ISSN:2790-5179 Vol 3, No.1, 2025

Research on the Innovative Path of Rural Education Teaching Methods from the Perspective of PBE and PBL Integration

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Abstract

Against the backdrop of the continuous deepening of the rural revitalization strategy, the improvement of rural education quality has become a key issue in the field of educational equity development. The traditional teaching mode shows obvious limitations when facing the special situation of rural education, especially in the cultivation of student subjectivity and the development of practical abilities, which urgently need to be broken through. The organic integration of localized learning (PBE) and project-based experiential learning (PBL) provides a new theoretical perspective for solving this dilemma. This fusion model focuses on transforming real-life scenarios into usable teaching resources, and building a mechanism for knowledge acquisition and problem-solving through systematic task design. This article mainly defines the core concepts of PBE and PBL, and proposes an innovative path for rural education teaching methods from the perspective of the integration of PBE and PBL.

Keywords

PBE; PBL; Rural education; teaching method.

The collaborative development of project experience and problem exploration has become a key breakthrough in breaking down the barriers between urban and rural education. This fusion model is essentially an innovative transformation of traditional forms of knowledge transmission, which requires teachers to redefine their roles and functions, transforming from authoritative images of knowledge to planners and leaders of learning activities.

1. Definition of Core Concepts

1.1. The connotation characteristics and practical mode of PBE

Localized learning is an educational philosophy rooted in the community environment, with the key being to closely connect teaching practices with the specific geographic space, cultural context, and social relationships of learners, thereby constructing a multidimensional interactive educational ecosystem. The essential characteristic of PBE (Place Based Education) is the deep reshaping of the authenticity of educational contexts, focusing on the organic combination of knowledge formation process and local environmental elements, and breaking through the physical boundaries and cognitive constraints of traditional classrooms by constructing a continuum of "place cognition action".

1.2. The essential attributes and implementation points of PBL

Project based learning (PBL) is an educational model that focuses on learners as the main body, and its core essence is to achieve knowledge construction and ability improvement

through continuous exploration activities in real situations. Unlike the traditional one-way knowledge transmission method in teaching, it relies on open-ended project tasks to closely connect the core concepts of the subject with real-life situations, promoting learners to achieve cognitive updates and upgrades in the process of solving complex problems. This model mainly presents three interrelated features: a problem driven active exploration mechanism, a multidimensional ability integration and cultivation framework, and a dynamically generated knowledge application system.

2. Innovative Path of Rural Education Teaching Methods from the Perspective of PBE and PBL Integration

2.1. Building a local project driven learning model

In the field of rural education, the organic combination of localized education concepts and project-based learning methods has opened up a new path for teaching reform. This integration approach focuses on relying on local resources to create authentic teaching situations, enabling students to achieve knowledge integration and enhance practical skills while dealing with real-world problems.

Taking the theme project of "Guarding the Mother River" as an example, the teacher team carefully planned the environmental exploration project based on the actual needs of local river pollution control. This project requires students to develop feasible river management plans from the perspective of ecological protection, and the entire learning process revolves around in-depth exploration of changes in river water quality from multiple aspects. In the specific implementation of teaching, teachers organize students to observe the different water quality conditions of various river sections in the village, and guide them to use simple detection tools to measure acidity, alkalinity, and turbidity. Geography teachers will guide students to draw river basin maps and mark the possible distribution locations of pollution sources such as surrounding farmland and livestock farms on the maps. During this period, students will actively conduct interviews with coastal villagers and collect oral data on changes in river water quality over the past twenty years. After it is clear that agricultural non-point source pollution and domestic sewage discharge are the main pollution factors, chemistry teachers will guide students to conduct comparative experiments to simulate the impact of different pollutants on water ecology. The above-mentioned field investigations and scientific experiments have laid a solid data foundation for the design of subsequent governance plans. This design process that combines disciplinary knowledge with real-life space effectively promotes students' transfer and application of theoretical knowledge.

2.2. Promoting the integration of subject scenarios in teaching practice

The organic integration of project-based learning and localized education concepts has opened up a new path for teaching innovation. Transforming local knowledge resources into curriculum support and promoting disciplinary integration through solving real problems can deepen students' understanding of local culture and cultivate their comprehensive practical abilities.

Teachers can conduct teaching activities around the theme of "Exploring Rice Cultivation", starting with the spring equinox season and organizing students to observe the entire rice planting process. The teacher team integrates the goals of science, mathematics, and Chinese

language subjects and designs a practical framework that covers three exploratory stages. In the sowing preparation stage, students are divided into groups to measure the area of the field and calculate the required number of seedlings. They use a combination of step measurement and tape measurement to strengthen their ability to calculate the area of irregular shapes. In practical operation, they clarify the differences between traditional agricultural tools and modern measurement tools. When the seedlings enter the tillering stage, the science teacher leads the students to create observation logs, recording daily temperature and humidity changes as well as plant growth data, focusing on observing the development of rice roots and leaf morphology characteristics, and then constructing the cognitive relationship between plant growth and ecological environment.

In the cultural exploration stage, the teacher arranged for the elderly farmers in the village to give oral accounts of the 24 solar terms and local experiences in agricultural arrangements. After conducting interviews and organizing, students formed a collection of rice agricultural songs. Based on this, Chinese language teaching carries out creative writing activities, requiring students to combine their experiences gained from field observations and use prose or poetry to showcase rice culture. One of the students wrote in their writing: "The wrinkles on Grandpa's face hide the seasonal code. He uses the Qingming rain to count the seedlings, just like I count the squares in my notebook to learn the area." This embodied learning experience deeply integrates abstract concepts with life experience.

2.3. Diversified mechanism for showcasing and evaluating innovative achievements

Integrating local resources into curriculum design, allowing students to build a knowledge system in the process of solving practical problems, can effectively enhance the practical value and social significance of learning activities. This teaching model not only focuses on the effectiveness of knowledge transmission, but also places special emphasis on cultivating learners' awareness of community participation and problem-solving abilities.

During the study period of the "Soil and Water Conservation Action" project, the project selected the phenomenon of farmland erosion that often occurs during the local rainy season as a breakthrough point, leading students to conduct interdisciplinary exploration to improve the ecological environment. The teacher arranged for students to form a research group and go deep into the village to investigate the characteristics of soil erosion in different terrain areas. Students use methods such as measuring slope angles, collecting soil samples, and talking to elderly farmers to comprehensively sort out the historical causes and current impacts of soil erosion. To ensure the feasibility of the plan, each group needs to visit the village committee to clarify the land policy and inquire about the engineering parameters from experts at the agricultural technology station. This learning form that extends the classroom to the fields can transform abstract geographical concepts into practical tasks. Students deepen their understanding of subject knowledge in specific tasks such as measuring the distance between ditches and calculating earthwork quantities.

In the project achievement display phase, the location is set at the township market. Each group uses various forms such as physical models, data charts, and scenario plays to report the solutions they have developed to the villagers. Among them, the ecological slope stabilization device produced by the third group is particularly eye-catching. The team weaves

bamboo strips into a biodegradable slope protection grid and plants locally common dogtooth roots and purple locust trees within the grid. This idea originated from students' observation of the traditional technique of weaving bamboo baskets by villagers. After being guided and improved by technicians from the Agricultural Science Institute, it not only retains the advantage of low cost, but also meets the scientific requirements of soil and water conservation. The multi-dimensional evaluation mechanism breaks the closed nature of traditional classrooms, allowing learning outcomes to be tested in real-life scenarios.

Conclusion

In summary, the innovation of rural education teaching methods under the framework of PBE and PBL integration is actually a deep breakthrough and structural change in the traditional education paradigm. The integration of these two is not simply a mechanical addition of two educational models, but a dynamic teaching system that can inherit local cultural characteristics and cultivate modern core competencies based on the uniqueness of rural education scenes. Teachers can take measures such as building a local project driven learning model, promoting the integration of subject scenarios in teaching practices, and implementing diverse mechanisms for evaluating innovative achievements to effectively turn educational innovation into a sustainable source of activating endogenous development in rural areas.

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