

ABSTRACT

Dwi Antika Br Nasution, NIM 4193111047 (2019). The Effect of Problem-Based Learning Model Assisted by Geogebra Software on Students' Mathematical Communication Ability in SMP N 1 Selesai.

This study aimed, firstly to analyze how the difference of students' mathematical communication ability taught by PBL assisted by Geogebra and Conventional learning model. Secondly, to analyze how the PBL assisted by Geogebra can affect students' mathematical communication ability. The population in the study were all students in grade VIII SMP N 1 Selesai, distributed in nine classes. The samples were all students of class VIII-7 with 31 students as experiment class and VIII-8 with 30 students as control class, which were selected through random sampling technique. The experiment class was taught by PBL assisted by Geogebra while the control class with Conventional learning. This research was Quasi Experiment with Nonequivalent Control Group design. Data collection instrument used was mathematics communication ability test that have been tested for validity and reliability. Before testing the hypothesis, normality test was carried out using Shapiro-Wilk test and homogeneity test using Levene test on the research data. The results showed that the samples came from normal and homogeneous distributed population. Hypothesis testing with t-test (one-tailed) showed that $t_{calculate} > t_{table}$ (3,846 > 1,671) with $\alpha = 0,05$ and $df = 59$. Thus H_0 is rejected and H_a is accepted, so students' mathematical communication ability taught by PBL assisted by Geogebra was higher than the students' mathematical communication ability taught by Conventional learning. The difference indicates that learning models used can have an effect on students' mathematical communication ability. Through the syntax of PBL assisted by Geogebra, it can improve students' mathematical communication ability.

Keywords: Problem-based learning (PBL), geogebra, students' mathematical communication ability.