ABSTRAK

Nita Padillah, NIM 4191121001 (2023). Pengaruh Model *Problem Based Learning* Berbasis *Etnosains* Terhadap Kemampuan Pemecahan Masalah Siswa Pada Materi Gelombang Bunyi Kelas XI SMAN 1 Kisaran.

Penelitian ini bertujuan untuk mengetahui pengaruh model *problem based learning* berbasis *etnosains* terhadap kemampuan pemecahan masalah siswa pada materi gelombang bunyi kelas XI SMAN 1 Kisaran.

Jenis penelitian ini adalah *quasi experiment* dengan *desain two group pretest-postest*. Populasi penelitian ini seluruh siswa kelas XI IPA SMA Negeri 1 Kisaran yang terdiri dari 7 kelas paralel yang berjumlah 224 orang. Pengambilan sampel menggunakan teknik *cluster random sampling* yang terdiri dari dua kelas yaitu kelas XI IPA 6 sebanyak 30 orang sebagai kelas eksperimen dan XI IPA 5 sebanyak 30 orang sebagai kelas kontrol. Instrumen yang digunakan berupa tes kemampuan pemecahan masalah dalam bentuk uraian sebanyak 5 soal yang telah divalidasikan dan lembar observasi untuk mengamati aktivitas siswa.

Hasil penelitian diperoleh nilai rata-rata *pretest* kelas kontrol dan kelas eksperimen adalah 36,27 dan 39,87. Pada pengujian normalitas dan homogenitas data *pretest* kedua kelas berdistribusi normal dan homogen pada α = 0,05. Hasil uji hipotesis pretest menggunakan uji t dua pihak data *pretest* diperoleh $t_{hitung} < t_{Tabel}$ dengan nilai (1,28<2,002) maka H_0 diterima, artinya kedua kelas memiliki kemampuan awal yang sama. Setelah pembelajaran selesai diberikan, diperoleh *postest* dengan nilai rata-rata pada kelas eksperimen dan kontrol adalah 75,47 dan 83,6. Pada pengujian normalitas dan homogenitas data *postest* kedua kelas berdistribusi normal dan homogen. Hasil pengujian hipotesis diperoleh bahwa $t_{hitung} > t_{tabel}$ dengan nilai (1,92>1,671) maka H_a diterima dan H_0 ditolak, artinya ada perbedaan antar kelas eksperimen dan kelas kontrol. Hasil uji *effect size* diperoleh nilai 0,35 < 0,8 memiliki kriteria sedang. Artinya model *problem based learning* berbasis *etnosains* berpengaruh terhadap kemampuan pemecahan masalah siswa pada materi gelombang bunyi kelas XI SMAN 1 Kisaran. Nilai rata-rata aktivitas belajar siswa pada kelas eksperimen selama pembelajaran berlangsung sebesar 72,39 termasuk dalam kategori aktif.

Kata Kunci: PBL, Kemampuan Pemecahan Masalah, *etnosains*, Fisika

ABSTRACT

Nita Padillah, NIM 4191121001 (2023). ***The Effect of Ethnoscience-Based Problem Based Learning Model on Students' Problem Solving Ability in Sound Wave Material for Class*** **XI SMAN 1 Kisaran.**

This study aims to determine the effect of the ethnoscience-based problem-based learning model on students' problem-solving abilities in sound wave material for class XI SMAN 1 Kisaran.

This type of research is a quasi experiment with a two group pretest-posttest design. The population of this study were all students of class XI IPA at SMA Negeri 1 Kisaran which consisted of 7 parallel classes totaling 224 people. Sampling used cluster random sampling technique which consisted of two classes, namely class XI IPA 6 with 30 people as the experimental class and XI IPA 5 with 30 people as the control class. The instrument used was a problem-solving ability test in the form of a description of 5 validated questions and an observation sheet to observe student activity.

The results showed that the average pretest scores for the control class and the experimental class were 36.27 and 39.87. In testing the normality and homogeneity of the pretest data, the two classes were normally distributed and homogeneous at $\alpha = 0.05$. The results of the pretest hypothesis test using the two-sided t test pretest data obtained $t_{count} < t_{table}$ with a value of (1.28 <2.002) then H_0 is accepted, meaning that both classes have the same initial abilities. After learning was completed, a posttest was obtained with average scores in the experimental and control classes being 75.47 and 83.6. In testing the normality and homogeneity of the posttest data, the two classes are normally distributed and homogeneous. The results of testing the hypothesis obtained that $t_{count} > t_{table}$ with a value of (1.92> 1.671) then H_a is accepted and H_0 is rejected, meaning that there is a difference between the experimental class and the control class. The results of the effect size test obtained a value of 0.35 <0.8 which has moderate criteria. This means that the ethnoscience-based problem-based learning model has an effect on students' problem-solving abilities in sound wave material for class XI SMAN 1 Kisaran. The average value of student learning activities in the experimental class during the learning process was 72.39, which was included in the active category.

Keyword: PBL*, Problem Solving Ability, etnosains, physics*