

ABSTRAK

Natalia Chyntia Devi. 242620001 : Pengembangan Media Berbantuan *Augmented Reality* Berbasis *Deep Learning* untuk Menstimulasi Kemampuan Pemecahan Masalah Geometri di Sekolah Menengah Pertama. Tesis. Magister Pendidikan Matematika, Pascasarjana Universitas Muhammadiyah Purworejo. 2026.

Penelitian ini bertujuan untuk mengembangkan media pembelajaran berbantuan *Augmented Reality* berbasis *Deep Learning* yang memenuhi kriteria valid, praktis, dan efektif dalam menstimulasi kemampuan pemecahan masalah matematis siswa SMP.

Penelitian ini menggunakan pendekatan penelitian dan pengembangan (*Research and Development*) dengan menggunakan model ADDIE yang meliputi tahap *Analysis*, *Design*, *Development*, *Implementation*, dan *Evaluation*. Subjek penelitian terdiri atas validator ahli, guru, dan siswa SMP. Instrumen penelitian meliputi lembar validasi ahli materi, ahli media, instrumen tes kemampuan pemecahan masalah matematis (pretest dan posttest), serta angket respons guru dan siswa. Data dianalisis secara deskriptif kuantitatif untuk menentukan tingkat validitas, kepraktisan, dan keefektifan media. Keefektifan media dianalisis menggunakan skor *Normalized Gain* (N-Gain).

Hasil penelitian menunjukkan bahwa media pembelajaran berbantuan *Augmented Reality* berbasis *Deep Learning* memenuhi kriteria valid. Media yang dikembangkan juga memenuhi aspek kepraktisan dengan persentase respons guru dan respons siswa yang keduanya berada pada kategori sangat praktis. Selain itu, media terbukti efektif dalam meningkatkan kemampuan pemecahan masalah matematis siswa dengan nilai N-Gain yang termasuk dalam kategori tinggi. Hasil tersebut menunjukkan bahwa penggunaan media mampu meningkatkan pemahaman konsep geometri sekaligus mengoptimalkan kemampuan siswa dalam menyelesaikan permasalahan matematis. Berdasarkan hasil penelitian dapat disimpulkan bahwa media pembelajaran berbantuan *Augmented Reality* berbasis *Deep Learning* yang dikembangkan melalui model ADDIE telah memenuhi kriteria valid, sangat praktis, dan efektif. Oleh karena itu, media ini layak digunakan sebagai alternatif inovasi pembelajaran matematika pada materi geometri di SMP untuk meningkatkan kemampuan pemecahan masalah matematis siswa.

Kata kunci: *Augmented Reality*, *Deep Learning*, geometri, pemecahan masalah.

ABSTRACT

Natalia Chyntia Devi. 242620001: *Development of Augmented Reality-Based Media Using Deep Learning to Stimulate Geometry Problem-Solving Skills in Junior High School. Thesis. Mathematics Education, Postgraduate Program, Muhammadiyah University of Purworejo. 2026.*

This study aims to develop learning media assisted by Augmented Reality based on Deep Learning that meets criteria of being valid, practical, and effective in stimulating the mathematical problem-solving skills of junior high school students.

This research uses a research and development approach with the ADDIE model, which includes the stages of Analysis, Design, Development, Implementation, and Evaluation. The research subjects include expert validators, teachers, and junior high school students. Research instruments include expert validation sheets for material and media, tests for mathematical problem-solving skills (pretest and posttest), as well as teacher and student response questionnaires. The data were analyzed descriptively and quantitatively to determine the level of media validity, practicality, and effectiveness. The effectiveness of the media was analyzed using the Normalized Gain (N-Gain) score.

The research results show that the learning media assisted by Deep Learning-based Augmented Reality meet valid criteria. The developed media also meet practical aspects with teacher response percentages and student responses both falling into the very practical category. In addition, the media has proven effective in improving students' mathematical problem-solving skills, with N-Gain scores in the high category. These results indicate that the use of this media can enhance the understanding of geometry concepts while also optimizing students' abilities to solve mathematical problems. Based on the research results, it can be concluded that the Deep Learning-based Augmented Reality learning media developed through the ADDIE model meets valid, very practical, and effective criteria. Therefore, this media is worthy of being used as an alternative innovation in teaching mathematics on geometry topics in junior high schools to improve skills.

Keywords: Augmented Reality, Deep Learning, geometry, problem solving.