

**THE EFFECTIVENESS OF PROBLEM BASED LEARNING MODEL
BASED ON LESSON STUDY TO INCREASE STUDENT'S
ACHIEVEMENT IN SALT HYDROLYSIS TOPIC**

ABSTRACT

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The effectiveness of Problem Based Learning model based on Lesson Study to increase student's achievement in Salt Hydrolysis topic in SMA N 15 Medan is explained. The research aimed 1) to know the student's achievement by using PBL model based on Lesson Study is higher than using direct instruction model, 2) to prove that alternative hypothesis (H_a) is accepted and nil hypothesis (H_0) is refused by using statistical hypothesis testing, 3) to know the using of PBL model based on Lesson Study is effective in increasing student's achievement in Salt Hydrolysis topic compared with direct instruction model, 4) to know the cognitive aspect will be most improved by using of PBL model based on Lesson Study in salt hydrolysis topic from C1 to C4. The population was all of the students in grade XI at second semester academic year 2014/2015. The class was divided into two classes; experiment class (XI IPA-2) and control class (XI IPA-4). Instrument that used is validated 20 multiple choice questions by empirical validity and construct validity and all questions are reliable. The first time, same pre-test is given to both of class. In experiment class was used Problem Based Learning model based on Lesson Study and in control class was used direct instruction model. The last, same post-test is given for each of class after teaching treatment. Test result stated that the sample is distributed normally and homogeny. Based on the result, pre-test of experiment class (35) is higher than control class (33.11) and post-test of experiment class (79.73) is also higher than control class (65.95). Based on the observation sheet of Lesson Study that was observed show that the students less in stay learn with friend (50%) but many students worked together in "U" form seat (83.3%). And the improvement of cognitive aspect level of student that most increasing was obtained that in experiment class is C1 0.63, C2 0.53, C3 0.67, C4 0.59. The hypothesis testing show that t_{count} 5.1985 while t_{table} 1.6684, $t_{count} > t_{table}$, so H_a is received. It proved that student's achievement was taught by PBL model based on Lesson Study is higher than direct instruction model. Increasing of student's achievement was calculated show that percentages gain in experiment class is 69.5% and in control class is 48.3%. And the effectiveness of Problem Based Learning model based on Lesson Study in Salt Hydrolysis topic is 30.54%.

Keyword: *effectiveness, problem based learning, lesson study, student's achievement, salt hydrolysis*