The Construction and Implementation of the Mixed Teaching Mode of Teaching Method Courses in Preschool Education-Take Science Education for Preschoolers as an Example

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Abstract: Pre-school education professional pedagogy courses are the five major areas of courses to cultivate students' professional core competence. However, it still faces the dilemmas of disconnecting theory and practice, separating lectures from practical training, and contradicting between insufficient class time and quality improvement. Project activities driven by project tasks better meet the practicality and effectiveness requirements of higher vocational students' learning, and the blended teaching mode combining online and offline is highly suitable for the breakthrough of pedagogical courses because of its learning-centered, in-depth learning, and technological support. In view of this, this study takes "Pre-school Children's Science Education" as an example, takes the online teaching platform of Study Pass as the support, reconstructs the course content system based on the concept of project activities, and constructs and implements the blended teaching mode of pre-school education pedagogy courses that integrates technology and education.

1. Introduction

At the beginning of the 20th century, Dewey's student, Kerbercher, first proposed the concept of project-based learning, which attracted the attention of the educational community, and the project-based teaching method was gradually and widely applied in the preschool and primary stage education in the United States. After decades of refinement, starting from the 1990s, countries around the world gradually regarded the reform of teaching methods as the focus of national education reform. Driscoll believes that blended teaching is the integration of Internet technology, teaching objects, teaching content, teaching environment and a variety of teaching methods to give students the best teaching resources, cultivate students' interest in learning, supervise independent and active learning, and finally achieve better learning results.[1]In the relevant research on the blended teaching model, foreign countries have mainly focused on the basic theoretical research supported by distance learning and virtual environment but in the The research on the deep integration of network environment and practical classroom is less. He Kexiang proposed that blended teaching, as a teaching method integrating the advantages of traditional learning and networked learning, can make better use of network platforms and resources, reasonably allocate online and offline teaching time, provide help for students' independent learning and teachers'

guidance, and provide new ideas for the reform of teaching method courses.[2] Chen Jinju proposes to carry out blended teaching reform for teaching method courses of preschool education majors in four aspects: analyzing and reconstructing the existing teaching content, sorting out and reconstructing the course resources, reasonably allocating the time for online learning and offline teaching, and adopting a multi-subject and diversified course assessment method.[3]With the rise of information technology, online teaching brings new challenges and opportunities to traditional teaching mode, and the exploration of online and offline mixed teaching mode has become an important direction of the current teaching reform in colleges and universities.[4]According to the concept of blended teaching mode, which combines online high-quality teaching resources and modern information technology, the researchers take the basic course of a major in the university as the teaching experiment field to reform the teaching mode.[5]

Through the literature research, we can find that there are not many studies on the application of preschool education professional curriculum, "Science Education for Preschool Children" as an important part of the five areas of pedagogy courses, with strong practicality, focusing on the theoretical guidance at the same time focusing on strengthening the students' awareness of the practice and the application of the enhancement of the formation of practical wisdom and competence. Therefore, this paper takes "Science Education for Preschool Children" as an example, takes Super Star Learning Channel and Wisdom Tree Education Platform as the support, reconstructs the course content system based on the concept of project activities, constructs and implements the blended teaching mode of preschool education pedagogy courses that integrates technology and education, and expects to be able to provide a certain solution to the problems of the teaching of the science field and achieve good teaching results..

2. Project-based restructuring of course content in Science Education for Preschoolers

Table 1: Project activity list

Project number	Project name	List of mandates
Item I	Observations to Understand the Characteristics of Young Children Learning Science	Goals of science education for preschool children
		Content of science education for preschool children
		Preschool children learn the characteristics of science education
Item II	Learning to design activities in the field of science	Observation-based science education activities
		Experimental science education activities
		Science education activities in the category of technological production
		Discussion-based science education activities
		Scientific play activities for preschoolers
		Resources for Science Education Activities for Preschoolers
Item III	Organization and implementation of activities in the field of science	Various types of science education mock trial lectures
		isomerization (chemistry)
		Lecture on science education for preschool children
Item IV	Evaluation of activities in the field of science	Content of scientific evaluation of preschool children
		Methods of scientific evaluation of preschool children

Project-based reconstruction of the content of the pedagogical courses refers to breaking the inherent disciplinary system within the pedagogical courses so that the content of each course is presented in the form of project activities.[6] First, according to the curriculum objectives and content characteristics of "Science Education for Preschool Children" and in combination with industry demands, the curriculum is divided into four major projects: understanding the characteristics of young children learning science through observation, learning to design activities in the field of science, organizing and implementing activities in the field of science, evaluating and

reflecting on activities in the field of science. Each project is further broken down into sub-tasks, a series of tasks are interconnected and progress step by step to form a complete learning system.

Next, we will write activity design books for projects at all levels, changing the original curriculum from teaching content organized by subject knowledge to a task-oriented approach. This will guide students to complete project-based learning according to the thinking process of "pre-reading and thinking - learning key knowledge points - accepting project tasks - making project work plans - organizing and implementing projects - self-assessment of project implementation - reflection and improvement", thus organically integrating the core knowledge, abilities and qualities system of pedagogy courses, kindergarten job task system, and students' existing experience system.
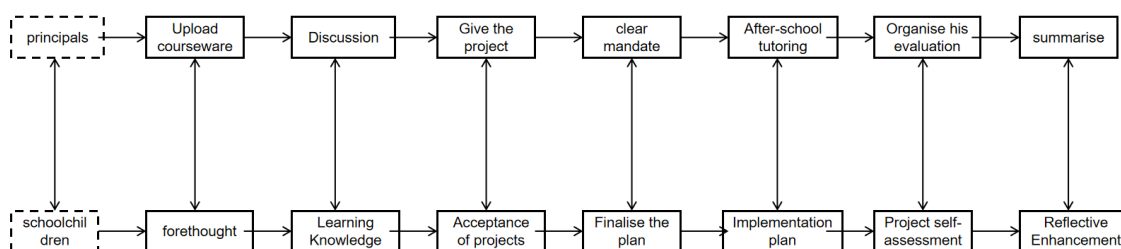
Figure 1: Project activity implementation flow chart

3. Construction of a blended teaching model based on the project activity "Science Education for Preschool Children"

3.1 Independent learning design to guide students' independent inquiry
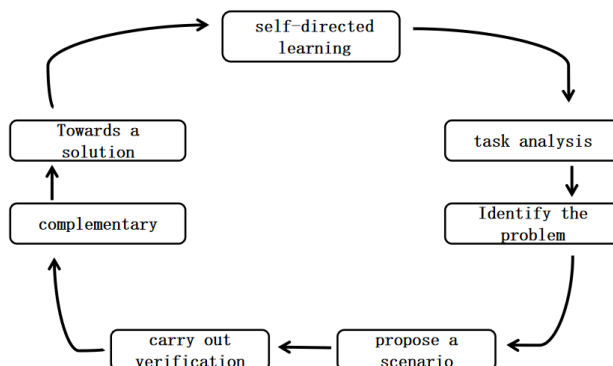
Figure 2: Students learn flowcharts independently

The core of independent learning design is to give full play to the initiative and enthusiasm of students in learning, fully reflecting the role of the cognitive subject of students, focusing on how to help students "learn". Figure 2 is Students learn flowcharts independently.On the basis of analyzing the task, students carry out independent learning and exploration. Students may encounter new problems and challenges in the process of searching for solutions around the project tasks, at the same time, teachers should play the role of their own supporters and guides, and encourage students to record the learning process in a timely manner, such as the division of labor among group members, the challenges encountered in the process of completing the task, the solution to the problem, the use of resources, etc., to achieve the "Doing in the record, doing in the middle, doing in the thinking "The students should be encouraged to record the learning process in a timely manner.

3.2 Collaborative learning design, completion of presentation and sharing of results

After the task exploration, members of the group carry out collaborative learning, sorting, summarizing and forming complete works. At the same time, the teacher should fully understand the situation of each group, timely discovery of each group in the completion of the task and show the problems encountered in the process, so as to individual guidance for individual problems, for the common problem of centralized explanation. Figure 2 is Students learn flowcharts independently.The display of the results in a relaxed and pleasant atmosphere, students speak freely, fully express their views and insights, exercise their own ability. Intergroup sharing and communication is also an important way to help students complete the internalization of knowledge and self-reflection, the exchange of views and wisdom collision throughout the learning process.
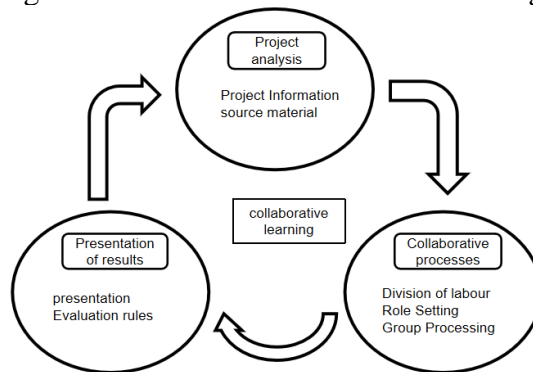
Figure 3: Flowchart of student collaborative learning

3.3 Changing the traditional classroom structure to promote the achievement of teaching goals
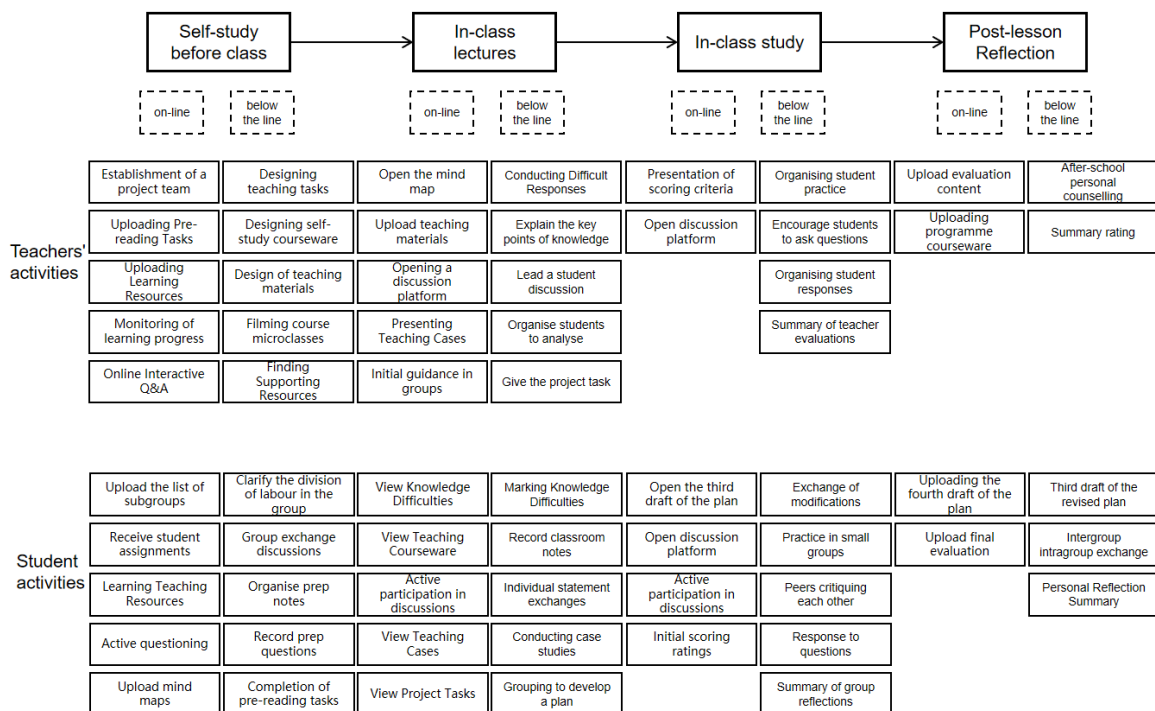
Figure 3: Blended teaching model

According to the arrangement of teaching method course project activities, combined with the practical experience of online teaching platforms such as Xuetong and the existing practice of mixed teaching mode, the teaching of Science Education for Preschool Children is divided into five parts: self-study before class, explanation during class, research after class, research during class and reflection after class. Each department consists of online and offline activities as well as faculty and student activities. Figure 3 is blended teaching model.

3.3.1 Self-study before class

The offline course teachers clearly define the teaching tasks for each scientific teaching method class, allocate teaching hours reasonably, prepare teaching materials in advance, write lesson plans and seek auxiliary resources through various channels. They transform the questions that students need to study and think about in advance into self-study materials and record 5-minute micro-lessons. Online, depending on the class situation, students are organized into approximately 8 project activity groups based on differentiated principles within the group. One week in advance, students upload learning resources such as pre-study tasks, self-study courseware and micro-lessons, and monitor the progress of students' pre-study, interact with students online and answer questions in a timely manner. Offline, students independently divide the work of the group according to the requirements, strengthen the communication and discussion within the group, independently organize the pre-study notes, and record the difficulties in pre-study and complete the pre-study tasks; online, upload the list of the group, receive the learning tasks, learn the teaching resources and actively interact with the teacher on the content of the pre-study and upload the mind maps.

3.3.2 In-class lectures

Based on the knowledge of early childhood development, subject area knowledge and teaching strategies in this course, it may be difficult for students to understand and master the content of independent study, so it is necessary for teachers to systematically explain it offline to further help students break through the knowledge difficulties. During the process of knowledge explanation, using the case teaching method to organize student discussions and help students integrate and master the application of theoretical knowledge into practice. Secondly, the project tasks are arranged, and students are instructed to formulate the project plan (i.e., lesson plan) independently and make clear the ideas of carrying out the project activities. Online, firstly, the teacher briefly analyzes and evaluates the mind map uploaded by the students, uploads the teaching courseware containing the project tasks, and presents the teaching cases; secondly, the students' exchanges and discussions are organized on the interactive platform for teaching and learning, and the students' project plan, which is preliminarily completed and uploaded in class, is commented on. The ideas are commented. In the process of classroom learning, students carefully mark the knowledge difficulties, record class notes, actively express their ideas for the case, and initially formulate the project plan in groups after receiving the project task, check the knowledge difficulties, teaching courseware, teaching cases and project tasks, and actively participate in the exchange and discussion of the case, and finally upload the initially completed project plan implementation ideas to the learning pass.

3.3.3 Study in-class

Using the professional training room to simulate the teaching environment of practical training, students are organized to carry out research and learning activities such as designing and modifying project activities, for example, presenting the design of project activities in the form of group cooperation, reporting on the modification process and reflecting on the experience gained;

organizing inter-group exchanges and discussions among the students and experience sharing; encouraging students to carry out group mutual evaluation and self-assessment according to the evaluation standards and evaluation methods, and providing the final referential evaluation conclusions. The students are encouraged to evaluate each other and themselves according to the evaluation criteria and methods, and provide the final reference evaluation conclusion. Based on the principle of subjective learning, students are divided into small groups offline to conduct simulated trial teaching, share the experience of modifying the project activity plan, and evaluate each other among the groups; conduct further discussion within the group in response to the questions and problems of the inter-group evaluation, and form a reflective summary of the group; and rate and grade the performance of the other groups of the research and learning on the Teaching and Learning Platform.

3.3.4 Post-lesson reflections

Teachers mainly conduct offline post-course tutorials, module summaries and assignment grading for individual students; online, they are required to upload assessment content, reporting courseware and mock trial videos. Students mainly revise the three drafts of the lesson plans offline and communicate with each other independently within their groups, and they can also summarize their personal reflections in the light of their kindergarten practice; online, they upload the four drafts of the lesson plans and the final evaluation grades of their groups, so that each group can reflect on and assess the effectiveness of the implementation of each project in a more comprehensive and objective manner.

4. Effectiveness and Reflection on the Implementation of a Blended Teaching Model Based on the Project Activity "Science Education for Preschool Children

4.1 Effectiveness of implementation

4.1.1 Increased student initiative and motivation in course learning

Through the statistics of the Learning Link platform, the number of times students speak in class, their motivation, and the quality of their questions have improved significantly.

Students have gone from having nothing to say or randomly evaluating the lesson plans to having something to say and reason about the standardization of the writing of the elements of the lesson plans, the effectiveness of the interaction between teachers and children, the reasonableness of the design of the courseware, the logic of the design of the activities, and the integration of the contents of the activities. In addition, the autonomy and initiative of students to use online resources to learn after class is enhanced, and students' notes are recorded in detail and certified, and they also independently check all kinds of learning resources on the Learning Pass platform after class to sort out, reflect and summarize in a timely manner.

4.1.2 Significant improvement in the ability to evaluate course learning outcomes

From the whole process of designing, implementing and reflecting on the course project activities, the students' ability of course learning evaluation about the awareness of course learning evaluation, evaluation methods, evaluation approaches, evaluation tools and other course learning evaluation has been significantly improved. Firstly, in the process of course learning, the majority of groups and students can persist in the entire course under the guidance of teachers. Process evaluation is combined with summative evaluation, and they can consciously and efficiently complete attendance, classroom performance (10%), online resource viewing (10%), regular

assignments (individual lesson plan design 10% + individual simulated teaching 20% + group lesson plan design 10% + group simulated teaching 10%) (50%), and final simulated teaching (30%) requirements for course learning. Their initiative has significantly increased. Secondly, through statistical analysis, most students are able to modify, supplement, and improve the evaluation criteria for project activity learning based on the initial evaluation criteria provided by teachers and their group learning experiences. They actively engage in communication and discussion within and between groups, conduct self-evaluation and peer evaluation, and there has been a noticeable improvement in the rationality and logic of evaluations.

4.2 Practical reflections

4.2.1 The online teaching resources of pedagogical courses need to be further explored and sorted out

At present, the learning resources available to students on online platforms mainly focus on Study Pass, Wisdom Tree, and China University Catechism, and there is a lack of online teaching platforms and teaching resources for our teaching law courses, as well as a lack of the development of new teaching materials for teaching law based on the project activity or blended teaching mode. In the future, it is necessary to continue to make efforts in the direction of online open courses and the development of new forms of school-based teaching materials, encourage teachers specializing in teaching and law to push more research and teaching experience to online platforms, and actively prepare teaching materials to better meet the learning needs of teaching and law courses for students of applied colleges and universities.

4.2.2 The way of integrating theory and practice in teaching methodology courses needs to be further reformed

Pre-school education professional teaching method courses is the integration of theory and practice of professional courses. Students should not only accurately grasp the teaching concepts and theoretical knowledge, but also combine the theoretical knowledge with kindergarten curriculum design, activity implementation, etc., so as to truly realize the integration of theory and practice, and the integration of classes and jobs. How to increase students' opportunities for practice and enhance their ability to integrate science and practice is an issue that teachers have always needed to study. In this study, although students' practical ability is enhanced by carrying out project activities in small groups, there is still a problem in the way of combining theory and practice, and it is necessary to better solve the contradiction of conflict between theory and practice hours by interpreting the theory in practice and practicing the practice in the theory. Of course, it is not enough to rely only on classroom teaching, but it is necessary to organically combine the pre-school education majors' apprenticeship in teaching methodology courses, kindergarten thematic activity internships, and seminars, etc., so as to better enhance the students' ability of "Think, Write, Teach, and Evaluate" in teaching methodology courses.

4.2.3 Teachers' ability to implement project activities and use online teaching platforms needs to be improved

Reconstructing the content of the original pedagogical courses with project activities is a major reform in the course content and teaching ideas, which will pose a greater challenge to the teaching ability of teachers. At the same time, mixed online and offline teaching requires teachers to improve their ability to use online teaching platforms, create more opportunities for students to practice, and enhance students' ability to apply theory in practice. Therefore, it is necessary to strengthen the

stability of the teaching team of the teaching method courses, strengthen the young teachers to squat in kindergartens to improve the practical ability of the teachers of the teaching method courses; increase the number of external teachers with senior titles, strengthen the practical guidance, increase the students' ability to apply theory in practice, and strengthen the teachers' ability to implement the project activities and the practical ability of blended teaching through the training and the sharing of excellent cases.

5. Conclusions

It has been proved that the mixed teaching mode of preschool education teaching method courses based on project activities can maximize the teaching effect, enhance the practical application skills of preschool education majors, strengthen the understanding of theoretical knowledge, and improve professionalism, which is applicable to teaching method courses. In specific implementation, the guiding ideology should be "students are active constructors of knowledge", placing students in the position of learning subjects, fully tapping into their initiative and enthusiasm, and under the guidance of teachers, helping students to form a systematic and comprehensive knowledge system of pedagogy courses, achieving the transformation from theoretical learning to practical application skills. This will result in obtaining more solid and firm professional skills.

Acknowledgement

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