

Chapter 4

Fostering Students’ Critical Thinking Through the Implementation of Project–Based Learning

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ABSTRACT

This chapter examines the role of project-based learning (PBL) in fostering students’ critical thinking skills. By providing both theoretical foundations and practical insights, the chapter explores how PBL can create meaningful connections and enhance students’ preparedness for the future. The authors emphasize key strategies employed in PBL, including active and differentiated learning, collaborative group work, critical thinking skills, and research and investigation. These strategies empower students to tackle real-world problems and challenges, enabling them to develop their critical thinking abilities. Throughout the chapter, the authors highlight the importance of PBL as an approach that promotes deeper learning and equips students with the skills needed to navigate the complexities of the world around them.

INTRODUCTION

In order to provide students with engaging and memorable learning experiences, educators have adopted various teaching methodologies that involve assigning tasks and conducting activities. These approaches aim to offer students different approaches to acquiring knowledge and diverse experiences throughout the learning process. One teaching method that has gained popularity is Project-Based Learning (PBL), as highlighted by Munawaroh (2017). PBL is a learning method that involves students engaging in

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real-world, hands-on projects, enabling them to apply their knowledge, ideas, and skills throughout the project completion process (Buck Institute for Education, 2019).

According to Evans (2019), PBL immerses both students and teachers in genuine situations, addressing authentic issues and practical arrangements. This approach eliminates the barriers that might otherwise exist between classroom practice and real-world application. Furthermore, as students work on projects for varying durations, they apply their previously acquired theoretical knowledge effectively. Consequently, when students are assigned to engage in Project-Based Learning, it enhances their comprehension of the concepts taught in the classroom and allows for a visual representation of their learning journey during the project's completion (Irembere, 2019).

Moreover, Project-Based Learning contributes to the development of students' knowledge, communication skills, creative and critical thinking, teamwork, and more. This multifaceted approach exposes students to authentic materials, real-life challenges, complex problem-solving, and solutions, enabling them to tackle every aspect encountered throughout the PBL sessions with their teachers. Essentially, PBL serves as an extensive teaching and learning method designed to guide students through the intricacies of critical analysis, material challenges, and the effective composition of assignments (Chen, 2019). In this chapter, we will discuss the benefits of PBL for fostering critical thinking skills in students, as well as specific strategies that teachers can use to implement PBL in their classrooms.

BACKGROUND

Basic Characteristics of Project-Based Learning

The effectiveness of teaching methods has been studied by researchers around the globe, such as Iwamoto, Hargis, and Voung (2016) and Irembere (2019). According to these studies, PBL is one teaching method that benefits students' performance in the classroom. PBL promotes learner-centeredness, active learning techniques, and encourages meaningful tasks that lead to problem-solving, critical thinking, and decision making (Chen, 2019). As highlighted by Cabral and Nobre (2015), many schoolteachers report a preference for focusing on the final product and often assign homework to students because they believe that carrying out such tasks in the classroom is time-consuming (Abdallah & Farhan, 2023).

Different key characteristics of PBL activities have been identified by educational researchers, who have shared their diverse opinions on the subject. For instance, Stoller (2002) and Giri (2016) highlight the following features of PBL:

- PBL focuses on real-world subject matter, which captures students' interest and relevance to their lives.
- PBL is a learner-centered teaching method, where the teacher assumes the role of a guide and facilitator to support students throughout the process.
- Collaborative skills are developed through PBL, as students work in small groups, sharing ideas, and collaborating on tasks. Simultaneously, students also have opportunities to work independently and foster their own sense of autonomy.
- PBL activities are designed around the integration of real-life tasks, providing students with authentic learning experiences.

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