

PERBANDINGAN ANTARA *PROJECT BASED LEARNING* DENGAN  
*DISCOVERY LEARNING* UNTUK MENINGKATKAN STRATEGI  
METAKOGNITIF DAN PENGUASAAN KONSEP SISWA PADA MATERI  
PEMANASAN GLOBAL

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**ABSTRAK**

Penelitian ini bertujuan untuk membandingkan efektivitas *project based learning* dengan *discovery learning* untuk meningkatkan strategi metakognitif dan penguasaan konsep siswa pada materi pemanasan global yang dilakukan pada salah satu SMPN di Kota Bandung. Penelitian ini menggunakan *Pretest Posttest Control Group Design*. Penelitian ini menggunakan dua kelas eksperimen, kelas pertama menerapkan model *project based learning* (n=26) dan kelas kedua menerapkan model *discovery learning* (n=28). Pengumpulan data dilakukan melalui kuesioner strategi metakognitif, tes penguasaan konsep menggunakan soal uraian, kuesioner tanggapan siswa dan lembar observasi keterlaksanaan pembelajaran. Hasil analisis data menunjukkan bahwa *N-Gain* strategi metakognitif pada *discovery learning* lebih tinggi daripada *project based learning*, meskipun *N-Gain* strategi metakognitif tergolong rendah (Kelas I=0,086; Kelas II=0,194). Selisih *N-Gain* pada strategi metakognitif paling sedikit terdapat pada cakupan aspek keterampilan mengukur diri dan proses regulasi pembelajaran sedangkan paling banyak terdapat pada cakupan aspek alokasi waktu dan strategi. Uji statistik menunjukkan strategi metakognitif pada *project based learning* dan *discovery learning* berbeda secara signifikan pada  $\alpha=0,025$ . *N-Gain* penguasaan konsep pada *project based learning* lebih tinggi daripada *discovery learning*, meskipun *N-Gain* penguasaan konsep tergolong sedang (Kelas I=0,659; Kelas II=0,546). Selisih *N-Gain* penguasaan konsep paling sedikit terdapat pada subkonsep penyebab terjadinya pemanasan global dan paling banyak pada subkonsep dampak terjadinya pemanasan global bagi ekosistem. Uji statistik menunjukkan penguasaan konsep pada *project based learning* dan *discovery learning* berbeda secara signifikan pada  $\alpha=0,025$ . Siswa memberikan tanggapan yang positif terhadap pelaksanaan *project based learning* dan *discovery learning*.

# COMPARISON BETWEEN PROJECT BASED LEARNING AND DISCOVERY LEARNING TO INCREASE STUDENTS' METACOGNITIVE STRATEGIES AND CONCEPT MASTERING ON GLOBAL WARMING

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## ABSTRACT

This research aimed to compare the effectiveness of project based learning with discovery learning to increase students' metacognitive strategies and concept mastering on global warming on students from one junior high school in Bandung. This research used Pretest Posttest Control Group Design. This design was conducted in two experimental classes, one class had been applied project-based learning model (Class I, n=26) and the other one applied discovery learning model (Class II, n=28). Data collected through questionnaires metacognitive strategies, test concept mastering using essay questions, the questionnaire students' responses and the learning completion observation sheet. The results of data analysis showed that N-Gain metacognitive strategies in discovery learning was higher than in project based learning, although N-Gain metacognitive strategies is categorized low (Class I=0,086; Class II=0,194). The N-Gain difference value at metacognitive strategies is lowest at the coverage aspect of self-testing skill and regulatory process of one's learning while it is highest at the coverage aspect of budgeting time and strategy. The statistical test showed students' metacognitive strategies in project based learning and discovery learning significantly different at  $\alpha=0.025$ . N-Gain concept mastering in project based learning was higher than in discovery learning, although N-Gain concept mastering is categorized medium (Class I=0,659; Class II=0,546). The N-Gain difference value at concept mastering is lowest to the sub-concepts of the causes of global warming, and mostly to the sub-concepts of the impact of global warming on the ecosystem. The statistical test showed students' concept mastering in project based learning and discovery learning significantly different at  $\alpha=0.025$ . The students responded positively to the implementation of project based learning and discovery learning.