

ABSTRAK

ADE WIDYA PRATIWI: Pengaruh Model Pembelajaran *Discovery Learning* Berbasis *Deep Learning* Terhadap Pemahaman Konsep Fisika Peserta Didik. Program Studi Pendidikan Fisika, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Malikussaleh, 2026.

Penelitian ini bertujuan untuk mengetahui pengaruh model pembelajaran *Discovery Learning* berbasis *Deep Learning* terhadap pemahaman konsep fisika peserta didik pada materi energi terbarukan. Penelitian ini merupakan penelitian kuantitatif dengan jenis *quasi experiment* menggunakan desain *Nonequivalent Control Group Design*. Penelitian dilaksanakan di SMA Negeri 7 Lhokseumawe pada peserta didik kelas X semester genap Tahun Ajaran 2025/2026. Teknik pengambilan sampel menggunakan *Cluster Random Sampling*, sehingga diperoleh kelas X-3 sebagai kelas eksperimen dan kelas X-4 sebagai kelas kontrol, yang masing-masing terdiri atas 23 peserta didik. Kelas eksperimen memperoleh pembelajaran menggunakan model *Discovery Learning* berbasis *Deep Learning*, sedangkan kelas kontrol menggunakan model *Direct Instruction*. Teknik pengumpulan data menggunakan tes berupa *pretest* dan *posttest* dalam bentuk 20 soal pilihan ganda yang telah memenuhi uji validitas, reliabilitas, indeks kesukaran, dan daya pembeda.

Hasil penelitian menunjukkan bahwa rata-rata nilai *pretest* kelas eksperimen sebesar 32,4, sedangkan kelas kontrol sebesar 32,2. Setelah diberikan perlakuan, rata-rata nilai *posttest* kelas eksperimen sebesar 78,5, sedangkan kelas kontrol sebesar 67,6. Berdasarkan hasil uji hipotesis menggunakan Welch's *t*-Test (*Equal Variances Not Assumed*), diperoleh nilai signifikansi (*Sig. (2-tailed)*) sebesar 0,012, yang lebih kecil dari taraf signifikansi 0,05 (*Sig. < 0,05*), sehingga H_0 ditolak dan H_a diterima. Dengan demikian, dapat disimpulkan bahwa terdapat pengaruh model pembelajaran *Discovery Learning* berbasis *Deep Learning* terhadap pemahaman konsep fisika peserta didik.

Kata Kunci: *Discovery Learning*, *Deep Learning*, Pemahaman Konsep.

ABSTRACT

ADE WIDYA PRATIWI: *The Effect of the Deep Learning-Based Discovery Learning Model on Students' Conceptual Understanding of Physics. Physics Education Study Program, Faculty of Teacher Training and Education, Universitas Malikussaleh, 2026.*

This study aimed to determine the effect of the Deep Learning-Based Discovery Learning model on students' conceptual understanding of physics in the topic of renewable energy. This research employed a quantitative approach using a quasi-experimental method with a Nonequivalent Control Group Design. The study was conducted at SMA Negeri 7 Lhokseumawe involving tenth-grade students in the second semester of the 2025/2026 academic year. The sample was selected using the Cluster Random Sampling technique, resulting in Class X-3 as the experimental class and Class X-4 as the control class, with 23 students in each class. The experimental class was taught using the Deep Learning-Based Discovery Learning model, while the control class received instruction through the Direct Instruction model. Data were collected using pretest and posttest instruments consisting of 20 multiple-choice questions that had met the requirements of validity, reliability, item difficulty, and discrimination index.

The results showed that the mean pretest score of the experimental class was 32.4, while that of the control class was 32.2. After the implementation of the learning models, the mean posttest score of the experimental class was 78.5, whereas the control class achieved a mean score of 67.6. Based on the results of the hypothesis testing using Welch's t-test (Equal Variances Not Assumed), the significance value (Sig. (2-tailed)) was 0.012, which was lower than the significance level of 0.05 ($p < 0.05$). Therefore, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_a) was accepted. It can be concluded that the Deep Learning-Based Discovery Learning model had a significant effect on students' conceptual understanding of physics.

Keywords: *Discovery Learning, Deep Learning, Conceptual Understanding*