

## ABSTRAK

**Chateine Juliana Sitorus, 4223131043 (2025). Pengaruh Model *Problem Based Learning* terhadap Hasil Belajar dan Keterampilan Proses Sains Siswa pada Materi Termokimia Kelas XI SMA Negeri 1 Silaen.**

Penelitian ini dilakukan untuk mengetahui pengaruh model pembelajaran *Problem Based Learning* terhadap hasil belajar dan keterampilan proses sains siswa pada materi termokimia. Penelitian ini menggunakan metode quasi eksperimen dengan pendekatan *pretest-posttest group design* yang melibatkan dua kelompok berbeda, yakni kelompok eksperimen dan kelompok kontrol. Populasi penelitian adalah seluruh siswa kelas XI SMA Negeri 1 Silaen. Pengambilan sampel dilakukan dengan teknik *random sampling*, sehingga ditetapkan kelas XI-2 yang berjumlah 35 siswa sebagai kelas eksperimen yang menerapkan model *Problem Based Learning* dan kelas XI-3 yang berjumlah 35 siswa sebagai kelas kontrol yang menggunakan pembelajaran konvensional. Hasil penelitian menunjukkan nilai rata-rata hasil belajar kelas eksperimen sebesar 82,86 dan kelas kontrol sebesar 76,57. Uji hipotesis menyatakan nilai  $t_{hitung} > t_{tabel}$  ( $3,832 > 1,667$ ) artinya terdapat pengaruh signifikan model *Problem Based Learning* terhadap hasil belajar siswa pada materi termokimia. Capaian rata-rata keterampilan proses sains kelas eksperimen sebesar 82,46% berkategori baik, lebih tinggi dibandingkan kelas kontrol sebesar 78,06% berkategori baik. Uji korelasi dilakukan menggunakan korelasi *product moment* dan diperoleh nilai  $r_{hitung}$  sebesar 0,717 yang artinya keterampilan proses sains dan hasil belajar memiliki korelasi yang kuat dengan koefisien determinasi sebesar 51,4%.

**Kata Kunci:** *Problem Based Learning*, Hasil Belajar, Keterampilan Proses Sains, Termokimia.

## ABSTRACT

**Chateine Juliana Sitorus, 4223131043 (2025). The Effect of Problem Based Learning (PBL) on Learning Outcomes and Science Process Skills of Students in Thermochemistry Material Grade XI at SMA Negeri 1 Silaen.**

This study was conducted to determine the effect of the Problem Based Learning model on student learning outcomes and science process skills in thermochemistry material. This study employed a quasi-experimental method with a pretest-posttest group design involving two different groups, namely the experimental group and the control group. The research population was grade XI students of SMA Negeri 1 Silaen. Sampling was conducted using a random sampling technique, resulting in class XI-2 with 35 students being assigned as the experimental class implementing the Problem Based Learning model, and class XI-3 with 35 students as the control class using conventional learning. The results showed that the mean score of the experimental class was 82.86 and the control class was 76.57. The hypothesis test showed  $t_{\text{count}} > t_{\text{table}}$  ( $3.832 > 1.667$ ), indicating a significant effect of the Problem Based Learning model on student learning outcomes in thermochemistry material. The average science process skills of the experimental class reached 82.46% categorized as good, higher than the control class at 78.06% categorized as good. Correlation analysis using the product moment correlation obtained  $r_{\text{count}}$  of 0.717, indicating a strong correlation between science process skills and learning outcomes, with a coefficient of determination of 51.4%.

**Keywords :** Problem Based Learning, Learning Outcomes, Science Process Skills, Thermochemistry.