

ABSTRACT

Nurul Sasmita. (2024). *Improving Mathematical Problem Solving Ability and Student Learning Independence through GeoGebra-assisted Problem-Based Learning Model.*

Students' ability to solve math problems and learning independence is still low, so the application of GeoGebra-assisted problem-based learning models is an alternative that can be used in an independent curriculum. The objectives of this study are 1) Knowing the improvement in the mathematical problem solving ability of students who use the problem-based learning model with GeoGebra is higher than students who get the usual learning model, 2) Knowing the learning independence of students who use GeoGebra-based problem-based learning model is better than students who use student learning who get ordinary learning models, 3) Knowing the correlation between mathematical problem solving ability and learning independence of students who use GeoGebra-based problem-based learning model. The research method used is quasi experiment method with non equivalent control group design. The subjects of this study were XI grade students as many as two classes with a sample of 60 students, namely 30 students from class XI-3 as the experimental class and 30 students from class XI-5 as the control class. The research instruments used in this study were mathematical problem solving ability test and learning independence questionnaire. The instruments used in this study were mathematical problem solving ability test descriptions and learning independence scales. Data analysis techniques using the similarity test of two means, the difference of two means and correlation analysis were processed using IBM SPSS 23.0 for Windows software. The results showed that the increase in mathematical problem solving ability and learning independence of students who received the GeoGebra-based problem-based learning model was higher than students who received the usual learning model.

Keywords: *Mathematical Problem Solving Ability, Learning Independence, Problem-Based Learning Model, GeoGebra.*