

ABSTRACT

BAGAS SUANRI: *The Effect of the Problem-Based Learning Model on Critical Thinking Skills and Learning Outcomes in Standardization in Technical Drawing for Tenth-Grade Machining Students. Mechanical Engineering Vocational Education Study Program, Faculty of Teacher Training and Education, Universitas Malikussaleh, 2026.*

This study aims to analyze the effect of the Problem-Based Learning model assisted by Nearpod on students' critical thinking skills and cognitive learning outcomes in the topic of standardization in technical drawing.

This study employed a quantitative approach using a pre-experimental method with a one-group pretest-posttest design. The study was conducted at SMK Negeri 7 Lhokseumawe and involved 18 tenth-grade students in the Machining Technology program. Data were collected using five essay questions to measure critical thinking skills and 15 multiple-choice questions to measure cognitive learning outcomes. Data analysis was conducted using the Shapiro-Wilk normality test, Paired Samples t-test, and MANOVA with the assistance of IBM SPSS Statistics 26.

The results showed that students' critical thinking skills increased from 58.89% on the pretest to 71.77% on the posttest, while cognitive learning outcomes increased from 65% to 77%. The Paired Samples t-test results showed a significance value of $0.000 < 0.05$ for both variables, indicating a significant difference between the pretest and posttest scores. The MANOVA results also showed a Wilks' Lambda value of 0.547, an F value of 6.205, and a significance value of $0.011 < 0.05$. Therefore, the Problem-Based Learning model assisted by Nearpod has a significant effect on students' critical thinking skills and cognitive learning outcomes, both individually and simultaneously.

Keywords: *problem based learning, nearpod, critical thinking skills, cognitive learning outcomes, technical drawing.*