

ABSTRAK

Amri Fajar Pratama: *Pengembangan Media Pembelajaran Trainer Menggunakan RFID Berbasis Internet of Things pada Siswa Kelas XI TJKT di SMK Negeri 1 Beringin*. Skripsi. Fakultas Teknik. Universitas Negeri Medan. 2026.

Pembelajaran Internet of Things (IoT) di SMK masih didominasi teori dan belum didukung media praktik yang mengintegrasikan teknologi Radio Frequency Identification (RFID) dengan IoT. Penelitian ini bertujuan untuk mengetahui kelayakan dan efektivitas media pembelajaran trainer RFID berbasis IoT dalam meningkatkan hasil belajar siswa kelas XI Teknik Jaringan Komputer dan Telekomunikasi (TJKT) di SMK Negeri 1 Beringin. Metode yang digunakan adalah Research and Development (R&D) dengan model ADDIE yang meliputi tahap Analysis, Design, Development, Implementation, dan Evaluation. Hasil penelitian menunjukkan bahwa media pembelajaran yang dikembangkan memperoleh kategori Sangat Layak berdasarkan validasi ahli media dengan persentase sebesar 93% dan validasi ahli materi sebesar 95%. Hasil uji coba lapangan terhadap 33 siswa juga menunjukkan respon yang sangat positif dengan persentase keseluruhan sebesar 94,22% yang termasuk kategori Sangat Layak. Pengujian efektivitas menunjukkan adanya peningkatan hasil belajar, dengan rata-rata nilai pretest sebesar 49,09 meningkat menjadi 94,39 pada posttest. Hasil analisis N-Gain memperoleh skor sebesar 87,94% yang termasuk kategori Efektif, sehingga menunjukkan bahwa penggunaan trainer RFID berbasis IoT mampu meningkatkan hasil belajar siswa secara signifikan.

Kata kunci: Media Pembelajaran, Trainer RFID, Internet of Things (IoT), Research and Development (R&D), ADDIE, Hasil Belajar.

ABSTRACT

Amri Fajar Pratama: *Development of Trainer Learning Media Using RFID Based on the Internet of Things for 11th Grade TJKT Students at SMK Negeri 1 Beringin*. Undergraduate Thesis. Faculty of Engineering. Medan State University. 2026.

Internet of Things (IoT) learning in vocational high schools is still predominantly theoretical and is not yet supported by practical learning media that integrate Radio Frequency Identification (RFID) technology with IoT. This study aimed to determine the feasibility and effectiveness of an IoT-based RFID trainer as a learning medium to improve the learning outcomes of eleventh-grade students in the Computer and Network Engineering and Telecommunications (TJKT) program at SMK Negeri 1 Beringin. This research employed the Research and Development (R&D) method using the ADDIE model, which consists of the Analysis, Design, Development, Implementation, and Evaluation stages. The results showed that the developed learning media was categorized as Highly Feasible, with validation scores of 93% from media experts and 95% from subject matter experts. Field testing involving 33 students also demonstrated a highly positive response, with an overall percentage of 94.22%, which falls into the Highly Feasible category. The effectiveness test indicated a significant improvement in students' learning outcomes, with the average pretest score increasing from 49.09 to 94.39 on the posttest. Furthermore, the N-Gain analysis yielded a score of 87.94%, which is categorized as Effective, indicating that the IoT-based RFID trainer significantly improved students' learning outcomes.

Keywords: Learning Media, RFID Trainer, Internet of Things (IoT), Research and Development (R&D), ADDIE, Learning Outcomes.