

ABSTRAK

Ichsan Aulia : Pengembangan Media Pembelajaran Berbasis Android dengan Teknologi *Augmented Reality* pada Mata Pelajaran Informatika di SMA Negeri 1 Tamiang Hulu. Fakultas Teknik Universitas Negeri Medan, 2026.

Pembelajaran Informatika di SMAN 1 Tamiang Hulu masih menghadapi kendala, terutama pada materi abstrak seperti Sistem Komputer. Media yang digunakan, seperti buku dan slide presentasi, kurang efektif, dan metode ceramah membuat siswa cepat bosan. Pembelajaran mandiri juga kurang optimal karena minimnya bahan ajar visual dan keterbatasan alat peraga. Padahal, hampir seluruh siswa memiliki perangkat Android yang belum dimanfaatkan maksimal untuk belajar.

Penelitian ini bertujuan mengembangkan media pembelajaran berbasis Android dengan teknologi *Augmented Reality* (AR) pada mata pelajaran Informatika. Penelitian ini menggunakan metode *Research and Development* (R&D). Proses pengembangan mengadopsi model ADDIE (*Analysis, Design, Development, Implementation, Evaluation*) yang dikombinasikan dengan model *Multimedia Development Life Cycle* (MDLC). Subjek penelitian adalah 33 siswa kelas X-A1 SMAN 1 Tamiang Hulu. Pengujian dilakukan melalui uji kelayakan oleh ahli media dan ahli materi, serta uji akseptabilitas dan efektivitas oleh pengguna.

Produk akhir berupa aplikasi Android berformat .apk dengan teknologi AR *markerless* menggunakan *Ground Plane Detection*, dilengkapi fitur petunjuk penggunaan, capaian pembelajaran, materi, AR, video, kuis, dan profil pengembang. Hasil validasi menunjukkan media ini dinilai “Sangat Layak” oleh ahli materi dengan skor 4,20 dan ahli media dengan skor 4,22. Akseptabilitas pengguna berada pada kategori “Sangat Tinggi” dengan skor 4,56, dan uji efektivitas menghasilkan N-Gain 0,6 yang dikategorikan “Sedang”.

Dengan demikian dapat disimpulkan bahwa media pembelajaran berbasis android dengan teknologi *Augmented Reality* ini layak digunakan, diterima dengan baik, dan cukup efektif dalam meningkatkan pemahaman siswa terhadap materi Sistem Komputer.

Kata Kunci : Media Pembelajaran, Android, *Augmented Reality*, Informatika, Sistem Komputer.

ABSTRACT

Ichsan Aulia: Development of Android-Based Learning Media with Augmented Reality Technology in Informatics Subject at SMAN 1 Tamiang Hulu. Faculty of Engineering, Universitas Negeri Medan, 2026.

The teaching of Informatics at SMAN 1 Tamiang Hulu still faces several challenges, particularly in delivering abstract material such as Computer Systems. The learning media currently used, such as textbooks and presentation slides, are considered less effective, and lecture-based methods tend to bore students. Independent learning is also less optimal due to the lack of engaging visual materials and limited physical teaching aids. In fact, most students own Android devices that are not yet utilized optimally for learning.

This study aims to develop Android-based learning media integrating Augmented Reality (AR) technology for the Informatics subject. The research employed a Research and Development (R&D) method, utilizing the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) combined with the Multimedia Development Life Cycle (MDLC) model. The study involved 33 students from class X-A1 at SMAN 1 Tamiang Hulu. The product was evaluated for feasibility by media and content experts, and for acceptability and effectiveness by users.

The final product is an Android application (.apk format) using markerless AR technology with Ground Plane Detection. The application includes features such as user guides, learning objectives, instructional materials, AR content, videos, quizzes, and developer profiles. Validation results indicate that the media is rated "Highly Feasible" by content experts (score: 4.20) and media experts (score: 4.22). User acceptability was categorized as "Very High" (score: 4.56), and the effectiveness test showed an N-Gain score of 0.6, which falls into the "Moderate" category.

In conclusion, the Android-based learning media with Augmented Reality technology is feasible, well-received by users, and moderately effective in enhancing students' understanding of Computer System material in the Informatics subject.

Keywords : *Learning Media, Android, Augmented Reality, Informatics, Computer Systems*