ABSTRAK

Fania Azzahroh Nurul Falah, 1212050056, 2025, "Penggunaan Algebrator Melalui Model Pembelajaran *Contextual Teaching And Learning* Untuk Meningkatkan *Symbol Sense Skill* Dan *Self Concept* Siswa"

Symbol sense skill dan *self concept* merupakan kemampuan penting dalam pembelajaran matematika yang membantu siswa memahami, mengaitkan, dan memanipulasi simbol secara bermakna dalam konteks kehidupan nyata. Integrasi model *Contextual Teaching and Learning* (CTL) dengan teknologi pembelajaran seperti Algebrator diyakini mampu menciptakan proses belajar yang interaktif, kontekstual, dan menumbuhkan rasa percaya diri siswa. Namun, fakta di lapangan menunjukkan rendahnya kedua kemampuan tersebut, khususnya pada materi aljabar, yang tercermin dari kesulitan siswa menginterpretasikan simbol serta sikap pasif dalam memecahkan masalah. Penelitian ini bertujuan menganalisis peningkatan *symbol sense skill* dan *self concept* melalui model *Contextual Teaching and Learning* (CTL) berbantuan Algebrator. Metode penelitian menggunakan pendekatan kuantitatif dengan desain kuasi eksperimen. Sampel penelitian terdiri dari tiga kelas X di suatu SMA di Kabupaten Garut. Instrumen penelitian meliputi lembar observasi, tes *symbol sense skill*, dan angket *self concept*. Hasil penelitian menunjukkan peningkatan signifikan pada kelas CTL berbantuan Algebrator dibandingkan kedua kelas lainnya, dan hasil ini konsisten berdasarkan gender. Analisis data memperlihatkan bahwa siswa lebih aktif mengaitkan simbol dengan konsep nyata serta menunjukkan sikap percaya diri lebih baik saat menghadapi soal kontekstual. Temuan ini berkontribusi pada pengembangan strategi pembelajaran matematika berbasis teknologi yang memadukan konteks nyata dan media interaktif untuk mendukung capaian kognitif dan afektif siswa.

Kata kunci: Algebrator, Model *Contextual Teaching and Learning, Self Concept, Symbol Sense Skill*

ABSTRACT

Fania Azzahroh Nurul Falah, 1212050056, 2025, *"The Use of Algebrator Through the Contextual Teaching and Learning Model to Improve Students' Symbol Sense Skills and Self Concept"*

Symbol sense skill and self-concept are essential abilities in mathematics learning that help students understand, connect, and manipulate symbols meaningfully within real-life contexts. The integration of the Contextual Teaching and Learning (CTL) model with learning technologies such as Algebrator is believed to create an interactive and contextual learning process while fostering students' self-confidence. However, field findings indicate the low levels of both abilities, particularly in algebra, as reflected in students' difficulties in interpreting symbols and their passive attitudes in problem-solving. This study aims to analyze the improvement of symbol sense skill and self-concept through the Contextual Teaching and Learning (CTL) model assisted by Algebrator. The research employed a quantitative approach with a quasi-experimental design. The sample consisted of three grade X classes at a senior high school in Garut Regency. The research instruments included observation sheets, symbol sense skill tests, and self-concept questionnaires. The results showed a significant improvement in the CTL class assisted by Algebrator compared to the other two classes, and these findings were consistent across gender. Data analysis also revealed that students were more active in linking symbols to real concepts and demonstrated better self-confidence when solving contextual problems. These findings contribute to the development of technology-based mathematics learning strategies that integrate real-life contexts and interactive media to support students' cognitive and affective achievements.

***Keywords*:** Algebrator*, Contextual Teaching and Learning Model, Self Concept, Symbol Sense Skill*