ABSTRAK

Rotua Yohanna Oktavera Sitanggang, NIM 4201121023 (2024). Pengaruh Model *Problem based learning* (*PBL*) Terhadap Hasil Belajar dan Aktivitas Siswa Pada Materi Gelombang Bunyi di Kelas XI SMAS RK SANTA MARIA PAKKAT T.P 2023/2024.

Penelitian ini bertujuan untuk untuk mengetahui pengaruh model *Problem based learning* (*PBL*) terhadap hasil belajar dan aktivitas siswa pada materi gelombang bunyi di kelas XI SMAS RK SANTA MARIA PAKKAT T.P 2023/2024. Jenis penelitian ini adalah *quasi eksperiment* dengan desain two group pretes – postes. Pengambilan sampel menggunakan teknik *cluster random sampling* yang terdiri dari dua kelas yaitu kelas XI MIA 1 sebanyak 30 orang sebagai kelas kontrol dan XI MIA 2 sebanyak 30 orang sebagai kelas eksperimen. Instrumen yang digunakan berupa tes hasil belajar dalam bentuk pilihan berganda sebanyak 20 soal yang telah divalidasikan oleh para ahli dan lembar observasi untuk mengamati aktivitas siswa. Dari hasil penelitian diperoleh nilai rata – rata pretes kelas kontrol dan kelas eksperimen adalah 61,67 dan 63,17. Pada pengujian normalitas dan homogenitas data pretes kedua kelas berdistribusi normal dan homogen. Hasil uji t dua pihak data pretes diperoleh $t_{hitung} < t_{tabel}$ $(0{,}90 < 2{,}002)$ maka H_0 diterima, artinya kedua kelas memiliki kemampuan awal yang sama. Setelah pembelajaran selesai diberikan, diperoleh postes dengan nilai rata – rata hasil belajar pada kelas kontrol dan kelas eksperimen adalah 73,38 dan 82,17. Pada pengujian normalitas dan dan homogenitas data postes kedua kelas berdistribusi normal dan homogen. Hasil pengujian hipotesis diperoleh bahwa $t_{hitung} > t_{tabel}$ $(3{,}71 > 1{,}671)$ maka H_a diterima, artinya ada pengaruh model *problem based learning* terhadap hasil belajar siswa pada materi Gelombang Bunyi di kelas XI SMAS RK SANTA MARIA PAKKAT T.P. 2023/2024. Nilai rata – rata aktivitas belajar siswa pada kelas eksperimen selama pembelajaran berlangsung sekitar 71,9, termasuk dalam kategori aktif.

Kata Kunci : *Problem Based Learning*, Hasil Belajar, Aktivitas Belajar, Gelombang Bunyi.

ABSTRACT

Rotua Yohanna Oktavera Sitanggang, NIM 4201121023. The Effect of *Problem based learning* (PBL) Model on Learning Outcomes and Student Activities on Sound Wave Material in Class XI SMAS RK SANTA MARIA PAKKAT T.P 2023/2024.

This study aims to determine the effect of the Problem Based Learning (PBL) model on student learning outcomes and activities on sound wave material in class XI SMAS RK SANTA MARIA PAKKAT T.P 2023/2024. This type of research is a quasi-experimental study with a two-group pretest-posttest design. Sampling using cluster random sampling technique consisting of two classes, namely class XI MIA 1 with 30 students as the control class and XI MIA 2 with 30 students as the experimental class. The instruments used were learning outcome tests in the form of multiple choice questions of 20 questions that had been validated by experts and observation sheets to observe student activities. From the results of the study, the average pretest scores of the control class and the experimental class were 61.67 and 63.17. In the normality and homogeneity test, the pretest data for both classes were normally and homogeneously distributed. The results of the two-tailed t-test of the pretest data obtained $t_{count} < t_{table}$ $(0{,}90 < 2{,}002)$ then H_0 is accepted, meaning that both classes have the same initial ability. After the learning was completed, a post-test was obtained with an average value of learning outcomes in the control class and the experimental class of 73.38 and 82.17. In the normality and homogeneity test, the post-test data for both classes were normally and homogeneously distributed. The results of the hypothesis test obtained that $t_{count} > t_{table}$ $(3{,}71 > 1{,}671)$ then H_a is accepted, meaning that there is an influence of the problem based learning model on student learning outcomes in the Sound Wave material in class XI SMAS RK SANTA MARIA PAKKAT T.P 2023/2024. The average value of student learning activities in the experimental class during the learning process was around 71.9, included in the active category.

Keywords: Problem-Based Learning, Learning Outcomes, Learning Activities, Sound Waves.