

ABSTRAK

Nurkhaliza Andini (2025), Pengembangan Media Pembelajaran Matematika Berbasis *Virtual Reality* Berbantuan Aplikasi *MilleaLab* Pada Materi Kekongruenan di SMP

Perkembangan teknologi dalam Revolusi Industri 4.0 memberikan dampak signifikan terhadap dunia pendidikan, terutama dalam pengembangan media pembelajaran yang efektif dan inovatif. Salah satu materi matematika yang sering dianggap sulit oleh peserta didik SMP adalah kekongruenan, yang memerlukan kemampuan visualisasi tinggi. Media pembelajaran tiga dimensi interaktif berbasis teknologi dapat menjadi solusi untuk membuat proses pembelajaran lebih menarik dan memudahkan pemahaman peserta didik. Penelitian ini merupakan pengembangan media pembelajaran matematika berbasis *virtual reality* berbantuan aplikasi *MilleaLab* pada materi kekongruenan di SMP yang bertujuan untuk mengetahui proses pengembangan, validitas dan praktikalitas dari media pembelajaran yang dikembangkan. Metode pengembangan yang digunakan adalah Model ADDIE (*Analysis, Design, Development, Implementation, Evaluation*). Hasil penelitian menunjukkan bahwa media yang dikembangkan memperoleh kriteria sangat valid berdasarkan penilaian ahli media dan ahli materi yang memberikan penilaian seragam atau sama. Media pembelajaran yang dikembangkan juga dinilai sangat praktis berdasarkan respon guru dan peserta didik. Hasil penelitian ini memberikan ketersediaan alternatif media pembelajaran digital berbasis teknologi yang tidak hanya meningkatkan kualitas proses belajar mengajar matematika, tetapi juga mendukung guru dalam menghadirkan pengalaman belajar yang inovatif, menyenangkan, dan sesuai dengan tuntutan era pendidikan modern.

Kata Kunci: Kekongruenan, Media Pembelajaran Matematika, *MilleaLab*, *Virtual Reality*

ABSTRACT

Nurkhaliza Andini (2025), *Development of Virtual Reality-Based Mathematics Learning Media Assisted by the MilleaLab Application on Congruence Material in Junior High School*

Technological developments in the Industrial Revolution 4.0 have had a significant impact on the world of education, especially in the development of effective and innovative learning media. One of the mathematical materials that is often considered difficult by junior high school students is congruence, which requires high visualization skills. Technology-based interactive three-dimensional learning media can be a solution to make the learning process more interesting and facilitate student understanding. This research is the development of virtual reality-based mathematics learning media assisted by the MilleaLab application on congruence material in junior high schools which aims to determine the development process, validity, and practicality of the developed learning media. The development method used is the ADDIE Model (Analysis, Design, Development, Implementation, Evaluation). The results of the study indicate that the developed media obtained very valid criteria based on the assessment of media experts and material experts who gave uniform or the same assessment. The developed learning media were also considered very practical based on the responses of teachers and students. The results of this study provide the availability of alternative technology-based digital learning media that not only improve the quality of the mathematics teaching and learning process but also support teachers in providing innovative, enjoyable learning experiences that are in accordance with the demands of the modern education era.

Keywords: Congruence, Mathematics Learning Media, MilleaLab, Virtual Reality