EFFECT OF PROBLEM BASED LEARNING USING MOLYMOD MADE OF PLASTICINE TOWARDS IMPROVING SENIOR HIGH SCHOOL STUDENTS' ACHIEVEMENT IN THE HYDROCARBON TOPIC

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ABSTRACT

Effect of problem based learning using molymod made of plasticine towards improving senior high school students' achievement in hydrocarbon topic was conducted to know the significant differences students' achievement in experimental class in SMA Negeri 16 Medan and control class that taught with direct instruction model. The population of this research are all of X grade of SMA in Science class and the sample is SMA Negeri 16 Medan. The sample were divided into two class based on purposive sampling technique. One was called experimental class that is grade X IPA 4 and control class grade X IPA 3. The kind of this research is experimental research.

Instrument that is used is validated multiple choice questions as much as 21 questions and 20 of them were chose as instrument test for pretest and postest. The result of instrument test standardization realibility is 0.913. First, pretest was given to experimental class and control class. In experimental class was taught by problem based learning using molymod made of plasticine and in control class was taught by direct instruction model using molymod made of plasticine. The last, post test was given to each class. Before the hyphothesis test, the data were tested by normality test by using Chi Square test and homogenity test by using F test. Test result that proved that the sample is distributed normally and homogen.

Based on the result it was obtained the average of pretest score 33.049 with standard deviation 7.24 and the postest score 87.93 with standard deviation 6.52. In the control class was obtained the average of pretest score 33.049 with standard deviation 7.15 and postest score 69.27 with standard deviation 9.05. The hypothesis is tested by using t-test and obtained t_{count} for the postest is 10.71 and t-test result normalized gain is **11.02** while t_{table} =1.473 at significance level $t_{0.05}$ and df =80, therefore it is proved that $t_{count} > t_{table,}$ so Ha is accepted. It proved there are significant difference of students' achievement taught by problem based learning using molymod made of plasticine which are higher than direct conventional model. Increasing of students' achievement was calculated by using normalized gain and the percentage gain in experimental class are 82% and percentages gain in control class are 53%.