ABSTRAK

Mutiara Flower, NIM 4192451006 (2023). Pengaruh Model *Problem Based Learning* (PBL) Terhadap Kemampuan Kognitif Siswa Pada Materi Usaha Dan Pesawat Sederhana Kelas VIII Di SMP Negeri 36 Medan T.P. 2023/2024.

Penelitian ini bertujuan untuk mengetahui pengaruh dan peningkatan kemampuan kognitif siswa menggunakan model *problem based learning* (PBL) pada materi usaha dan pesawat sederhana kelas VIII di SMP Negeri 36 Medan Tahun ajaran 2023/2024. Penelitian ini menggunakan metode *quasi eksperimen* dengan desain *pretest and posttest control group design*. Pengambilan sampel telah dilaksanakan dengan teknik *cluster random sampling*. Populasi penelitian seluruh kelas VIII SMP Negeri 36 Medan yang terdiri dari sembilan kelas. Sampel penelitian terdiri dari dua kelas yaitu kelas eksperimen VIII-3 dan kelas kontrol VIII-2. Pengumpulan data dilaksanakan dengan pemberian tes. Data dianalisis dengan uji hipotesis menggunakan *independent sample t-test*. Data rata-rata *pretest* dan *posttest* hasil belajar kognitif pada kelas eksperimen masing-masing adalah 39,8 dan 85,9 dan pada kelas kontrol 42,8 dan 72,9. Berdasarkan uji hipotesis diperoleh bahwa terdapat pengaruh model *problem based learning* terhadap hasil belajar kognitif siswa pada materi usaha dan pesawat sederhana kelas VIII di SMP Negeri 36 Medan. Pengaruh tersebut terbukti dari hasil uji hipotesis yang memperoleh nilai *sig*. (*2-tailed*) (0,00) < nilai taraf *sig*. (0,05). Data *pretest* dan *posttest* menunjukkan peningkatan hasil belajar kognitif berdasarkan n-gain. Peningkatan hasil belajar kognitif kelas eksperimen yaitu 74% dan kelas kontrol yaitu 49%. Dapat disimpulkan bahwa model *problem based learning* berpengaruh terhadap peningkatan kemampuan kognitif siswa pada materi usaha dan pesawat sederhana di kelas VIII SMP Negeri 36 Medan.

Kata Kunci: *Problem Based Learning,* Kemampuan Kognitif, Usaha dan Pesawat Sederhana.

ABSTRACT

Mutiara Flower, NIM 4192451006 (2019). The Effect of *Problem Based Learning* (PBL) Model on Students' Cognitive Abilites on Work and Simple Machines Material on Grade VIII in SMP Negeri 36 Medan T.P. 2023/2024.

This study aims to determine the effect and improvement of students' cognitive abilities using the problem-based learning (PBL) model on the material of work and simple machines in 8th grade at SMP Negeri 36 Medan in the 2023/2024 school year. This research used quasi experimental method with pretest and posttest control group design. Sampling was carried out using class random sampling technique. The research population was all VIII classes of SMP Negeri 36 Medan consisting of nine classes. The research sample consisted of two classes, namely the experimental class VIII-3 and control class VIII-2. Data collection was carried out by giving tests. Data were analyzed by hypothesis testing using independent sample t-test. The average pretest and posttest data of cognitive learning outcomes in the experimental class were 39.8 and 85.9 respectively and in the control class 42.8 and 72.9. Based on the hypothesis test, it was found that there was an effect of the problem-based learning model on students' cognitive learning outcomes on work and simple machines material in class VIII at SMP Negeri 36 Medan. The effect is evident from the results of the hypothesis test which obtained a sig. (2-tailed) (0.00) < the sig level value. (0,05). Pretest and posttest data showed an increase in cognitive learning outcomes based on n-gain. The increase in cognitive learning outcomes of the experimental class was 74% and the control class was 49%. It can be concluded that the problem-based learning model has an effect on improving students' cognitive abilities on work and simple machines material in class VIII SMP Negeri 36 Medan.

Keywords: *Problem Based Learning,* Cognitive Abilities, Work and Simple Machines.