

## ABSTRAK

**Melia Ariani Dewi, NIM 4183111004 (2023). Penerapan Model Pembelajaran *Problem Based Learning* Berbantuan Aplikasi Geogebra untuk Meningkatkan Kemampuan Penalaran Matematis Siswa Kelas VIII SMP Negeri 3 Sunggal.**

Penelitian ini bertujuan untuk: (1) meningkatkan kemampuan penalaran matematis siswa dengan menerapkan model pembelajaran *problem based learning* berbantuan aplikasi geogebra dalam pembelajaran matematika pada siswa kelas VIII SMP Negeri 3 Sunggal; (2) mendeskripsikan proses penyelesaian jawaban siswa yang berkaitan dengan penalaran matematis siswa dengan menerapkan model pembelajaran *problem based learning* berbantuan aplikasi geogebra. Penelitian ini merupakan Penelitian Tidakkan Kelas. Subjek pada penelitian ini adalah siswa kelas VIII SMP Negeri 3 Sunggal yang berjumlah 28 siswa. Penelitian ini terdiri atas dua siklus dimana pada akhir tiap siklus diberikan tes penalaran matematis untuk mengukur tingkat kemampuan penalaran matematis siswa. Hasil penelitian menunjukkan bahwa: (1) penalaran matematis siswa dapat meningkat setelah dilakukan pembelajaran dengan menerapkan model *problem based learning* berbantuan aplikasi geogebra dimana rata-rata nilai siswa pada tes kemampuan penalaran siklus I sebesar 65,85 meningkat menjadi 85,39 pada siklus II dan ketuntasan klasikal pada tes kemampuan penalaran siklus I sebanyak 16 siswa (57,14%) meningkat menjadi 26 siswa (87,88%) pada siklus II; (2) proses jawaban siswa dalam menyelesaikan tes kemampuan penalaran matematis berkategori baik, hal ini dapat dilihat dari jawaban siswa yang sudah dapat memenuhi indikator kemampuan penalaran matematis. Berdasarkan uraian tersebut dapat disimpulkan bahwa penerapan model pembelajaran *Problem Based Learning* berbantuan aplikasi Geogebra dapat meningkatkan kemampuan penalaran matematis siswa.

**Kata Kunci:** Penalaran Matematis, *Problem Based Learning*, Geogebra

## ABSTRACT

**Melia Ariani Dewi, NIM 4183111004 (2023). Application of the Problem Based Learning Model Assisted by the Geogebra Application to Improve the Mathematical Reasoning of Class VIII Students of SMP Negeri 3 Sunggal.**

This research aims to: (1) improve students' mathematical reasoning abilities by applying the problem based learning model assisted by the Geogebra application in mathematics learning for class VIII students at SMP Negeri 3 Sunggal; (2) describe the process of completing student answers related to students' mathematical reasoning by applying the problem based learning model assisted by the Geogebra application. This research is Class Action Research. The subjects in this research were 28 students in class VIII of SMP Negeri 3 Sunggal. This research consists of two cycles where at the end of each cycle a mathematical reasoning test is given to measure the level of students' mathematical reasoning abilities. The results of the research show that: (1) students' mathematical reasoning can improve after learning by applying the problem based learning model assisted by the Geogebra application where the average student score on the reasoning ability test in cycle I was 65.85, increasing to 85.39 in cycle II and classical completeness in the reasoning ability test in cycle I was 16 students (57.14%) increasing to 26 students (87.88%) in cycle II; (2) the process of students' answers in completing the mathematical reasoning ability test is in the good category, this can be seen from the students' answers which have been able to meet the indicators of mathematical reasoning ability. Based on this description, it can be concluded that the application of the Problem Based Learning learning model assisted by the Geogebra application can improve students' mathematical reasoning abilities.

**Keyword:** Mathematical reasoning, Problem Based Learning, Geogebra.

