

ABSTRACT

Chrisman Ananta Saputra Purba, NIM 4191121017 (2023). Pengaruh Model *Project Based Learning* Berbasis STEM Terhadap Kemampuan Pemecahan Masalah Siswa Pada Materi Fluida Dinamis.

Penelitian ini bertujuan untuk mengetahui kemampuan pemecahan masalah siswa dengan menerapkan model pembelajaran *project based learning* berbasis STEM dan model pembelajaran konvensional, demikian juga pengaruh model pembelajaran *project based learning* berbasis STEM terhadap kemampuan pemecahan masalah siswa. Jenis penelitian yang digunakan adalah *quasi eksperiment* dengan desain penelitian *two group pretests-posttest design*. Populasi yang digunakan yaitu siswa kelas XI MIA SMA Swasta RK Deli Murni Bandar Baru yang berjumlah 2 kelas. Sampel penelitian terdiri dari dua kelas, kelas yang diambil yaitu XI MIA A sebagai kelas eksperimen dan XI MIA B sebagai kelas kontrol. Instrumen yang digunakan yaitu tes kemampuan pemecahan masalah berbentuk essay sebanyak 10 butir soal yang telah dinyatakan valid oleh validator. Berdasarkan hasil penelitian diperoleh nilai rata-rata *pretest* kelas eksperimen 16,08 dan hasil *pretest* kelas kontrol 14,51. Hasil pengujian hipotesis diperoleh $Z_{hitung} < Z_{tabel}$ yaitu $1,08 < 1,96$ pada taraf signifikan $\alpha = 0,05$ dan $dk = 60$, dinyatakan H_0 diterima atau kedua kelas memiliki kemampuan awal yang sama. Setelah menerapkan model pembelajaran *project based learning* berbasis STEM, nilai rata-rata *posttest* kelas eksperimen sebesar 75,03 dan kelas kontrol sebesar 67,03. Hasil pengujian hipotesis $Z_{hitung} > Z_{tabel}$ yaitu $3,44 > 1,96$ pada taraf signifikansi $\alpha = 0,05$ dan $dk = 60$, dinyatakan bahwa H_a diterima berarti terdapat pengaruh yang signifikan model pembelajaran *project based learning* berbasis STEM terhadap kemampuan pemecahan masalah siswa.

Kata Kunci : *Project Based Learning*, STEM, Pembelajaran Konvensional, Kemampuan Pemecahan Masalah.

ABSTRACT

Chrisman Ananta Saputra Purba, NIM 4191121017 (2023). The Influence of STEM-Based Project Based Learning Models on Students' Problem Solving Ability in Dynamic Fluid Material.

This study aims to determine students' problem-solving abilities by applying STEM-based project-based learning models and conventional learning models, as well as the effect of STEM-based project-based learning models on students' problem-solving abilities. The type of research used is a quasi-experimental research design with a two-group test-posttest design. The population used was students of class XI MIA RK Deli Murni Bandar Baru Private High School, totaling 2 classes. The research sample consisted of two classes, the class taken was XI MIA A as the experimental class and XI MIA B as the control class. The instrument used is a problem-solving ability test in the form of an essay consisting of 10 questions that have been declared valid by the validator. Based on the results of the study, the average pretest score for the experimental class was 16.08 and the pretest for the control class was 14.51. The results of testing the hypothesis obtained $Z_{count} < Z_{table}$, namely $1.08 < 1.96$ at a significant level $\alpha = 0.05$ and $dk = 60$, otherwise H_0 is accepted or both classes have the same initial abilities. After applying the STEM-based project-based learning learning model, the average posttest score of the experimental class was 75.03 and that of the control class was 67.03. The results of testing the hypothesis $Z_{count} > Z_{table}$, namely $3.44 > 1.96$ at a significance level of $\alpha = 0.05$ and $dk = 60$, it is stated that H_a is accepted, meaning that there is a significant influence of the STEM-based project-based learning model on students' problem-solving abilities.

Keywords: Project Based Learning, STEM, Conventional Learning, Problem Solving Ability.

