Enhancing STEM Education: Integrating Project-Based Learning and Technology in the Classroom

Dr. Pratik Rajan Mungekar
Scientist, Professor, Counsellor, Global Educator, International Speaker
India

Abstract

This research paper aims to explore the benefits and implementation strategies of integrating project-based learning (PBL) and technology in STEM education. The study will investigate how PBL, when combined with the effective use of technology, can enhance students' understanding, engagement, and critical thinking skills in science, technology, engineering, and mathematics (STEM) subjects. The research will examine the theoretical foundations of PBL and explore various technologies, such as virtual reality, robotics, and coding platforms, that can be incorporated into STEM classrooms. Additionally, the paper will discuss the challenges and best practices associated with integrating PBL and technology in educational settings, highlighting successful case studies and empirical evidence. The findings of this research will provide educators and policymakers with valuable insights to promote effective STEM education and inspire future studies in this area. Keywords: STEM education, project-based learning, technology integration, student engagement, critical thinking, virtual reality, robotics, coding, best practices.

Keywords: project-based learning, technology, policymakers, virtual reality