

ABSTRAK

Nurul Aprilia, NIM 4191121014 (2023), Pengaruh Model *Project Based Learning* Berbasis STEM Terhadap Kemampuan Berpikir Kreatif dan Pemecahan Masalah Siswa.

Penelitian ini bertujuan mengetahui pengaruh model *project based learning* berbasis *science, technology, engineering, mathematics* (PjBL-STEM) terhadap kemampuan berpikir kreatif dan pemecahan masalah siswa serta hubungan kemampuan berpikir kreatif dengan pemecahan masalah siswa pada materi fluida statis. Jenis penelitian ini *quasi eksperimen* dengan desain penelitian *control group pretest-posttest*. Populasi penelitian seluruh siswa kelas XI MAN 3 Langkat berjumlah delapan kelas. Pengambilan sampel secara *simple random sampling*, menggunakan tiga kelas, jumlah masing-masing 30 siswa. Kelas XI IPA 2 sebagai kelas eksperimen I menggunakan PjBL-STEM, kelas XI IPA 3 sebagai kelas eksperimen II menggunakan PjBL dan kelas XI IPA 1 sebagai kelas kontrol menggunakan pembelajaran konvensional. Instrumen penelitian berupa tes kemampuan berpikir kreatif berjumlah delapan butir dan tes pemecahan masalah berjumlah lima butir berbentuk uraian. Analisis data menggunakan uji anova satu jalur berbantuan SPSS. Nilai rata-rata *pretest* kemampuan berpikir kreatif kelas eksperimen I (36,95), eksperimen II (38,13) dan kontrol (34,47). Nilai rata-rata *posttest* kemampuan berpikir kreatif kelas eksperimen I (85,80), eksperimen II (81,72) dan kontrol (74,20). Nilai rata-rata *pretest* kemampuan pemecahan masalah siswa kelas eksperimen I (30,67), eksperimen II (30,13) dan kontrol (30,00). Nilai rata-rata *posttest* kelas eksperimen I (79,88), eksperimen II (74,32) dan kontrol (65,64). Berdasarkan hasil analisis data terdapat pengaruh model PjBL-STEM terhadap kemampuan berpikir kreatif dan pemecahan masalah siswa pada materi fluida statis. Terdapat hubungan positif antara kemampuan berpikir kreatif dengan pemecahan masalah siswa (0,444) dengan kategori sedang. Peningkatan N-gain kemampuan berpikir kreatif dan pemecahan masalah pada kelas eksperimen I, eksperimen II dan kontrol berada pada kategori sedang.

Kata Kunci: PjBL-STEM, kemampuan berpikir kreatif, kemampuan pemecahan masalah.



ABSTRACT

Nurul Aprilia, NIM 4191121014 (2023), The Influence of the STEM- Project Based Learning Model on Students' Creative Thinking and Problem Solving Abilities.

This research aims to determine the effect of the project based learning model based on science, technology, engineering, mathematics (PjBL-STEM) on students' creative thinking and problem solving abilities as well as the relationship between creative thinking abilities and students' problem solving in static fluid material. This type of research is quasi-experimental with a pretest-posttest control group research design. The research population was all students in class XI MAN 3 Langkat totaling eight classes. Sampling was done using simple random sampling, using three classes, each with 30 students. Class XI IPA 2 as experimental class I uses PjBL-STEM, class XI IPA 3 as experimental class II uses PjBL and class XI IPA 1 as control class uses conventional learning. The research instrument was an eight-item creative thinking ability test and a five-item problem solving test in the form of descriptions. Data analysis used a one-way ANOVA test assisted by SPSS. The average pretest score for creative thinking ability for experimental class I (36.95), experimental II (38.13) and control (34.47). The average posttest score for creative thinking ability for experimental class I (85.80), experimental II (81.72) and control (74.20). The average pretest score for problem solving ability of students in experimental class I (30.67), experimental II (30.13) and control (30.00). The average posttest score for experimental class I (79.88), experimental II (74.32) and control (65.64). Based on the results of data analysis, there is an influence of the PjBL-STEM model on students' creative thinking and problem solving abilities in static fluid material. There is a positive relationship between creative thinking abilities and students' problem solving (0.444) in the medium category. The increase in N-gain in creative thinking and problem solving abilities in experimental I, experimental II and control classes was in the medium category.

Keywords: PjBL-STEM, creative thinking ability, problem solving ability.

