, and Chinese and English literature, covering 29 video resources with a duration of 304 minutes, 123 other resources, 31 number of test questions, and 64 homework libraries. Since the course was put into use, the cumulative number of electors is 2534, the number of classes running on campus is 42, and the number of interactive discussions is 5280. The cumulative number of views has reached 4,381,187, and students can interact with teachers and classmates according to their own learning right online. In addition, there are two self-built self-media platforms for the course (WeChat public platform and video number “Play Science”), and the resources on the platforms are all original design works of the students under the guidance of teachers, with a viewership of millions of times.

3.3 Implementation of Blended Teaching Process

The course “Science Education for Preschool Children” is taught in the form of an offline flipped classroom, in which the offline classroom teaching focuses on in-depth exchanges and discussions on the problems encountered by students during the online pre-study process, such as posting online discussions on “What is science?” “What is science for preschoolers?” “What is science education for preschoolers?” to let students deeply understand the value and significance of this course; through the analysis of teaching cases in the field of kindergarten science, we use the lecture method, discussion method, practical observation method, demonstration and operation method, and investigation and experiment method to let students actively participate in the classroom, reflect on their own learning,

and ask questions to discuss together. In classroom teaching, several tools such as check-in, selection, grabbing, polling, questionnaire, group task (PBL) of Superstar Learning Access are used to stimulate students' learning interest and improve their learning participation. In addition, during the prevention and control of the New Crown Pneumonia epidemic in recent years, teachers relied on SuperStar Learning Pass to cast the screen in offline classrooms while conducting synchronized classrooms or Tencent conferences and Tencent classrooms to communicate and interact with students in real time. In conclusion, the course "Science Education for Preschool Children" relies on the Super Star Learning Pass platform and adopts the blended teaching combined with online and offline teaching, which improves students' learning motivation and classroom participation through the online guidebook, chapter audio and video, PPT and other materials, the offline classroom to solve the important and difficult problems, and organizes the students' situationalized discussions.

3.4 Evaluation of the Effectiveness of Blended Learning

The assessment of the preschool children's science education course focuses more on process evaluation. Process evaluation accounts for 40% of the total grade and summative evaluation accounts for 60% of the total grade. The process evaluation is mainly divided into three evaluation nodes: pre-course learning evaluation, classroom activity evaluation, and post-course learning evaluation. The evaluation points are considered from the three dimensions of students' knowledge and ability, learning method and process, as well as emotion, attitude and value, and are composed of chapter audio and video, chapter quiz, classroom interaction, online exam, online homework, offline homework, etc. The forms are rich and varied, which can comprehensively reflect the students' learning status of the course. Chapter quizzes and midterm exams relying on the exam module of SuperStar Learning Pass allow teachers to pay attention to and grasp the learning effect of students in time. Summative evaluation is based on the results of the final exam, which is conducted after the completion of the teaching, and comprehensively evaluates the students' learning effect, knowledge mastery, ability development, innovation development, and value refinement, etc., so as to continuously improve the design of blended teaching accordingly.

4. Effectiveness and Reflection of Blended Teaching Practices in Preschool Children's Science Education Courses

After the data of the course objective attainment system, the blended teaching practice of this course running in two rounds is effective. First of all, the overall achievement degree of the course objectives is high, 0.83, the three-dimensional objectives have been achieved, the average grade of the chapter quiz on the Learning Channel platform is 93%, and the excellence rate is 90%; the completion degree of the task points is 100%, and the knowledge and ability objectives have been achieved; the number of replies to the discussion forum of this module on the Learning Channel platform is 291, and the replies are correct in their viewpoints and objective in their analyses, which reflect a positive attitude to learning, and the rational thinking has been improved; the teaching activities are reasonably designed.

The program design is reasonable, and the comprehensive quality and professionalism goals are basically achieved, effectively supporting the graduation requirements of “knowledge of teaching,” “ability to teach,” “learning to reflect” mentioned in the teacher education professional certification. In addition, students’ motivation has improved significantly. Judging from the classroom performance, the degree of students’ enthusiasm and initiative is very high; from the data such as the length of watching videos on the Learning Channel platform, it is found that the supporting resources have been fully utilized by the students, which provides effective support for students’ independent learning and personalized learning.

However, there are still some shortcomings, such as the effect of the seminar-style classroom is not too satisfactory. Although the classroom teaching session tried the 4-member group seminar method, team presentation and other teaching activities, the classroom seminar was not intense due to the low input of students’ pre-course knowledge, etc. It was more like the teacher’s questioning to change the traditional indoctrination classroom, which requires long-term and unremitting efforts. Therefore, it is proposed that by communicating with active students in advance, the classroom seminar atmosphere is driven by point to point. Secondly, there are too many online resources, and it is not easy to observe the effect of resource utilization. The Learning Link platform can only observe the number of resources browsed, and it is difficult to observe the effect of resource use. Therefore, it is proposed to streamline the resources and set corresponding assessment indicators to observe the effect of resource use.

Science education for preschool children is a core course with strong practical application for preschool education majors. Through the interpretation of national strategies and laws and regulations such as Made in China 2025 and the Law of the People’s Republic of China on Scientific and Technological Progress (Revised in 2021), students can feel the power of China’s science and technology, stimulate the sense of national pride, and build up ambitious ambitions and cultural self-confidence. Based on the background of the era of teacher education professional certification and undergraduate audit and evaluation of institutions of higher education, the reform and practice of the course teaching process, teaching content, teaching methods and teaching assessment based on the SuperStar Learning Pass platform can not only enable students to better master the ways and methods of pre-school children’s science education and the design and guidance of science education activities, but also stimulate the students’ enthusiasm for learning, enhance the ability of students to solve practical problems of kindergarten. It can also stimulate students’ learning enthusiasm, enhance their ability to solve practical problems in education and teaching, and lay a good foundation for their future work in the preschool education industry.

5. Conclusion

As a continuity innovation of classroom teaching, blended teaching is an inevitable product of the development of the information age and has its unique advanced nature. From the practical effect, the blended teaching of pre-school children’s science education course creates rich online teaching

resources and broadens students' learning channels with the help of Super Star Learning Channel platform. The offline classroom is enriched with classroom activities relying on Super Star Learning Channel, which enhances students' motivation to learn and improves classroom efficiency, reflects the teaching concept of taking students as the main body, helps students change passive learning to active learning, improves the quality of teaching and contributes to the realization of the goal of cultivating college and university application-oriented talents.

Reference

- Duan, M. C., Shen, M. Z., Lv, C. W. et al. (2022). Exploration of Blended Teaching Mode in Natural Resources and Environmental Management Courses--Taking the Integration of Super Star Learning Pass and Classroom Teaching as an Example. *Education Observation*, 11(28), 55-58.
- Gan, Q. J. (2022). Research on Blended Teaching Mode Based on Super Star Learning Channel Platform--Taking "Product Design Software Application (Engineering Design)" Course as an Example. *Education and Teaching Forum*, 2022(51), 141-144.
- Li, F. Q. (2016). Theoretical foundation and instructional design of blended teaching. *Modern Educational Technology*, 26(09), 18-24.
- LI, H. Q., & CHENG, Y. M. (2020). Research on university English large class stratified teaching under mastery learning theory. *Journal of Huzhou Institute of Vocational Technology*, 18(04), 9-15
- Xu, L. Y., & XI, J. P. (2023). Blended teaching practice based on learning pass+BOPPPS model. *Innovation and Entrepreneurship Theory Research and Practice*, 6(09), 169-171.