

**THE EFFECT OF PROBLEM BASED LEARNING MODELS ON
STUDENTS LEARNING OUTCOMES ON WORK AND
ENERGY TOPIC AT GRADE X MIA SEMESTER II IN
SMA NEGERI 1 TEBING TINGGI A.Y 2018/2019**

**Demensri Napitupulu
ID. 4153322004**

ABSTRACT

Research this aiming for knowing and determine the effect of problem based learning models to improve results learn of students on work and energy topics at grade X in SMA Negeri 1 Tebing Tinggi A.Y 2018/2019.

Type research this is quasi experiment. Population in research is all students at grade X in SMA Negeri 1 Tebing Tinggi A.Y 2018/2019 which consist from 6 class. Sampling was done by cluster random sampling with taking two classes, namely the class X-1 as a control class and class X-4 as a experiment class. The instrument used in this study is the achievement form essay test and student activity by using the observation sheet.

Based on results research obtained use values average results learn students were treatment with problem based learning models is 60,32 and with conventional learning is 50,16 and obtained $t_{count} > t_{table} = (3,54 > 1,67)$ it can be concluded that H_0 rejected and H_a accepted. Increasing learning activity of students while participating in learning using a problem based learning model from meetings I to III with average scores is 62,07 all them with criteria judgment active.

Based on results analyze calculation t test is 3,54 The above data shows that $t_{count} > t_{table} (3,54 > 1,67)$, so it can be concluded that there is a significant difference due to the effect of problem based learning model for improve student learning outcomes on work and energy topics at grade X semester II in SMA Negeri 1 Tebing Tinggi A.Y 2018/2019.

Keywords : problem based learning , learning outcomes, improvement activity.