

ABSTRAK

Grace N.V. Simanungkalit : Pengembangan Media Pembelajaran Berbasis Web Pada Mata Pelajaran Informatika Di SMKS Imelda Medan. Skripsi. Fakultas Teknik Universitas Negeri Medan. 2025.

Penelitian ini bertujuan mengembangkan media pembelajaran berbasis web pada mata pelajaran Informatika di kelas X-TKJ SMKS IMELDA Medan menggunakan model 4D (*Define, Design, Develop, Disseminate*). Tahap *Define* mengidentifikasi kendala pembelajaran konvensional, keterbatasan sumber belajar, dan kebutuhan siswa terhadap media interaktif. Pada tahap *Design*, media dirancang meliputi use case diagram, flowchart, dan tampilan menu sesuai materi sistem operasi, termasuk peran sistem operasi serta mekanisme internal perangkat keras, perangkat lunak, dan pengguna. Tahap *Develop* media dikembangkan menggunakan metode waterfall, diuji kelayakannya oleh ahli dengan hasil website 85%, materi 88%, dan desain 91%, kategori “Sangat Layak”. Setelah revisi, uji akseptansi menunjukkan 95% dan dikategorikan “Sangat Baik”. Tahap *Disseminate* dilakukan melalui uji coba soal latihan dan angket penilaian siswa, dengan N-Gain 89%, menunjukkan peningkatan hasil belajar. Media ini terbukti efektif, menarik, mudah diakses, dan mampu meningkatkan pemahaman serta hasil belajar siswa.

Kata Kunci : Pembelajaran Berbasis *Web*, Pengembangan Media Pembelajaran, Model 4D, Pembelajaran Informatika, Efektivitas Media Pembelajaran.

ABSTRACT

Grace N.V. Simanungkalit: *Development of Web-Based Learning Media in Informatics Subject at SMKS Imelda Medan. Thesis. Faculty of Engineering, State University of Medan. 2025.*

This study aims to develop a web-based learning media for the Informatics subject in class X-TKJ at SMKS IMELDA Medan using the 4D model (Define, Design, Develop, Disseminate). The Define stage identified problems in conventional learning, limited learning resources, and students' need for interactive media. In the Design stage, the media was designed, including use case diagrams, flowcharts, and menu displays aligned with Operating System material, covering the roles of the operating system and internal mechanisms of hardware, software, and users. In the Develop stage, the media was developed using the waterfall method and validated by experts, with feasibility results of 85% for the website, 88% for the material, and 91% for the learning design, categorized as "Very Feasible." After revisions, user acceptance testing showed 95% and was rated "Excellent." The Disseminate stage was conducted through trial exercises and student evaluation questionnaires, with an N-Gain of 89%, indicating improved learning outcomes. The media proved to be effective, engaging, easily accessible, and capable of enhancing students' understanding and learning achievement.

Keywords: *Web Based Learning, Learning Media Development, 4D Model, Informatics Learning, Instructional Media Effectiveness*