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IMPLEMENTING PROJECT-BASED LEARNING IN PHYSICS LEARNING: A SYSTEMATIC LITERATURE REVIEW AND BIBLIOMETRIC ANALYSIS (SLRBA)

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Abstract

Project-based Learning (PjBL) has been widely recognized as an effective approach to enhancing the quality of physics learning based on research. This study aims to review the literature on implementing the PjBL learning model in Physics learning. Systematic Literature Review and Bibliometric Analysis (SLRBA) is the research method. The analyzed articles were 48 published from 2015 to 2024. The articles were obtained from national (Indonesia) and internationally reputable journals, indexed by SINTA and Scopus. This study analyzes the representation of research according to several general characteristics, including publication type, year, and country distribution. Specifically, it aims to understand the definition of PjBL, strategies for its implementation, and related benefits and challenges in physics learning. The results found that the implementation of the PjBL model can improve conceptual understanding, high-order thinking skills (HOTS), science processes skills, scientific literacy, students' creative,

critical, collaboration, and communication skills, self-efficacy, and is also effective in supporting student motivation, interest, engagement, and learning outcomes. This can be done not only by implementing traditional PjBL but also by integrating PjBL with learning strategies and media. Including integrating STEM, STEAM, Hybrid Ethno, E-Learning, Laboratory-based Blended, Game Techniques, and Learning Media such as Robotics, Smartphones, YouTube, and Virtual/Online Learning. However, PjBL has several challenges, such as teacher and student readiness, limited resources, difficulties evaluating learning, and limited curriculum and time. This review underlines the importance of PjBL in overcoming physics learning difficulties and improving the quality of physics learning. Future research can focus on further integration between more adaptive PjBL and utilizing technology to support difficult physics learning topics.

Keywords:

Project-Based Learning, Physics Learning, Systematic Literature Review, Billbiometric Analysis