

Dimas Ardiansyah. 2024. *Pengembangan Media Pembelajaran Berbasis Multiple Representation Berbantuan Augmented Reality Untuk Meningkatkan Numerasi Materi Hukum Newton*. Skripsi, Program Studi Pendidikan Informatika, Fakultas Ilmu Pendidikan, Universitas Trunojoyo Madura. Pembimbing: Dr. Sigit Dwi Saputro, S.Pd., M.Pd.

ABSTRAK

Fisika merupakan bidang ilmu sains yang bersifat abstrak sehingga siswa kesulitan memahami materi. Kesulitan siswa meliputi pemahaman konsep, simbol, rumus, dan menghitung. Hal ini dikarenakan karakteristik pembelajaran fisika berupa kemampuan numerasi. Oleh karena itu, diperlukan inovasi pengembangan dalam pembelajaran. Penelitian ini bertujuan mengembangkan media pembelajaran berbasis *Multiple Representation* berbantuan *Augmented Reality* untuk meningkatkan numerasi siswa. Materi yang disajikan yaitu Hukum Newton. Penelitian ini menggunakan model penelitian *ADDIE* terdiri dari tahapan *Analysis, Design, Development, Implementation, dan Evaluation*. Instrumen pengambilan data menggunakan lembar angket validasi ahli media, validasi ahli materi, dan angket respon siswa. Penelitian ini menghasilkan media pembelajaran *Multiple Representation* berbantuan *Augmented Reality* memperoleh persentase validasi ahli materi 94% dan validasi ahli media 91% dengan kriteria sangat layak. Hasil uji respon siswa memperoleh persentase pada uji perorangan 87%, uji kelompok kecil 88%, dan uji kelompok besar 89% dengan kriteria sangat praktis. Hasil uji respon siswa berdasarkan indikator numerasi memperoleh persentase hasil uji perorangan 84%, uji kelompok kecil 87%, dan uji kelompok besar 88%. Keseluruhan hasil respon siswa berdasarkan indikator numerasi memperoleh rata-rata persentase 87% dengan kriteria sangat praktis. Berdasarkan hasil penelitian pengembangan media pembelajaran *Multiple Representation* berbantuan *Augmented Reality* dinyatakan sangat layak digunakan sebagai media pembelajaran untuk meningkatkan numerasi materi Hukum Newton.

Kata Kunci: *ADDIE, Augmented Reality, Hukum Newton, Media Pembelajaran, Multiple Representation.*

Dimas Ardiansyah. 2024. *Development of Multiple Representation-Based Learning Media Assisted by Augmented Reality to Improve Numeracy in Newton's Law Material*. Thesis, Informatics Education Study Program, Faculty of Education, Trunojoyo University Madura. Supervisor: Dr. Sigit Dwi Saputro, S.Pd., M.Pd.

ABSTRACT

Physics is an abstract field of science so students have difficulty understanding the material. Students' difficulties include understanding concepts, symbols, formulas, and calculating. This is because the characteristics of physics learning are numeracy skills. Therefore, development innovation in learning is needed. This research aims to develop learning media based on Multiple Representation assisted by Augmented Reality to improve student numeracy. The material presented is Newton's Law. This research uses the ADDIE research model consisting of Analysis, Design, Development, Implementation and Evaluation stages. Data collection instruments used media expert validation questionnaire sheets, material expert validation, and student response questionnaires. This research resulted in Multiple Representation learning media assisted by Augmented Reality obtaining a material expert validation percentage of 94% and media expert validation of 91% with very feasible criteria. The student response test results obtained a percentage of 87% in the individual test, 88% in the small group test, and 89% in the large group test with very practical criteria. The results of student response tests based on numeracy indicators obtained a percentage of individual test results of 84%, small group tests 87%, and large group tests 88%. Overall student response results based on numeracy indicators obtained an average percentage of 87% with very practical criteria. Based on the results of research on the development of Multiple Representation learning media assisted by Augmented Reality, it was stated that it is very suitable to be used as a learning media to increase the numeracy of Newton's Law material.

Keywords: *ADDIE, Augmented Reality, Newton's Law, Learning Media, Multiple Representation.*