

## ABSTRACT

**Tia Pebrianti Ulina Lubis, IDN. 4192421019 (2023). The Effect of The Problem Based Learning Model To Improve The Physics Learning Outcomes of Class XI Student On Sound Wave Materials.**

This research aims to know the impact of the application of the problem based learning model on the learning results of students physics on the material of sound waves in class XI SMA Negeri 1 Sidamanik academic year of 2022/2023. This type of research is a quasi-experiment with the design of the control group pretest-posttest. Sampling is done by simple random sampling by taking two classes of seven classes, namely class XI IPA 1 as an experimental class of 34 students and class XI IPA 2 as a control class of 34 students. The instrument used is a test of learning outcomes in the cognitive realm in the form of a double choice consisting of 15 validated questions. Based on the results of the study, the average value of the pre-experimental class was 42.35 and of the control class was 40.98. Based on the results of the t test obtained both classes have the same initial abilities. After the treatment in each class, the average post score in the experimental class was 72.74 while the students in the control class was 66,08. Based on the results of the test of the hypothesis using the different test (test-t) obtained there is a significant effect of the application of the problem based learning model on the study results of student physics on the material of sound waves in class XI SMA Negeri 1 Sidamanik academic year of 2022/2023.

*Keywords: Problem Based Learning Model, Learning Results, Sound Waves.*