

**THE DEVELOPMENT OF INTERACTIVE LEARNING MODULE BY
USING PROBLEMBASED LEARNING (PBL) TO INCREASE STUDENT
ACHIEVEMENT AS COGNITIVE ASPECT AND STUDENT
INDEPENDENCE IN TEACHING OF
SALT HYDROLYSIS TOPIC**

Fredika M.S Gultom (4013332004)

ABSTRACT

The purpose of this research is to know the significant different of student achievement after taught by Interactive Learning Module By Problem Based Learning (PBL) in topic of Salt Hydrolysis. The population is all the student in grade XI at even semester at academic year 2014/2015 in SMA N 1 Sunggal, SMA N 1 Percut Sei Tuan, and SMA Swasta Dharma Bakti. The sample was taken randomly, and each of school chose two classes that will distinguish become experimental and control class. Each of class consist of 30 students.

The instrument used is multiple choice test. After validation, the total of the instrument is 25 from 30. The value of reliability is 0,88. The average of student achievement in the experimental and control class can be seen from the value of pretest and posttest average are 36,5 and 80, and in control class the value of pretest and posttest average are 38,11 and 67. Normality test is determined by statistic test using Chi Square Formula, with the criteria $X^2_{\text{calculated}} < X^2_{\text{table}}$. The result of normality test is Normally Distributed. Next for Homogeneity test is determined by using statistic test with the criteria is ($F_{\text{calculated}} < F_{\text{table}}$). The result of homogeneity test data is homogeneous. The hypothesis test in this study is used two tail t-test. H_a will be accepted with the criteria if $-t_{1/2} \alpha < t > t_{1/2} \alpha$. So in hypothesis I, **H_a is accepted**, then in hypothesis II **H_a is accepted** and in the hypothesis III ($F_{\text{count}} > F_{\text{table}}$), it is $88 > 3,97$. So **H_a is accepted**.

The teacher perception about salt hydrolysis topic on textbook that used is good (T1 got 40%, T2 got 60% and T3 got 75%). The interactive learning module developed based on the BSNP standard and based on the standardization of lecture, teachers, and students. The average of student achievement that taught used Interactive Learning Module is 80, it's higher then the average of student achievement that taught used Direct Instruction and Chemistry Textbook, it's just 67. The percentage of student character that taught used Interactive Learning Module is 72%, it's higher then the percentage of student character that taught used Direct Instruction and Chemistry Textbook, it's just 36%. There is a low (0,397) linear relation and significance between student's character and student's achievement that taught by interactive learning module with problem based learning.