

ABSTRAK

Yadika Sitorus: *Pengembangan E-Modul Berbasis Project Based Learning (PjBL) Pada Mata Pelajaran Informatika di SMK PAB 2 Helvetia*. Skripsi Fakultas Teknik Universitas Negeri Medan 2025.

Penelitian ini memiliki tujuan untuk mengetahui kelayakan media E-Modul berbasis *project based learning* dan juga untuk mengetahui efektivitas media E-Modul berbasis *project based learning* pada mata pelajaran Jaringan Komputer dan Internet di SMK PAB 2 Helvetia. Penelitian ini bertujuan untuk mengembangkan e-modul berbasis *Project Based Learning* (PjBL) pada mata pelajaran Informatika di SMK PAB 2 Helvetia sebagai upaya meningkatkan keterlibatan dan keterampilan berpikir kritis siswa. Penelitian ini merupakan penelitian pengembangan dengan model ADDIE yaitu *analyze, design, development, implementation, evaluation*. Subjek penelitian ini adalah 24 Siswa X RPL 2 SMK PAB 2 Helvetia. Kelayakan media E-Modul berdasarkan keseluruhan rata-rata persentase hasil ahli media sebesar 85 yang berarti “sangat layak” ahli materi total rata-rata persentase sebesar 91,87 yang berarti “Sangat Layak”, dan Akseptabilitas pengguna produk total rata-rata persentase sebesar 91,66 yang berarti “Sangat Layak”. Jadi dapat dikatakan secara umum bahwa media E-Modul yang dibuat sepenuhnya dapat digunakan. Hasil penelitian uji efektivitas penggunaan E-Modul berbasis *project based learning* (PjBL) pada siswa kelas X RPL pada mata pelajaran jaringan komputer dan internet memiliki pengaruh yang signifikan terhadap hasil belajar siswa. Hal ini dapat dilihat dari hasil belajar siswa dengan menggunakan media tersebut lebih tinggi yaitu 80,42. Sementara siswa kelas kontrol atau siswa yang kegiatan belajarnya tanpa media E-Modul memperoleh nilai rata-rata posttest sebesar 44,17 .

Kata Kunci : Pengembangan, Media Pembelajaran, E-Modul, *Project Based Learning*

ABSTRACT

Yadika Sitorus: *Development of Project-Based Learning (PjBL) Based E-Modules in Informatics Subjects at SMK PAB 2 Helvetia. Thesis Faculty of Engineering, Universitas Negeri Medan 2025.*

This research aims to determine the feasibility of project-based learning (PjBL) E-Module media and also to assess the effectiveness of project-based learning (PjBL) E-Module media in the subject of Computer Networks and the Internet at SMK PAB 2 Helvetia. This study aims to develop a Project Based Learning (PjBL) based e-module in the subject of Informatics at SMK PAB 2 Helvetia as an effort to enhance student engagement and critical thinking skills. This research is a development study using the ADDIE model, which stands for analysis, design, development, implementation, and evaluation. The subjects of this research are 24 students from class X RPL 2 at SMK PAB 2 Helvetia. The feasibility of the E-Module media based on the overall average percentage of media expert results is 85, which means "very feasible," the total average percentage of material experts is 91.87, which means "very feasible," and the total average percentage of product user acceptability is 91.66, which means "very feasible." So it can be generally said that the E-Module media created is fully usable. The results of the research on the effectiveness of using the E-Module based on project-based learning (PjBL) for class X RPL students in the subject of computer networks and the internet have a significant impact on student learning outcomes. This can be seen from the students' learning outcomes using the media, which were higher at 80.42. Meanwhile, the control class students or students whose learning activities did not use the E-Module media obtained an average posttest score of 44.17.

Keywords: *Development, Learning Media, E-Module, Project Based Learning*