ABSTRACT

Legimin, The Effect of Instructional Models and The Ability of Logical Thinking Toward The Students Achievement in Mathematics Studies at SMA Negeri 1 Kuala. Thesis, Medan : The Education Technology Study Program, Post-graduate Program, State University of Medan, 2010.

The aims of this research were to determine the effect of : (1) the achievement of mathematics learning between the student taught using realistic mathematics of instructional model and the achievement of mathematics learning the student taught using expository of instructional model; (2) the achievement of mathematics learning between who had ability of high logical thinking and the achievement of mathematics learning who had ability of low logical thinking; (3) the interaction between instructional models and the ability of logical thinking on the students achievement in mathematics.

The research was conducted at SMA Negeri 1 Kuala in semester two, 2009/2010 academic year. The population of this research were the X class students of SMA Negeri 1 Kuala that consist of 6 classes with 216 students. The sample of the research were taken 2 classes with 72 students consist of X-A and X-D class. The sample has taken by cluster random sampling technique, consist of 36 students for X-A class taught by learning of realistic mathematics instructional model and 36 students for X-D done by learning of expository instructional model. The research used two test instrument, they are achievement in mathematics test and the logical thinking ability test. The test logical thinking used Longeot test which was given to the students for making classification, the logical thinking ability that has been owned by the student which high and low logical thinking ability. The research method used quasi experiment method with factorial design 2 x 2. The technique of analyzing data used variances of analysis (ANOVA) of two ways within $\alpha = 0,05$ level of significance. The data were analysed by variances of analysis (ANOVA) two ways has been conducted by Liliefors test to carried out the prerequisite test for the normality and Bartlett test for homogenity variances and post hoc test used Scheffe test.

The research findings shows that : (1) the achievement of mathematics learning of students taught using realistic mathematics of instructional model was high than the achievement of mathematic learning of students taught using expository of instructional model with $F_{count} = 4,189 > F_{table} = 3,98$ at $\alpha = 0,05$ level of significance; (2) the achievement of mathematics learning of student taught the ability of high logical thinking was high than the ability of low logical thinking with $F_{count} = 35,073 > F_{table} = 3,98$ at $\alpha = 0,05$ level of significance; (3) the is interaction between instructional model and the ability of logical thinking in affecting mathematics learning achievement of students with $F_{count} = 4,987 > F_{table} = 3,98$ at $\alpha = 0,05$ level of significance.