

ABSTRACT

Walida Fitri, IDN. 4201151015. The Influence of Problem-Based Learning Model with The STEM Approach to The Learning Outcomes and Self-Efficacy of Eighth-Grade Students at SMP Negeri 37 Medan in The Topic of Human Circulatory System.

This study aims to determine the influence of the PBL-STEM learning model on science learning outcomes and self-efficacy related to the human circulatory system for eighth-grade students at SMP Negeri 37 Medan for the 2023/2024 academic year. Conducting a quasi-experimental design, including a pretest and posttest, and selecting the sample through simple random sampling by choosing 2 grup randomly: Class VIII A (the Experimental Group) taught using the PBL-STEM method and Class VIII B (the Control Group) taught with the standard PBL approach. Information was gathered via tests, questionnaires, and documentation. Students' learning outcomes in the experimental group improved scores from 47.19 to 82.92 can be categorized has reach the minimum mastery criteria (MMC), while the control group improved from 50.20 to 74.69 and has not reach the MMC. In terms of self-efficacy, the experimental group's scores rose from 50.04 to 63.94 which based on likert scale can be categorized at good category, with the control group 52.73 to 59.40 at the enough category. An Independent Sample t-test analysis conducted with SPSS Version 26 confirmed the PBL-STEM approach significantly enhances both scientific understanding and self-efficacy among students regarding the circulatory system. Specifically, the experimental group demonstrated a significant increase in learning outcomes (with a 2-tailed sig. value of $0.016 < 0.05$) and in self-efficacy (with a 2-tailed sig. value of $0.005 < 0.05$) compared to the control group. These results affirm that applying a STEM-based PBL method significantly enhances eighth-grade students' learning outcomes and self-efficacy in studying the human circulatory system at SMP Negeri 37 Medan during the 2023/2024 academic year.

Keywords: PBL, STEM, Learning Outcomes, Self-Efficacy