ABSTRAK

Risma Nurilhami. (2025). "Penerapan Model *Problem Based Learning* berbantuan *Wolfram Alpha* untuk Meningkatkan Kemampuan berpikir Aljabar dan *Persistence* Siswa".

Penelitian ini dilatarbelakangi oleh pentingnya meningkatkan kemampuan berpikir aljabar dan kegigihan (*persistence*) siswa melalui model pembelajaran yang tepat. Salah satu upaya yang dilakukan yaitu menerapkan model *Problem Based Learning* (PBL) berbantuan *Wolfram Alpha*. Penelitian ini bertujuan untuk mengetahui proses pembelajaran matematika dengan model PBL berbantuan *Wolfram Alpha*, menganalisis perbedaan peningkatan serta pencapaian kemampuan berpikir aljabar siswa antara kelas eksperimen dan kelas konvensional, serta mengidentifikasi tingkat persistence siswa. Metode penelitian yang digunakan adalah *quasi experiment* dengan desain *Nonequivalent Pretest-Posttest Control Group Design*. Instrumen penelitian berupa tes untuk mengukur kemampuan berpikir aljabar dan nontes untuk mengukur *persistence*. Hasil penelitian menunjukkan bahwa pembelajaran menggunakan model PBL berbantuan *Wolfram Alpha* terlaksana dengan baik, terdapat perbedaan signifikan pada peningkatan serta pencapaian kemampuan berpikir aljabar antara siswa yang menggunakan PBL berbantuan *Wolfram Alpha* dengan pembelajaran konvensional, dan persistence siswa tergolong tinggi. Implikasi penelitian ini menegaskan perlunya pengembangan model pembelajaran inovatif berbasis teknologi untuk mendukung peningkatan kemampuan berpikir aljabar dan kegigihan siswa.

Kata Kunci: *Problem Based Learning, Wolfram Alpha,* Kemampuan Berpikir Aljabar, *Persistence* Siswa.

ABSTRAK

Risma Nurilhami (2025). "*Application of Problem-Based Learning Model Assisted by Wolfram Alpha to Improve Students' Algebraic Thinking and Persistence Skills*".

This study is motivated by the importance of improving students' algebraic thinking ability and persistence through the use of appropriate learning models. One effort undertaken is the implementation of the Problem-Based Learning (PBL) model assisted by Wolfram Alpha. The objectives of this study are to examine the mathematics learning process using the PBL model assisted by Wolfram Alpha, to analyze the differences in improvement and achievement of algebraic thinking skills between students in the experimental class and those in the conventional class, and to identify the level of student persistence. The research method employed is a quasi-experiment with a Nonequivalent Pretest-Posttest Control Group Design. The instruments used consist of tests to measure algebraic thinking ability and non-test instruments to measure persistence. The results indicate that learning with the PBL model assisted by Wolfram Alpha was well implemented, there were significant differences in both improvement and achievement of algebraic thinking ability between students who used the PBL model assisted by Wolfram Alpha and those who experienced conventional learning, and students demonstrated a high level of persistence. The implications of this study emphasize the need for developing innovative, technology-based learning models to enhance students' algebraic thinking and persistence.

Keywords: *Problem-Based Learning, Wolfram Alpha, Algebraic Thinking Skills, Student Persistence.*