

Research on Teacher Support Strategies in Project-based Learning in Kindergarten

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Abstract: Teacher professional support is key to children's in-depth project exploration, significantly impacting their overall learning and development. This article first analyzes the concept of project-based learning and then discusses specific support strategies within project-based learning. Teachers should conduct comprehensive project design and meticulous planning in advance, providing essential emotional, methodological, and resource support to children, while enhancing their observational and evaluative abilities. By fostering a supportive environment, educators can encourage creativity, critical thinking, and collaboration among students, ultimately leading to a richer educational experience.

Keywords: Project-Based Learning; Teacher Support Strategies; Young Children.

1. Introduction

As research on project-based learning in kindergartens deepens, it has prompted us to rethink the content and methods of children's learning, as well as the objectives and approaches of teachers' instruction. What kind of support should teachers provide to enable children to engage in truly autonomous and in-depth exploratory learning, thereby acquiring the skills and competencies to solve problems in the real world and in different contexts? To address this question, this study employs a practical research approach to help teachers clarify relevant concepts and transform their existing teaching philosophies and thematic teaching methods, thereby better supporting children's learning and development.

2. The Concept of Project-Based Learning

The concept of "project-based learning" can be traced back to Dewey's idea of "learning by doing." Later, Kilpatrick published a paper titled "The Project Method" in 1918, where he first introduced the concept of "project learning." This method was widely adopted in American primary and secondary schools during the 1920s and 1930s [1]. With changes and developments in society, new demands have emerged regarding "what kind of individuals to cultivate and how to cultivate them." Compared to Kilpatrick's era, contemporary mainstream project-based learning has undergone transformations, placing greater emphasis on students' autonomy in learning, their ability to comprehensively analyze and solve problems, and focusing more on the cultivation of core competencies in students.

In this article, project-based learning is defined as a learning approach that is oriented towards the real world, driven by authentic problems, and encourages children to engage in sustained inquiry from which they acquire core knowledge and skills. Project-based learning focuses on issues that are real and relevant, which can be proposed by the children themselves, suggested by teachers based on their observations and understanding of the children, or co-constructed by both teachers and children.

3. How to Effectively Support Young Children in Project-Based Learning

3.1. Advance Project Design

In supporting children's project-based learning, teachers often face the question: Does project-based learning require teacher planning? How can the relationship between planning and emergent learning be effectively managed? Some teachers worry that predetermined plans may lead to a situation of "high control" by the teacher, which could impact children's autonomy and creativity. However, allowing the project to evolve without guidance may result in a different kind of "loss of control," where children fail to obtain effective information and engage in sustained, deep learning.

While project-based learning emphasizes the generative nature of activities and children's autonomy in learning, this does not negate the importance of planning. Finding a balance between the two is crucial. Conducting necessary planning and design before the project begins is one of the important strategies for teachers to support children's learning effectively.

3.1.1. Choosing Valuable Project Themes

A suitable and valuable project theme is key to the successful implementation of a project. Selecting a theme involves "value judgment." What themes are appropriate for children's development and can promote sustained inquiry? What experiences can children gain from them? These questions require teachers to make prior judgments. On one hand, teachers need to understand children's existing experiences and interests, selecting themes that are suitable for their developmental stage and can help link new and old experiences. On the other hand, themes should not be too broad or abstract, exceeding children's cognitive levels, nor should they merely address procedural issues without engaging in deeper learning.

3.1.2. Clarifying Conceptual Knowledge

Conceptual knowledge refers to the relationships among elements that work together within a larger system. It transcends mere facts and focuses on thinking, integrating various factual knowledge to promote children's true understanding and transfer of knowledge, thereby facilitating

higher-order learning that drives lower-order learning[2]. Before starting a project, teachers need to clarify the conceptual knowledge involved and engage in their own learning and exploration. Often, after a project-based learning experience, teachers themselves will have deeper insights and understanding of core concepts.

For example, in a project on "Chinese Characters," if we focus on factual knowledge such as "the evolution of Chinese characters," "the forms of characters," "radicals," and "making character-themed clothing," children's learning may become a simple search for information, learning the steps of character evolution and clothing production without engaging in sustained inquiry around a central question. Project-based learning should focus on conceptual knowledge, using concepts as integrators to organically combine factual and procedural knowledge. If the project on "Chinese Characters" centers around "the culture of Chinese characters" and "the relationship between characters and life," children will engage with deeper knowledge and issues, reflecting on the irreplaceability of Chinese characters and the development of their culture, prompting transfer learning. This requires teachers to have a clear plan, understanding what conceptual knowledge children should gain, accurately grasping the relationships between different knowledge areas, and refining and integrating scattered knowledge.

3.1.3. Developing a Project Network Diagram

After selecting the theme and clarifying conceptual knowledge, teachers can design a project network diagram centered on conceptual knowledge, transforming it into potential conceptual questions. They should consider the problem-solving pathways, the depth of inquiry needed to address these questions, and resources from experts both within and outside the school, as well as potential field trip locations. Teachers must understand that the purpose of creating the network diagram is to clarify the logical threads of the project in advance and integrate the various resources needed, thereby better supporting children's learning exploration, rather than designing a series of fragmented activities.

It is important for teachers to continually ask themselves throughout the design process what conceptual knowledge the project addresses and what core competencies they wish to cultivate in children. During the actual implementation of the project, teachers should flexibly adjust the pre-designed network diagram based on children's interests and learning trajectories, continually iterating on the project design.

3.2. Providing Multifaceted Support for Young Children

For a project to proceed smoothly, teachers need to provide multifaceted and diverse support for young children. This support can be categorized into three main areas:

3.2.1. Emotional Support: Respect and Trust

For young children, especially those encountering projects for the first time, project-based learning can be highly challenging. Some children may take a long time to engage in the project, while others may struggle to complete their inquiry. Teachers should create a free and relaxed environment for exploration, respecting children's existing experiences and interests, and granting them the autonomy to make choices. Children should feel empowered to know that they have the right to direct their own learning. Moreover, teachers must believe in children's capabilities as learners,

problem solvers, and change agents, providing ample encouragement and scaffolding to support transformative activities they wish to undertake.

3.2.2. Methodological Support: Higher-Order Learning Enveloping Lower-Order Learning

High-quality project-based learning focuses on higher-order cognitive strategies—such as problem-solving, creation, decision-making, experimentation, research, and systematic analysis—while also involving numerous lower-order cognitive strategies, including information gathering, organization, comparison, and classification. To promote in-depth project-based learning, higher-order learning should drive lower-order learning. Teachers need to consider the various cognitive strategies involved in the project. If a project consists solely of lower-order strategies, children will not achieve higher-order learning. Additionally, teachers should intentionally and purposefully help children master various cognitive strategies. For example, guiding children to represent and organize the information they collect in different ways can enhance their organizational, classification, and analytical skills. Teachers can also help children clarify the problems they aim to solve, identify potential obstacles and resources, and compare different solutions and approaches, thereby strengthening their problem-solving abilities.

3.2.3. Resource Support: Material and Human Resources

Conducting project inquiries requires children to gather information, conduct field investigations, consult experts, and utilize various tools and materials to produce outcomes. Teachers must provide relevant resource support, including human resources such as parents, community workers, and experts, as well as material resources such as activity materials, cameras, computers, and books. Teachers should thoroughly explore and integrate various resources that can support children's development, ensuring they are readily available. During the project's implementation, teachers should flexibly mobilize these resources according to the project's

3.3. Continuous Observation and Evaluation

Evaluating children's learning and development is crucial for the implementation of project-based learning. This approach requires the use of diverse evaluation methods, with observational records being an essential tool for frontline teachers. The ability to focus on key aspects of observation, utilize observational tools, accurately interpret and analyze children's behaviors, and make informed decisions reflects a teacher's professional competence and qualities. Here are some key considerations for observational evaluation in project-based learning:

3.3.1. Design Personalized Observation Records Based on Project Characteristics

Different project types target distinct core concepts, key abilities, and cognitive strategies. Therefore, teachers should create personalized observation records tailored to the characteristics of each project, capturing children's inquiry processes and enhancing project quality. Given that project-based learning often spans extended periods, with varying focal points at different stages, teachers need to flexibly design multiple observation records. They can refer to resources like the Child Observation Record (COR) assessment system and learning stories for inspiration in their designs[3].

3.3.2. Emphasize the Evaluation of Children's Core Competencies

A fundamental question educators must continually explore is what children should learn and what abilities and developments they should acquire through project-based learning. Currently, "core competencies" have become a focal point for educational reform both internationally and domestically. The "Guidelines for Learning and Development of Children Aged 3-6" essentially represent the concretization of core competencies in early childhood education. Teachers should not only focus on the key concepts and knowledge children gain during project-based learning but also pay attention to core competencies such as critical thinking, creative thinking, problem-solving skills, and communication and collaboration abilities. These competencies lay the foundation for children's long-term development and lifelong learning.

Project-based learning centers on children, empowering

them with autonomy in their learning. It requires children to draw on various knowledge, abilities, and qualities to solve real-world problems, facilitating their development. This process relies heavily on teachers' professional support and feedback. Teachers should engage in continuous theoretical and practical reflection to enhance their professional decision-making and scaffolding abilities.

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