

# THE IMPLEMENTATION OF PROBLEM BASED LEARNING MODEL ASSITED BY SIMULATION TO IMPROVE STUDENT' CRITICAL THINKING ABILITY USING ONLINE LEARNING

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## ABSTRACT

This research is aimed to improve students' critical thinking ability due to the implementation of problem based learning model assisted by simulation about optic tools topic in class XI SMAN 7 Medan academic year 2020/2021 using online learning. The type of this research is quasi-experiment design using pre-test and post-test. The population is all students of class XI MIA which have 198 students, the samples of this research are two classes, XI MIA 2 as experiment class (n=33) and control class is XI MIA 4 (n=33). The instrument of this research is essay test as much as eight questions. The percentage of N-gain in experiment class is 58% which categorize as medium and in control class is 35% which medium category. As a result of hypothesis test shows that  $t_{\text{count}} = 4.62$  and  $t_{\text{table}} = 1.99$ . Other than that, this research significantly improved students' critical thinking ability taught using PBL model assisted by simulation.

**Keywords:** *Problem Based Learning, Simulation, Critical Thinking Ability, Online Learning.*

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