

ABSTRAK

Fickry Chairul Amri (5211111002) Pengembangan Media Pembelajaran Berbasis *Augmented Reality* (AR) Pada Materi Gambar Rencana Elemen Perencanaan Pekerjaan Konstruksi dan Perumahan Kelas XI TKP SMK Negeri 14 Medan. Skripsi. Fakultas Teknik. Universitas Negeri Medan. 2025

Penelitian ini bertujuan untuk mengembangkan media pembelajaran berbasis *Augmented Reality* (AR) pada materi Gambar Rencana Elemen Perencanaan Pekerjaan Konstruksi dan Perumahan kelas XI TKP di SMK Negeri 14 Medan. Latar belakang penelitian ini didasarkan pada rendahnya hasil belajar peserta didik serta keterbatasan media pembelajaran yang masih bersifat konvensional. Metode penelitian yang digunakan adalah *Research and Development* (R&D) dengan model pengembangan 4D (*Define, Design, Develop, dan Disseminate*). Produk yang dikembangkan berupa media interaktif berbasis *Augmented Reality* (AR) dengan platform *Assemblr Studio* yang dapat diakses melalui perangkat *smartphone* berbasis Android.

Hasil penelitian menunjukkan bahwa media pembelajaran berbasis AR memperoleh tingkat kelayakan dari ahli materi dengan skor rata-rata 4,70 (kategori Sangat Layak), dan ahli media dengan skor rata-rata 4,10 (kategori Layak). Uji kepraktisan melalui respon 26 peserta didik memperoleh persentase 89,9% (kategori Sangat Praktis). Uji efektivitas menunjukkan adanya peningkatan signifikan hasil belajar, dengan skor rata-rata *pre-test* 70,23 meningkat menjadi 92,31 pada *post-test*. Analisis *N-Gain* menghasilkan nilai 0,75 (kategori Tinggi dan Cukup Efektif). Uji hipotesis menunjukkan nilai $T_{hitung} (19,61) > T_{tabel} (2,06)$, sehingga H_0 ditolak dan H_a diterima.

Dengan demikian, media pembelajaran berbasis *Augmented Reality* yang dikembangkan terbukti layak, praktis, dan efektif dalam meningkatkan hasil belajar peserta didik. Penelitian ini memberikan alternatif inovatif dalam pembelajaran konstruksi dan perumahan serta mendukung penerapan teknologi digital dalam dunia pendidikan abad 21.

Kata Kunci: Hasil Belajar, Media Pembelajaran, *Augmented Reality* (AR), Gambar Rencana

ABSTRACT

Fickry Chairul Amri (5211111002). Development of Augmented Reality (AR)-Based Learning Media on Planning Drawing Material in the Elements of Construction and Housing Planning for Grade XI TKP Students at SMK Negeri 14 Medan. Thesis. Faculty of Engineering. Universitas Negeri Medan. 2025.

This research aims to develop Augmented Reality (AR)-based learning media on Planning Drawing material in the Elements of Construction and Housing Planning for Grade XI TKP students at SMK Negeri 14 Medan. The background of this study is based on the low learning outcomes of students and the limitations of conventional learning media. The research method used is Research and Development (R&D) with a 4D development model (Define, Design, Develop, and Disseminate). The product developed is interactive learning media based on Augmented Reality (AR) using the Assemblr Studio platform, accessible through Android-based smartphones.

The results show that AR-based learning media obtained a feasibility score from material experts with an average of 4.70 (Very Feasible category) and from media experts with an average of 4.10 (Feasible category). Practicality tests through the responses of 26 students achieved 89.9% (Very Practical category). Effectiveness tests showed a significant improvement in learning outcomes, with an average pre-test score of 70.23 increasing to 92.31 in the post-test. The N-Gain analysis produced a value of 0.75 (High and Quite Effective category). The hypothesis test indicated that $T_{hitung} (19,61) > T_{tabel} (2.06)$, thus H_0 was rejected and H_a was accepted.

Therefore, the developed Augmented Reality-based learning media is proven to be feasible, practical, and effective in improving students' learning outcomes. This study provides an innovative alternative in construction and housing learning and supports the integration of digital technology in 21st-century education.

Keywords: Learning Outcomes, Learning Media, Augmented Reality (AR), Planning Drawing