

ABSTRAK

ZAHRATUN ZULVA : Pengaruh Model Project Based Learning Berbantuan Assemblr Edu Terhadap Kemampuan Berpikir Sistem Siswa. Program Studi Pendidikan Fisika FKIP Universitas Malikussaleh, 2025.

Belum optimalnya pencapaian kemampuan berpikir sistem siswa mendorong dilakukannya penelitian ini dengan maksud untuk mengetahui pengaruh model *project based learning* berbantuan media *assemblr* terhadap kemampuan berpikir sistem siswa pada topik energi terbarukan di SMAN 7 Lhokseumawe.

Penelitian ini merupakan penelitian kuantitatif yang menggunakan metode quasi eksperimen dengan desain penelitian *nonequivalent control group design*. Teknik pengambilan sampel yang digunakan adalah *purposive sampling* berjumlah 50 siswa yaitu 25 siswa kelas X1 sebagai kelas kontrol dan 25 siswa kelas X2 sebagai kelas eksperimen. Adapun instrumen yang digunakan pada penelitian ini tes berupa soal pretest dan posttest berbentuk esai sebanyak 8 butir soal. Sementara analisis data dilakukan melalui uji prasyarat yang meliputi uji normalitas, homogenitas, dan uji hipotesis.

Dari hasil analisis, diperoleh rata-rata nilai *pretest* siswa kelas eksperimen adalah 22,6, yang kemudian meningkat menjadi 79 pada *posttest*. Sementara itu, rata-rata nilai *pretest* kelas kontrol sebesar 16,3 dan meningkat menjadi 64,3 pada *posttest*. Hasil ini menunjukkan bahwa terdapat pengaruh model PjBL terhadap kemampuan berpikir sistem siswa dibandingkan model *Discovery Learning*. Dengan demikian, dapat disimpulkan bahwa penerapan model *Project Based Learning* berpengaruh terhadap peningkatan kemampuan berpikir sistem siswa.

Kata Kunci: Model *Project Based Learning*, Media *Assemblr*, Kemampuan Berpikir Sistem, Energi Terbarukan.

ABSTRACT

ZAHRATUN ZULVA: The Effect of the Project-Based Learning Model Assisted by Assemblr Edu on Students' Systems Thinking Skills. **Physics Education Study Program, Faculty of Teacher Training and Education, Malikussaleh University, 2025.**

Because students' systems thinking skills have not been optimally achieved, this study was conducted with the aim of determining the effect of the project-based learning model assisted by Assemblr Edu on students' systems thinking skills in renewable energy topics at SMAN 7 Lhokseumawe.

This research is a quantitative study using a quasi-experimental research type and a nonequivalent control group design. The sampling technique chosen was purposive sampling, with 50 students: 25 students from class X1 as the control class and 25 students from class X2 as the experimental class. The instruments used in this study were pretests and posttests in the form of eight essay questions. Meanwhile, data analysis used prerequisite tests including normality, homogeneity, and hypothesis testing.

The analysis results showed that the average pretest score for students in the experimental class was 22.6, increasing to 79 in the posttest. Meanwhile, the average pretest score for the control class was 16.3, increasing to 64.3 in the posttest. These results indicate that the PjBL model is more effective in improving students' systems thinking skills than the Discovery Learning model. Therefore, it can be concluded that the implementation of the Project-Based Learning model has an impact on improving students' systems thinking skills.

Keywords: Project-Based Learning Model, Assemblr Media, Systems Thinking Skills, Renewable Energy.