

## ABSTRAK

**Robby Rahmatullah, NIM 4193311048 (2023). Penerapan Model Pembelajaran *Discovery Learning* Berbantuan Aplikasi *Geogebra* untuk Meningkatkan Penalaran Matematis Siswa Kelas VIII SMP.**

Penelitian ini bertujuan untuk: (1) meningkatkan penalaran matematis siswa melalui penerapan model pembelajaran *Discovery Learning* berbantuan aplikasi *Geogebra* di kelas VIII SMP; (2) mendeskripsikan peningkatan penalaran matematis siswa melalui penerapan model pembelajaran *Discovery Learning* berbantuan aplikasi *Geogebra* di kelas VIII SMP. Jenis penelitian ini adalah penelitian tindakan kelas. Subjek penelitian yaitu siswa kelas VIII SMP Swasta PAB 1 Klumpang berjumlah 33 siswa dan objek penelitian yaitu peningkatan penalaran matematis siswa dengan menerapkan model pembelajaran *Discovery Learning* berbantuan aplikasi *Geogebra* pada materi bangun ruang sisi datar (kubus dan balok). Teknik pengumpulan data yang digunakan adalah observasi aktivitas siswa dan tes penalaran matematis. Hasil penelitian menunjukkan bahwa: (1) penerapan model pembelajaran *Discovery Learning* berbantuan aplikasi *Geogebra* dalam pembelajaran matematika dapat meningkatkan kemampuan penalaran matematis siswa. Pada siklus I diperoleh bahwa skor rata-rata kemampuan penalaran matematis indikator mengajukan dugaan sebesar 59,85; menemukan pola pada suatu gejala matematis 70,45; memberikan alternatif bagi suatu argumen 56,82; dan menarik kesimpulan dari suatu pernyataan 61,36. Dengan adanya perbaikan pada siklus II yaitu penggunaan aplikasi *Geogebra* pada sintaks pengumpulan dan pemrosesan data diperoleh bahwa kemampuan penalaran matematis siswa indikator mengajukan dugaan sebesar 77,27; menemukan pola pada suatu gejala matematis 80,30; memberikan alternatif bagi suatu argumen 90,15; dan menarik kesimpulan dari suatu pernyataan 81,06; (2) peningkatan kemampuan penalaran matematis siswa dapat dilihat dari hasil tes kemampuan penalaran matematis siswa meningkat pada kategori sedang dengan rata-rata N-Gain sebesar 0,53. Adapun indikator yang paling meningkat adalah indikator memberikan alternatif bagi suatu argumen dengan N-Gain sebesar 0,77.

**Kata kunci:** Penalaran matematis, discovery learning, geogebra.

## ABSTRACT

**Robby Rahmatullah, NIM 4193311048 (2023). Application of the Discovery Learning Model Assisted by the Geogebra Application to Improve the Mathematical Reasoning for Class VIII SMP.**

This research aims to: (1) improve students' mathematical reasoning through the application of the Discovery Learning learning model assisted by the Geogebra application in class VIII of junior high school; (2) describe the improvement in students' mathematical reasoning through the application of the Discovery Learning learning model assisted by the Geogebra application in class VIII of junior high school. This type of research is classroom action research. The research subjects were 33 students in class VIII of PAB 1 Klumpang Private Middle School and the research object was improving students' mathematical reasoning by applying the Discovery Learning learning model assisted by the Geogebra application on flat-sided geometric material (cubes and blocks). The data collection techniques used were observation of student activities and mathematical reasoning tests. The research results show that: (1) the application of the Discovery Learning learning model assisted by the Geogebra application in mathematics learning can improve students' mathematical reasoning abilities. In cycle I, it was found that the average score of the mathematical reasoning ability indicator for making conjectures was 59.85; finding patterns in a mathematical phenomenon 70.45; provide alternatives to an argument 56.82; and draw conclusions from a statement 61.36. With the improvements in cycle II, namely the use of the Geogebra application in the data collection and processing syntax, it was found that the indicator students' mathematical reasoning ability was 77.27; finding patterns in a mathematical phenomenon 80.30; provide an alternative to an argument 90.15; and draw conclusions from a statement 81.06; (2) the increase in students' mathematical reasoning abilities can be seen from the test results. Students' mathematical reasoning abilities have increased in the medium category with an average N-Gain of 0.53. The indicator that improved the most was the indicator that provided an alternative for an argument with an N-Gain of 0.77.

**Keywords:** Mathematical reasoning, discovery learning, geogebra.