

ABSTRAK

Johan Siagian. NIM 5203311014. Pengaruh Penggunaan E-Modul Berbasis Model Project Based Learning Terhadap Hasil Belajar Siswa Pada Mata Pelajaran Dasar-Dasar Desain Pemodelan dan Informasi Bangunan Kelas X DPIB SMK Negeri 14 Medan. Skripsi. Fakultas Teknik Universitas Negeri Medan. 2025.

Penelitian ini bertujuan untuk menganalisis dan membuktikan perbedaan pengaruh yang signifikan antara penggunaan E-Modul berbasis model *Project Based Learning* dibandingkan dengan penggunaan modul cetak berbasis model pembelajaran langsung (*Direct Instruction*) terhadap hasil belajar kognitif siswa pada mata pelajaran Dasar-Dasar Desain Pemodelan dan Informasi Bangunan, khususnya elemen profesi dan kewirausahaan, di kelas X DPIB SMK Negeri 14 Medan. Hasil analisis data menunjukkan bahwa terdapat perbedaan yang sangat signifikan antara hasil belajar siswa di kelas eksperimen dan kelas kontrol, di mana penggunaan E-Modul berbasis PjBL memberikan pengaruh positif yang lebih besar. Hal ini dibuktikan dengan hasil uji-t di mana nilai t hitung (4.426) lebih besar dari ttabel (1.670), sehingga hipotesis alternatif (H_a) diterima. Rata-rata hasil belajar kognitif kelas eksperimen (81.344) jauh lebih tinggi dan telah mencapai KKM (≥ 75), dibandingkan rata-rata kelas kontrol (63.75) yang masih di bawah KKM (< 75). Penggunaan E-Modul berbasis *Project Based Learning* terbukti secara signifikan lebih efektif dalam meningkatkan hasil belajar siswa pada mata pelajaran Dasar-Dasar Desain Pemodelan dan Informasi Bangunan dibandingkan dengan modul cetak berbasis *Direct Instruction*.

Kata Kunci: E-Modul, Project Based Learning (PjBL), Hasil Belajar, Dasar-Dasar Desain Pemodelan dan Informasi Bangunan.



ABSTRACT

Johan Siagian. Student ID Number 5203311014. The Effect of Using Project-Based Learning E-Modules on Student Learning Outcomes in Basic Building Modeling and Information Design for Grade X DPIB at SMK Negeri 14 Medan. Thesis. Faculty of Engineering, University of Medan. 2025.

This study aims to analyze and prove the significant difference in the effect of using Project-Based Learning (PBL)-based E-Modules compared to using print modules based on the Direct Instruction model on students' cognitive learning outcomes in the subject of Fundamentals of Building Modeling and Information Design, particularly in the elements of profession and entrepreneurship, in class X DPIB at SMK Negeri 14 Medan. The results of data analysis show that there is a very significant difference between the learning outcomes of students in the experimental class and the control class, where the use of E-Modules based on PjBL has a greater positive effect. This is proven by the t-test results where the t-value (4.426) is greater than the t-table (1.670), so that the alternative hypothesis (H_a) is accepted. The average cognitive learning outcome of the experimental class (81.344) was much higher and had reached the minimum passing grade (≥ 75), compared to the average of the control class (63.75), which was still below the minimum passing grade (< 75). The use of Project-Based Learning-based E-Modules has been proven to be significantly more effective in improving student learning outcomes in the subject of Fundamentals of Building Modeling and Information Design compared to Direct Instruction-based printed modules.

Keywords: E-Module, Project Based Learning (PjBL), Learning Outcomes, Fundamentals of Modeling Design and Building Information.

