

ABSTRACT

Alfa Salma Nur Azizah. **Peningkatan Kemampuan Komunikasi Matematis dan *Self-Concept* Siswa SMK melalui Model *Problem-Based Learning* Berbantuan *Geogebra*.**

Mathematical communication ability is an ability that must be possessed by every student. Efforts made to improve students' communication skills are by implementing a student-centered learning model. Geogebra-assisted Problem-Based Learning model is one of the alternatives to help improve students' mathematical communication skills. This research aims to find out: 1) Whether the improvement in mathematical communication skills of students who get the Geogebra-assisted Problem-Based Learning model is higher than students who get the usual learning model; 2) Is the self-concept of students who get the Geogebra-assisted Problem-Based Learning model better than students who get the usual learning model; 3) Is there a relationship between mathematical communication skills and self-concept of students who get the Geogebra-assisted Problem-Based Learning model. This research used quasi-experimental method with non-equivalent control group design. The research subjects were 11th grade students of SMK Cendekia Batujajar in the 2024/2025 school year, the research subjects totaled 56 people of which 29 students of class XI-MP 4 who received the Geogebra-assisted Problem-Based Learning model and 27 students of class XI-MP1 who received the usual learning model. The research instruments used in this study were test instruments to see students' mathematical communication skills and non-test instruments to determine students' self-concept scale. The collected data were analyzed using descriptive statistics and inferential statistics with the help of Microsoft Excel and SPSS 23.0 for Windows. Based on the results of the research data analysis, the conclusions were obtained: 1) The improvement in mathematical communication skills of students who get the Geogebra-assisted Problem-Based Learning model is higher than students who get the usual learning model; 2) Self-concept of students who get the Geogebra-assisted Problem-Based Learning model is better than students who get the usual learning model; 3) There is a positive correlation between mathematical communication skills and self-concept of students who get the Geogebra-assisted Problem-Based Learning model.

Keywords: *Problem-Based Learning, Geogebra, mathematical communication skills, Self-concept.*