

ABSTRAK

Chevin Sitanggang: *Pengaruh Model Pembelajaran Project Based Learning (PjBL) Terhadap Hasil Belajar Siswa Mata Pelajaran Kelistrikan Otomotif Kelas XI di SMK Negeri 2 Medan*. Skripsi. Fakultas Teknik. Universitas Negeri Medan. 2025.

Penelitian ini bertujuan: 1) Untuk menganalisis pengaruh penerapan model pembelajaran *Project Based Learning* (PjBL) terhadap hasil belajar kognitif siswa kelas XI SMK Negeri 2 Medan pada mata pelajaran kelistrikan otomotif, 2) Untuk menganalisis besar pengaruh model pembelajaran *Project Based Learning* (PjBL) terhadap hasil belajar kognitif siswa kelas XI SMK Negeri 2 Medan pada mata pelajaran kelistrikan otomotif, 3) Untuk Menganalisis perbandingan peningkatan hasil belajar kognitif antara siswa yang diajar dengan model PjBL dan siswa dengan pembelajaran konvensional. Penelitian ini dikalsakanan di kelas XI Program Keahlian Teknik Kendaraan Ringan SMK Negeri 2 Medan Tahun Pembelajaran 2025/2026. Penelitian ini merupakan penelitian eksperimen yang melibatkan dua kelas dan diberi perlakuan yang berbeda. Siswa dijadikan sampel dalam penelitian ini sebanyak 2 kelas yang berjumlah 60 orang dimana jumlah siswa untuk kelas eksperimen sebanyak 30 siswa dan kelas kontrol sebanyak 30 siswa. Kelas eksperimen (Kelas X TKR 1) diberi perlakuan pembelajaran dengan menggunakan model pembelajaran *Project Based Learning* (PjBL) dan untuk kelas kontrol (Kelas X TKR 2) menggunakan model pembelajaran *Discovery Learning*. Hasil belajar siswa pada kelas XI TKR 1 sebelum diberikan perlakuan rata-rata pre-tes 31,3 dan setelah diberikan perlakuan dengan menggunakan model *Project Based Learning* (PjBL) diperoleh rata-rata pos-tes 87,16 sedangkan hasil belajar siswa pada kelas XI TKR 2 sebelum diberikan perlakuan rata-rata pre-tes 25,08 dan setelah diberikan model pembelajaran ekspositori diperoleh rata-rata pos-tes 76,16. Hasil perhitungan uji t pos-tes diperoleh nilai sebesar 4,53 dan sebesar 1,20 pada taraf sehingga diperoleh ($1,45 > 1,20$), sehingga H_0 ditolak dan H_a diterima, ini menunjukkan bahwa hasil belajar yang pembelajarannya menggunakan model *Project Based Learning* (PjBL) lebih tinggi dibandingkan hasil belajar siswa yang pembelajarannya menggunakan model pembelajaran *Discovery Learning*.

Kata Kunci : *Project Based Learning*, *Discovery Learning*, Hasil Belajar, Model Pembelajaran, dan Kelistrikan Otomotif

ABSTRACT

Chevin Sitanggang: The Effect of Project Based Learning (PjBL) Learning Model on Student Learning Outcomes in Automotive Electrical Subjects of Grade XI at SMK Negeri 2 Medan. Thesis. Faculty of Engineering. State University of Medan. 2025.

This study aims: 1) To analyze the effect of the implementation of the Project Based Learning (PjBL) learning model on the cognitive learning outcomes of grade XI students of SMK Negeri 2 Medan in the subject of automotive electrical, 2) To analyze the magnitude of the influence of the Project Based Learning (PjBL) learning model on the cognitive learning outcomes of grade XI students of SMK Negeri 2 Medan in the subject of automotive electrical, 3) To analyze the comparison of the increase in cognitive learning outcomes between students taught with the PjBL model and students with conventional learning. This research was conducted in grade XI students of the Light Vehicle Engineering Expertise Program of SMK Negeri 2 Medan in the 2025/2026 Academic Year. This research is an experimental study involving two classes and given different treatments. Students were sampled in this study as many as 2 classes totaling 60 people where the number of students for the experimental class was 30 students and the control class was 30 students. The experimental class (Class X TKR 1) was given learning treatment using the Project Based Learning (PjBL) learning model and for the control class (Class X TKR 2) using the Discovery Learning learning model. The learning outcomes of students in class XI TKR 1 before being given treatment had an average pre-test of 31.3 and after being given treatment using the Project Based Learning (PjBL) model, the average post-test was 87.16 while the learning outcomes of students in class XI TKR 2 before being given treatment had an average pre-test of 25.08 and after being given the expository learning model, the average post-test was 76.16. The post-test t-test results yielded a value of 4.53 and a value of 1.20 at a significance level ($1.45 > 1.20$). Therefore, H_0 is rejected and H_a is accepted. This indicates that learning outcomes using the Project-Based Learning (PjBL) model are higher than those using the Discovery Learning model.

Keywords: Project Based Learning, Discovery Learning, Learning Outcomes, Learning Models, and Electricity Otomotive