

ABSTRAK

Sinta Stevani Br Gultom, NIM. 4193121011 (2023). Pengaruh Model *Problem Based Learning* Terhadap Kemampuan Pemecahan Masalah Siswa Pada Materi Elastisitas dan Hukum Hooke Kelas XI SMA Negeri 21 Medan

Penelitian bertujuan untuk mengetahui pengaruh model *problem based learning* terhadap kemampuan pemecahan masalah siswa pada materi elastisitas dan hukum Hooke di Kelas XI SMA Negeri 21 Medan. Jenis penelitian yang digunakan adalah eksperimen semu dengan desain *two group pretest and posttest*. Populasi dalam penelitian adalah seluruh siswa kelas XI SMA Negeri 21 Medan sebanyak 5 kelas yang berjumlah 165 orang siswa. Pengambilan sampel penelitian menggunakan teknik *cluster random sampling* yaitu XI IPA 3 sebagai kelas eksperimen dan XI IPA 4 sebagai kelas kontrol yang masing-masing kelas berjumlah 32 siswa. Instrumen yang digunakan yaitu tes uraian yang berjumlah 8 soal yang sudah divalidasi. Teknik analisis data menggunakan uji normalitas, uji homogenitas, uji t, dan uji *n-gain*. Hasil penelitian diperoleh dari nilai rata-rata pretes kelas eksperimen yaitu 30,96 dan kelas kontrol 29,19. Pengujian hipotesis dilakukan dengan menggunakan uji-t dua pihak diperoleh $t_{hitung} < t_{tabel}$ ($1,662 < 1,998$), maka data pretes dari kelas eksperimen dan kontrol memiliki kemampuan yang sama. Hasil postes yang diperoleh dari nilai rata-rata postes kelas eksperimen 72,48 dan kelas kontrol 63,67. Data hasil uji-t satu pihak diperoleh $t_{hitung} > t_{tabel}$ ($3,946 > 1,669$) yang menyatakan bahwa adanya perbedaan nilai rata-rata dari kedua kelas. Berdasarkan hasil uji t dapat disimpulkan bahwa penerapan model *problem based learning* mempunyai pengaruh yang signifikan terhadap kemampuan pemecahan masalah siswa pada materi elastisitas dan hukum Hooke di kelas XI SMA Negeri 21 Medan. Pengujian *N-gain* pada kelas eksperimen mengalami peningkatan sebesar 32% dengan kategori sedang maka dapat disimpulkan bahwa terdapat peningkatan kemampuan pemecahan masalah siswa menggunakan model *problem based learning*.

Kata kunci: kemampuan pemecahan masalah, *problem based learning*

ABSTRACT

Sinta Stevani Br Gultom, NIM. 4193121011 (2023). The Effect of The Problem Based Learning Model on Students' Problem Solving Ability in The Material Elasticity and Hooke's Law for Class XI SMA Negeri 21 Medan.

The study aims to determine the effect of problem based learning model on students' problem solving abilities in elasticity and Hooke's law in class XI IPA SMA Negeri 21 Medan. The type of study used is quasi experiment with design two group pretest and posttest. The population in the study were all grade XI students of SMA Negeri 21 Medan in 5 classes, totaling 165 students. The study sampling used cluster random sampling technique, namely class XI IPA 3 as an experimental class and XI IPA 4 as a control class, each class consisting of 32 students. The instruments used were an essay test totaling 20 questions that have been validated. Data analysis techniques used normality test, homogeneity test, t-test, and n-gain test. The study result were obtained from the average pretest score of the experimental class was 30,96 and the control class was 29,19. Hypothesis testing was carried out using the two sample t-test obtained $t_{count} < t_{table}$ ($1,662 < 1,998$), then the pretest data from the experimental and control classes have the same ability. Posttest results obtained from the average posttest score for the experimental class was 72,48 and the control class was 62,67. Data from the one sample t-test results obtained $t_{count} < t_{table}$ ($3,946 < 1,669$), which states that there was a difference in the average score of the two classes. Based on the results of the t test, it can be concluded that the application of the problem based learning model had a significant effect on students' problem solving abilities in elasticity and Hooke's law in class XI IPA SMA Negeri 21 Medan. N-gain testing in the experimental class an increased of 32% with the medium category so it can be concluded that the there was an increased in students' problem solving abilities using the problem based learning model.

Keywords: problem solving ability, problem based learning

