

ABSTRAK

Wira Yudha Pratama : Pengembangan Media Pembelajaran Perencanaan dan Pengalamatan Jaringan Berbasis *Augmented Reality* (AR) Pada Kelas XI TKJ SMK Tritech Informatika. Skripsi. Fakultas Teknik Universitas Negeri Medan, 2026.

Pembelajaran pada elemen Perencanaan dan Pengalamatan Jaringan di SMK Tritech Informatika masih menghadapi kendala karena materi seperti perangkat jaringan, topologi jaringan, dan arsitektur jaringan bersifat abstrak sehingga sulit dipahami peserta didik. Penggunaan media pembelajaran masih didominasi metode ceramah dan media konvensional, sedangkan pemanfaatan *smartphone* sebagai media pembelajaran belum optimal. Penelitian ini bertujuan untuk mengembangkan media pembelajaran berbasis *Augmented Reality* (AR), mengetahui tingkat kelayakan media menurut ahli materi dan ahli media, mengetahui tingkat akseptansi pengguna, serta mengetahui efektivitas media dalam meningkatkan pemahaman peserta didik. Penelitian ini menggunakan metode *Research and Development* (R&D) dengan model ADDIE yang meliputi tahap *Analysis*, *Design*, *Development*, *Implementation*, dan *Evaluation*. Subjek penelitian terdiri atas dua ahli materi, dua ahli media, satu guru mata pelajaran, dan 30 peserta didik kelas XI TKJ SMK Tritech Informatika. Pengujian dilakukan melalui uji kelayakan, uji akseptansi pengguna, dan uji efektivitas menggunakan analisis N-Gain. Produk akhir berupa aplikasi Android berbasis *Augmented Reality* yang dipadukan dengan AR *Book* sebagai *marker* dan dilengkapi menu petunjuk, capaian pembelajaran dan tujuan pembelajaran, materi, simulasi, kuis, serta informasi pengembang. Hasil penelitian menunjukkan bahwa media memperoleh nilai rata-rata 4,35 pada validasi ahli materi dengan kategori “Sangat Layak”, nilai rata-rata 4,29 pada validasi ahli media dengan kategori “Sangat Layak”, serta nilai rata-rata 4,41 pada uji akseptansi pengguna dengan kategori “Akseptansi Sangat Tinggi”. Hasil uji efektivitas menunjukkan nilai N-Gain sebesar 0,77 dengan kategori “Tinggi” dan N-Gain *Score* sebesar 77% dengan kategori “Efektif”. Dengan demikian, media pembelajaran berbasis *Augmented Reality* yang dikembangkan dinyatakan sangat layak, memperoleh akseptansi sangat tinggi, serta efektif digunakan untuk meningkatkan pemahaman peserta didik pada elemen Perencanaan dan Pengalamatan Jaringan.

Kata Kunci: Media Pembelajaran, Android, *Augmented Reality*, Perencanaan dan Pengalamatan Jaringan, Efektivitas.

ABSTRACT

Wira Yudha Pratama: *Development of Augmented Reality (AR) Based Network Planning and Addressing Learning Media for Class XI TKJ of SMK Tritech Informatika. Undergraduate Thesis. Faculty of Engineering, State University of Medan, 2026.*

Learning on the Network Planning and Addressing element at SMK Tritech Informatika still faces obstacles because materials such as network devices, network topology, and network architecture are abstract, making it difficult for students to understand. The use of learning media is still dominated by lecture methods and conventional media, while the use of smartphones as a learning medium is not optimal. This study aims to develop Augmented Reality (AR)-based learning media, determine the level of media feasibility according to material experts and media experts, determine the level of user acceptance, and determine the effectiveness of the media in improving student understanding. This study uses the Research and Development (R&D) method with the ADDIE model which includes the stages of Analysis, Design, Development, Implementation, and Evaluation. The research subjects consisted of two material experts, two media experts, one subject teacher, and 30 students of class XI TKJ SMK Tritech Informatika. Testing was carried out through feasibility tests, user acceptance tests, and effectiveness tests using N-Gain analysis. The final product is an Android application based on Augmented Reality combined with AR Book as a marker and equipped with a menu of instructions, learning outcomes and learning objectives, materials, simulations, quizzes, and developer information. The results of the study showed that the media obtained an average value of 4.35 in the validation of material experts with the category of "Very Feasible", an average value of 4.29 in the validation of media experts with the category of "Very Feasible", and an average value of 4.41 in the user acceptability test with the category of "Very High Acceptance". The results of the effectiveness test showed an N-Gain value of 0.77 with the category of "High" and an N-Gain Score of 77% with the category of "Effective". Thus, the Augmented Reality-based learning media developed was declared very feasible, obtained very high acceptability, and was effective in improving students' understanding of the elements of Network Planning and Addressing.

Keywords: *Learning Media, Android, Augmented Reality, Network Planning and Addressing, Effectiveness.*