

APPLICATION OF PROJECT BASED LEARNING IN CHEMICAL ENGINEERING EDUCATION TO IMPROVE STUDENTS' PRACTICAL SKILLS

Martinus

STAB Samantabadra Jakarta, Indonesia
E-mail: myoho.tommy@yahoo.co.id

Abstract

Chemical engineering education is faced with the challenge of not only imparting theoretical knowledge, but also to develop students' practical skills that meet industry needs. Project Based Learning (PjBL) has been implemented as an effective approach to answer these challenges. This research aims to evaluate the effectiveness of PjBL in improving students' practical skills in the field of chemical engineering. Research is carried out through providing projects that are integrated with the curriculum and oriented to real industrial problems. The method used is comparative analysis of pre-test and post-test to measure improvement in practical skills. The results showed that students who took PjBL showed significant improvements in collaboration skills, problem solving, and use of technology. Apart from that, this approach also increases student motivation and involvement in the learning process. In conclusion, PjBL is an innovative and effective learning strategy that strengthens the practical skills of chemical engineering students and prepares them to become part of a competent workforce in the chemical industry.

Keywords: Project Based Learning, Chemical Engineering Education

INTRODUCTION

Chemical engineering education faces unique challenges in terms of preparing students not only with strong theoretical knowledge but also with the practical skills they will need to succeed in the industrial world. Rapid changes in industrial technology and job market demands have led to an expansion of the chemical engineering education curriculum to make it more applicable and responsive to industrial needs (Rosyid & Setyasto, 2024). Therefore, project-based learning (PjBL) has been seen as an effective approach in responding to this challenge.

PjBL is a pedagogical model that allows students to explore real problems and carry out continuous and in-depth investigations (Maulidannisa & Ansori, 2024). Through PjBL, students engage in projects involving complex