

**THE EFFECT OF PROBLEM BASED LEARNING MODEL FOR  
STUDENTS LEARNING OUTCOMES IN THE SUBJECT MATTER  
OF THERMODYNAMICS IN CLASS XI SMA NEGERI 2  
KISARAN ACADEMIC YEAR 2014/2015**

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**ABSTRACT**

The objectives of this research are: To know the effect of Problem Based Learning Model on student's learning outcomes in the subject matter of Thermodynamics in Class XI SMA Negeri 2 Kisaran Academic Year 2014/2015.

The research method was quasi experimental. The populations were all XI IPA students in semester II that consist of 6 classes SMA Negeri 2 Kisaran. The samples of this research involves two class there are : XI IPA 3 become experiment class have 35 students and XI IPA 5 become control class have 35 students and define by random cluster sampling.

The results of research : Pre-test average value of experiment class was 39.42 and 39.54 for control class. Post-test average value of experiment class was 66.51 and 57.37 for control class. Standard deviation in pre-test are 10.89 in experiment class and 8.98 in control class and standard deviation in post-test for two class were 9.30 in experiment class and 8.05 in control class. The result of pre-test data using normality test from experiment class and control class was not normal and homogenous. Hypothesis criteria is:  $H_a$  is accepted if  $Z_{count} > Z_{table}$  and  $H_a$  is rejected if  $Z_{count} < Z_{table}$  obtained from list of Z distribution. After calculated data post-test by using non parametric analysis (spearman correlation)  $\alpha = 0.05$ , value of  $R_s = 0.40$ ,  $Z_{count} = 2.33$ , where  $Z_{table} = 1.96$ . if we compare to the correlation table, the effect of problem based learning model is effective. It shows that there was an effect problem based learning model for students learning outcomes in the subject matter of thermodynamics in class XI SMA Negeri 2 Kisaran.

Key word: Problem Based Learning Model, student's learning outcomes, non-parametrics analysis, Spearman Correlation.