

ABSTRAK

Faisal Tanjung: *Pengembangan Media Pembelajaran Simulator Sistem Penerangan pada Sepeda Motor Berbasis Website untuk Meningkatkan Hasil Belajar pada Elemen Kompetensi Memelihara dan Memperbaiki Sistem Penerangan Kelas XI Teknik Sepeda Motor (TSM) di SMK Negeri 14 Medan.* Skripsi. Fakultas Teknik. Universitas Negeri Medan. 2025.

Penelitian ini bertujuan untuk: (1) Mengembangkan media pembelajaran simulator sistem penerangan sepeda motor berbasis *website*, dan (2) Mengetahui tingkat kelayakan serta efektivitas media dalam meningkatkan hasil belajar siswa kelas XI TSM di SMK Negeri 14 Medan.

Penelitian ini menggunakan metode *Research and Development (R&D)* dengan model pengembangan ADDIE (*Analysis, Design, Development, Implementation, Evaluation*). Subjek uji coba terdiri dari satu kelas XI TSM berjumlah 32 siswa. Media divalidasi oleh tiga orang ahli materi, tiga orang ahli desain, dan tiga orang ahli media dengan rata-rata persentase validasi berturut-turut sebesar 90,8%, 88,4%, dan 95,6%. Uji coba kelompok kecil menunjukkan persentase kelayakan sebesar 95,6%, uji coba kelompok besar sebesar 91,3%, serta respon guru memperoleh hasil 93,1% yang dikategorikan “sangat layak”.

Efektivitas media diuji melalui hasil pre-test dan post-test. Rata-rata nilai pre-test siswa sebesar 66,33 meningkat menjadi 83,94 pada post-test. Nilai N-Gain sebesar 0,62 termasuk dalam kategori sedang dan cukup efektif. Dengan demikian, media pembelajaran berbasis *website* ini dinyatakan layak, cukup efektif, dan dapat digunakan sebagai alat bantu dalam proses pembelajaran pada kompetensi sistem penerangan sepeda motor.

Kata Kunci : Pengembangan, Media Pembelajaran, Sistem Penerangan, *Website*, Hasil Belajar



ABSTRACT

Faisal Tanjung: Development of a Web-Based Learning Media Simulator on Motorcycle Lighting Systems to Improve Learning Outcomes in the Competency Element of Maintaining and Repairing Lighting Systems for Grade XI TSM Students at SMK Negeri 14 Medan. Thesis. Faculty of Engineering. Universitas Negeri Medan. 2025.

This study aims to: (1) Develop a web-based learning media simulator on motorcycle lighting systems, and (2) Determine the validity and effectiveness of the media in improving student learning outcomes in Grade XI TSM at SMK Negeri 14 Medan.

The research method used is Research and Development (R&D) with the ADDIE development model (*Analysis, Design, Development, Implementation, Evaluation*). The trial subjects consisted of one class of 32 Grade XI TSM students. The media was validated by three subject matter experts, three design experts, and three media experts, with average validation scores of 90.8%, 88.4%, and 95.6% respectively. The small group trial showed a feasibility score of 95.6%, while the large group trial obtained 91.3%, and the teacher's response reached 93.1%, all categorized as "very feasible"

The effectiveness of the media was tested through pre-test and post-test results. The average pre-test score of students was 66.33, which increased to 83.94 in the post-test. The N-Gain score of 0.62 falls into the moderate category, indicating the media is fairly effective. Thus, the web-based learning media is considered feasible, sufficiently effective, and can be used as a learning aid in teaching motorcycle lighting system competencies.

Keywords: Learning media, lighting system, simulator, website, learning outcomes.

