

## ABSTRAK

**Ray Yudika Sianturi, NIM (5212451002) Pengembangan Media Pembelajaran Berbasis *Website* dengan Penerapan *Project Based Learning* pada Mata Pelajaran Pemrograman Web Kelas X RPL SMKS Tritech Informatika Medan.**

Penelitian ini bertujuan untuk menghasilkan media pembelajaran berbasis *website* yang dirancang untuk mendukung penerapan *Project Based Learning* (PjBL) pada mata pelajaran Pemrograman Web. Jenis penelitian yang digunakan adalah penelitian dan pengembangan (*Research and Development/R&D*) dengan model pengembangan *Waterfall* atau Model Sekuensial Linear, yang meliputi tahap analisis, perancangan, pengembangan, pengujian, dan pemeliharaan. Pengujian produk dilakukan melalui validasi ahli materi, uji kualitas sistem berdasarkan standar ISO 9126, serta uji akseptabilitas peserta didik. Hasil validasi ahli materi memperoleh skor rata-rata 4,35 dengan kategori Sangat Layak. Pada uji kualitas sistem menurut ISO 9126 diperoleh persentase *Functionality* 88%, *Reliability* 86,67%, *Usability* 96,67%, *Efficiency* 90%, *Maintainability* 90%, dan *Portability* 90%, dengan rata-rata keseluruhan 90,22% berkategori Sangat Baik. Uji akseptabilitas oleh 20 peserta didik menghasilkan total skor 1.058 dari maksimum 1.200 atau 88,2% dengan kategori Sangat Layak. Berdasarkan hasil tersebut, media pembelajaran berbasis *website* ini dinyatakan layak, mudah digunakan, dan dapat diterima oleh peserta didik sebagai pendukung pembelajaran berbasis proyek.

**Kata kunci:** *Media Pembelajaran, Website, Project Based Learning, ISO 9126, Akseptabilitas, Waterfall.*



## ABSTRACT

**Ray Yudika Sianturi, NIM (5212451002) *Development of Web-Based Learning Media with the Implementation of Project Based Learning for the Web Programming Subject of Grade X Software Engineering Students at SMKS Tritech Informatika Medan.***

This research aims to develop web-based learning media designed to support the implementation of Project Based Learning (PjBL) in the Web Programming subject. The study employs a Research and Development (R&D) approach using the Waterfall or Linear Sequential Model, consisting of analysis, design, development, testing, and maintenance stages. Product evaluation was conducted through material expert validation, system quality testing based on the ISO 9126 standard, and student acceptability testing. The material expert validation obtained an average score of 4.35, categorized as *Highly Feasible*. System quality testing based on ISO 9126 resulted in the following scores: Functionality 88%, Reliability 86.67%, Usability 96.67%, Efficiency 90%, Maintainability 90%, and Portability 90%, with an overall average of 90.22%, categorized as *Very Good*. Furthermore, the acceptability test involving 20 students produced a total score of 1,058 out of 1,200, equivalent to 88.2%, categorized as *Highly Acceptable*. Based on these findings, the developed web-based learning media is declared feasible, easy to use, and well-received by learners as a supportive tool for project-based learning activities.

**Kata kunci:** *Learning Media, Website, Project Based Learning, ISO 9126, Acceptability, Waterfall.*

