

## ABSTRAK

**Indra Mikael Panjaitan : Pengaruh Model Pembelajaran *Problem Based Learning* (PBL) terhadap Hasil Belajar Siswa Pada Materi Pengalamatan IP Dalam Jaringan Komputer di SMK Negeri 2 Doloksanggul. Skripsi. Fakultas Teknik Universitas Negeri Medan. 2026.**

Penelitian ini bertujuan untuk mengetahui pengaruh penerapan model *Problem Based Learning* (PBL) dibandingkan dengan model *Discovery Learning* terhadap hasil belajar siswa pada materi pengalamatan IP di SMK Negeri 2 Doloksanggul, yang dilatarbelakangi oleh rendahnya capaian belajar siswa akibat dominasi metode konvensional yang membuat siswa pasif. Metode penelitian yang digunakan adalah eksperimen semu (*quasi-experiment*) dengan desain *Pre-test* dan *Post-test Control Group Design*, melibatkan sampel sebanyak 28 siswa kelas X TKJ 1 sebagai kelas eksperimen (model PBL) dan 28 siswa kelas X TKJ 2 sebagai kelas kontrol (model *Discovery Learning*) yang ditentukan melalui teknik *cluster random sampling*. Data dikumpulkan melalui instrumen tes objektif yang mencakup ranah kognitif C1 hingga C6. Hasil penelitian menunjukkan bahwa rata-rata nilai *post-test* kelas eksperimen (85,2) lebih tinggi dibandingkan kelas kontrol (79,6), di mana pengujian hipotesis menggunakan uji-t menghasilkan nilai t-hitung sebesar 2,059 yang lebih besar dari t-tabel sebesar 2,004 pada taraf signifikansi  $\alpha = 0,05$ . Berdasarkan hasil tersebut, dapat disimpulkan bahwa model *Problem Based Learning* secara signifikan lebih efektif dalam meningkatkan hasil belajar siswa pada materi pengalamatan IP dibandingkan dengan model *Discovery Learning*.

**Kata Kunci :** *Problem Based Learning*, *Discovery Learning*, Hasil Belajar, Pengalamatan IP.



## **ABSTRACT**

**Indra Mikael Panjaitan: The Effect of the Problem-Based Learning (PBL) Model on Student Learning Outcomes Regarding IP Addressing in Computer Networks at SMK Negeri 2 Doloksanggul. Undergraduate Thesis. Faculty of Engineering, State University of Medan. 2026.**

*This study aims to determine the effect of implementing the Problem Based Learning (PBL) model compared to the Discovery Learning model on student learning outcomes in IP addressing material at SMK Negeri 2 Doloksanggul, driven by low student achievement caused by the dominance of conventional teaching methods. The research employed a quasi-experimental method with a Pre-test and Post-test Control Group Design, involving a sample of 28 students from class X TKJ 1 as the experimental group (PBL model) and 28 students from class X TKJ 2 as the control group (Discovery Learning model), selected through cluster random sampling. Data were collected using objective tests covering cognitive domains C1 to C6. The results indicated that the average post-test score of the experimental class (85.2) was higher than the control class (79.6), where hypothesis testing using a t-test yielded a t-count value of 2.059, which is greater than the t-table value of 2.004 at a significance level of  $\alpha = 0.05$ . Based on these findings, it can be concluded that the Problem Based Learning model is significantly more effective in improving student learning outcomes in IP addressing material compared to the Discovery Learning model.*

**Keywords :** Problem Based Learning, Discovery Learning, Learning Outcomes, IP Addressing.