

ABSTRAK

Alfina Damayanti. NIM. 2202112010. 2026. Pengembangan Media *Problem Based Learning* Berbasis *Augmented Reality* (Ar) Materi Gerak Lurus Beraturan Untuk Meningkatkan Keterampilan Proses Sains Di Sman 4 Madiun. Program Studi Pendidikan Fisika. Fakultas Keguruan dan Ilmu Pendidikan. Universitas PGRI Madiun. Dosen Pembimbing (1) Dr. Jeffry Handika, S.Si., M.Pd., M.Si. Dosen Pembimbing (2) Mislan Sasono S.Pd.Si., M.Pd

Tujuan penelitian ini adalah untuk menganalisis Pengembangan Media *Problem Based Learning* Berbasis *Augmented Reality* (AR) Materi Gerak Lurus Beraturan Untuk Meningkatkan Keterampilan Proses Sains di SMAN 4 Madiun. Penelitian ini termasuk dalam metode penelitian dan pengembangan (*Research and Development*). Data diperoleh melalui hasil tes yang diberikan kepada siswa kelas XI di SMAN 4 Madiun dan hasil validasi produk dari tim ahli materi dan media. Penelitian ini diharapkan dapat memberikan bukti empiris terkait terciptanya media yang valid, praktis, dan efektif untuk membantu siswa di SMAN 4 Madiun memahami konsep Gerak Lurus Beraturan (GLB) dan meningkatkan Keterampilan Proses Sains. Hasil penelitian diharapkan dapat menghasilkan produk berupa aplikasi media pembelajaran Fisika berbasis *Augmented Reality* (AR) di platform pada materi Gerak Lurus Beraturan (GLB). Hasil penelitian ini menunjukkan bahwa: 1) Tingkat kelayakan pengembangan media *Problem Based Learning* Berbasis *Augmented Reality* (AR) materi gerak lurus beraturan untuk meningkatkan keterampilan proses sains di SMAN 4 Madiun dengan melihat hasil validasi ahli media dengan hasil sangat layak, hasil validasi ahli materi dalam kategori layak, dan hasil validasi soal pretest dan posttest dalam kategori layak. 2) Tingkat kepraktisan dalam penelitian ini dengan melihat hasil angket guru dan siswa. Berdasarkan hasil analisis data yang telah dilakukan diperoleh hasil angket guru diperoleh nilai 83,33 termasuk dalam kategori **Baik**. 3) Tingkat efektifitas dalam penelitian ini berdasarkan hasil analisis data yang telah dilakukan diperoleh hasil nilai signifikansi sebesar $0,000 < 0,05$ yang menunjukkan bahwa terdapat perbedaan keterampilan proses sains di SMAN 4 Madiun sebelum dan sesudah menggunakan media *Problem Based Learning* Berbasis *Augmented Reality* (AR) materi gerak lurus beraturan, sehingga hipotesis **diterima**. Sehingga dengan pengembangan media *problem based learning* berbasis *Augmented Reality* (AR) materi gerak lurus beraturan dapat meningkatkan keterampilan proses sains di SMAN 4 Madiun.

Kata Kunci: *Problem Based Learning*, *Augmented Reality*, Gerak Lurus Beraturan

ABSTRACT

Alfina Damayanti. NIM. 2202112010 2026. Development of -Based Augmented Reality (AR) Problem-Based Learning Media on Uniform Linear Motion to Improve Science Process Skills at SMAN 4 Madiun. Physics Education Study Program. Faculty of Teacher Training and Education. Universitas PGRI Madiun. Advisor (1) Dr. Jeffry Handika, S.Si., M.Pd., M.Si. Advisor (2) Mislan Sasono S.Pd.Si., M.Pd

The purpose of this study is to analyze the development of -based Augmented Reality (AR) Problem-Based Learning media on Uniform Linear Motion to improve science process skills at SMAN 4 Madiun. This study is categorized as a Research and Development (R&D) method. Data were obtained through test results administered to eleventh-grade students at SMAN 4 Madiun and product validation results from material and media expert teams. This study is expected to provide empirical evidence regarding the creation of valid, practical, and effective media to help students at SMAN 4 Madiun understand the concept of Uniform Linear Motion (ULM) and improve their science process skills. The results of the study are expected to produce a product in the form of a Physics learning media application based on Augmented Reality (AR) on the platform for Uniform Linear Motion (ULM) material. The results of this study indicate that: 1) Regarding the feasibility of developing the -based Augmented Reality (AR) Problem-Based Learning media for the topic of uniform linear motion to enhance science process skills at SMAN 4 Madiun, media expert validation yielded a "highly feasible" rating, while content expert validation and the validation of pretest and posttest questions fell into the "feasible" category. 2) The practicality of the media was assessed through teacher and student questionnaires; the analysis of teacher questionnaire data yielded a score of 83.33, placing it in the "Good" category. 3) Regarding effectiveness, data analysis revealed a significance value of 0.000 ($p < 0.05$), indicating a difference in science process skills at SMAN 4 Madiun before and after using the -based AR Problem-Based Learning media for uniform linear motion; thus, the hypothesis was accepted. Consequently, the development of this -based AR Problem-Based Learning media for uniform linear motion can enhance science process skills at SMAN 4 Madiun.

Keywords: *Problem-Based Learning, Augmented Reality, Uniform Linear Motion*