

## ABSTRACT

**Maulidatul Fadhilah, NIM 4193121014 (2023). The Effect of Problem Based Learning on Students' Problem Solving Ability in Momentum and Impulse Materials at SMA Negeri 14 Medan**

The objective of this research is to know the effect of the Problem Based Learning model on students' problem solving abilities and know the level of students' problem solving abilities by applying the Problem Based Learning model to Momentum and Impulse material. The research method used is quantitative research with *quasi experiment non-equivalent control group design*. The population in this research were all students of class X IPA SMA Negeri 14 Medan. The sample was chosen through purposive sampling. The experimental class was composed of 25 students from class X IPA 4, while the control class consisted of 25 students from class X IPA 2. Data collection in this research was carried out by using pretest and posttest. The results showed that the average pretest score of students in the experimental class of 46 and the average posttest score of 80, while in the control class, the average student pretest score was 45 and the average score was posttest average of 52. From the results sample is normally and homogenous because  $L_{count} < L_{table}$  and  $F_{count} < F_{table}$ . The result testing the hypothesis using two-sample t-test it was found that  $t_{count} < t_{table}$  or  $0.5643 < 2.0086$ . The result testing the hypothesis using one-sample t-test it was found that  $t_{count} > t_{table}$  or  $17.8016 > 1.6759$ . The average student activity score reached 84.15%, so it can be concluded that the problem based learning (PBL) model on Momentum and Impulse material has an effect on increasing the students' problem solving abilities.

**Keywords:** Problem Based Learning Model, Problem Solving Abilities