

## ABSTRACT

Nurlaila Azizah. (2019). *Increased Ability of Mathematical Representation and Self-efficacy of High School Students through Geogebra-assisted Inquiry Based Learning Model.*

*Mathematical representation is the ability students must possess in achieving the goals of mathematics learning. But in reality, the ability of students' mathematical representation in schools is still relatively low. One alternative learning that can improve mathematical representational abilities and student self-efficacy is the Inquiry Based Learning model. The purpose of this study is to: (1) determine the increase in mathematical representation ability of students who obtain a Geogebra-assisted Inquiry Based Learning model higher than students who obtain the Problem Based Learning model; (2) knowing that there are differences in self-efficacy of students who obtain geogebra-assisted Inquiry Based Learning models better than students who obtain the Problem Based Learning model; (3) knowing the effectiveness of geogebra-assisted Inquiry Based Learning models in improving students' mathematical representation skills. The method used in this study was a quasi-experimental method with pretest-posttest control group design. The population in this study were all students of class X SMA Pasundan 3 Bandung and for the sample consisted of 2 classes. Class X IPS 5 as an experimental class that obtained the Inquiry Based Learning model assisted by geogebra and class X IPS 2 as a control class that obtained the Problem Based Learning model. The instruments used in the study were questions about the tests of mathematical representation ability tests and self-efficacy questionnaires. The collected data is then processed using parametric statistical tests on pretest-posttest data with the help of IBM SPSS 20.0 for windows software and the effectiveness of the learning model using effect size. The results showed that: (1) an increase in the mathematical representation ability of students who obtained the geogebra assisted Inquiry Based Learning model is higher than that of students who obtained the Problem Based Learning model; (2) improvement of self-efficacy of students who obtain geogebra assisted Inquiry Based Learning models is better than students who obtain the Problem Based Learning model; (3) the effectiveness of the geogebra assisted Inquiry Based Learning model has a major influence in increasing students' mathematical representation abilities.*

**Keywords:** *Inquiry Based Learning assisted by geogebra, mathematical representation ability, self-efficacy*