

ABSTRAK

FRISKA BR BANGUN : Penerapan Model *Problem Based Learning* Berbantuan *Virtual Lab Phet* Pada Pembelajaran Fisika Guna Meningkatkan Pemahaman Konsep Siswa. **Program Studi Pendidikan Fisika FKIP Universitas Malikussaleh, 2024.**

Penelitian ini bertujuan untuk mengetahui peningkatan pemahaman konsep siswa dengan menerapkan model *Problem Based Learning* berbantuan *Virtual Lab PhET* di MAS Ulumuddin Lhokseumawe,

Penelitian ini menggunakan metode *Quasi Eksperimen* dengan desain *non equivalent control group*. Teknik pengambilan sampelnya adalah *purposive sampling* terdiri dari 50 siswa, di mana 25 siswa dari kelas XI-D sebagai kelas eksperimen dan 25 siswa dari kelas XI-C sebagai kelas kontrol di MAS Ulumuddin Lhokseumawe. Instrumen pengumpulan data terdiri dari tes soal pilihan ganda dan non-tes berupa angket. Untuk analisis data, dilakukan uji prasyarat seperti uji normalitas dan homogenitas, serta uji hipotesis dan N-Gain.

Hasil penelitian menunjukkan bahwa nilai rata-rata *Posttest* eksperimen 80,52 dan nilai rata-rata *Posttest* kelas kontrol yaitu 67,52. Berdasarkan hasil uji hipotesis dengan menggunakan uji parametrik yaitu *independent t-Test*, diperoleh hasil sig (2-tailed) sebesar 0,001 lebih kecil dari signifikan 0,05 artinya H_0 ditolak dan H_a diterima atau terdapat pengaruh model *Problem Based Learning* berbantuan *Virtual Lab PhET* terhadap peningkatan pemahaman konsep. Sedangkan hasil rata-rata N-Gain score untuk kelas eksperimen yaitu 0,7, termasuk kategori tinggi. Sehingga dapat disimpulkan bahwa terjadi peningkatan pemahaman konsep pada kelas eksperimen yang menerapkan model *Problem Based Learning* berbantuan *Virtual lab PhET*.

Kata Kunci: *Model Problem Based Learning, Virtual Lab PhET, Pemahaman Konsep*

ABSTRACT

FRISKA BR BANGUN: *Application of the Problem Based Learning Model Assisted by Virtual Lab Phet in Physics Learning to Improve Students' Understanding of Concepts. Malikussaleh University FKIP Physics Education Study Program, 2024.*

This research aims to determine the increase in students' understanding of concepts by applying the Problem Based Learning model assisted by the PhET Virtual Lab at MAS Ulumuddin Lhokseumawe,

This research uses a Quasi Experimental method with a non-equivalent control group design. The sampling technique was purposive sampling consisting of 50 students, of which 25 students from class XI-D as the experimental class and 25 students from class XI-C as the control class at MAS Ulumuddin Lhokseumawe. The data collection instrument consists of multiplechoice questions and non-tests in the form of questionnaires. For data analysis, prerequisite tests were carried out such as normality and homogeneity tests, as well as hypothesis and N-Gain tests.

The research results showed that the average posttest score for the experiment was 80.52 and the average posttest score for the control class was 67.52. Based on the results of hypothesis testing using a parametric test, namely the independent t-Test, a sig (2-tailed) result of 0.001 is smaller than the significant 0.05, meaning that H_0 is rejected and H_a is accepted or there is an influence of the Problem Based Learning model assisted by Virtual Lab PhET on improvement understanding of concepts. Meanwhile, the average N-Gain score for the experimental class was 0.7, including the high category. So it can be concluded that there was an increase in understanding of concepts in the experimental class which implemented the Problem Based Learning model assisted by the PhET Virtual Lab.

Keywords: *Problem Based Learning Model, Virtual Lab PhET, Concept Understanding*