

PENERAPAN MODEL *REAL ENGAGEMENT IN ACTIVE PROBLEM SOLVING (REAPS)* UNTUK MENINGKATKAN KEMAMPUAN *PROBLEM SOLVING* DAN KOGNITIF SISWA MENENGAH ATAS

(Arvina Yulindar, 1502614)

Abstrak

Kemampuan *problem solving* merupakan kemampuan penting yang perlu dimiliki dalam pembelajaran fisika. Namun, kemampuan *problem solving* belum optimal dimiliki bahkan belum maksimal diterapkan dalam kegiatan pembelajaran. Penelitian ini bertujuan untuk mengetahui peningkatan kemampuan kognitif dan *problem solving* siswa sebagai akibat penerapan pembelajaran *Real Engagement in Active Problem Solving (REAPS)* pada materi perpindahan kalor. Metode penelitian yang digunakan adalah *quasi eksperimen* dengan desain *one group pretest-posttest*. Sampel penelitian terdiri atas 35 siswa kelas X di salah satu SMA di Kota Pontianak. Instrumen yang digunakan dalam penelitian ini adalah tes kemampuan kognitif, tes kemampuan *problem solving*, tes berpikir kreatif dan rubrik kolaborasi siswa. Analisis data kemampuan *problem solving* dan kognitif siswa diperoleh melalui nilai rata-rata gain yang dinormalisasikan, sedangkan keterampilan berpikir kreatif siswa diukur menggunakan tes kreativitas TCT-DP dan dinilai menggunakan rubrik penilaian yang dikembangkan oleh Urban. Keterampilan kolaborasi diobservasi dengan menggunakan rubrik *Buck Institute for Education (2013)*. Temuan penelitian menunjukkan kemampuan kognitif mengalami peningkatan dengan nilai rerata gain yang ternormalisasi $\langle g \rangle$ sebesar 0.43 dengan kategori sedang. Begitu juga kemampuan *problem solving* mengalami peningkatan dengan nilai rerata gain yang ternormalisasi $\langle g \rangle$ sebesar 0.40 dengan kategori sedang. Keterampilan berpikir kreatif dan kolaborasi merupakan keterampilan yang mendukung peningkatan kemampuan *problem solving* memberikan efek positif dalam peningkatan kemampuan tersebut.

Kata kunci : *REAPS*, kemampuan kognitif, kemampuan *problem solving*, berpikir kreatif, kolaborasi, perpindahan kalor

IMPLEMENTATION OF REAL ENGAGEMENT IN ACTIVE PROBLEM SOLVING (REAPS) TO IMPROVE PROBLEM SOLVING AND COGNITIVE ABILITY SENIOR HIGH SCHOOL STUDENTS

(Arvina Yulindar, 1502614)

Abstract

The ability of problem solving was an important ability that need to be possessed in physics learning. However, the ability of problem solving have not been optimally owned even not maximal applied in learning activities. This study aimed to determine the improvement of cognitive abilities and problem solving of students as a result of the application in Real Engagement Active Problem Solving (REAPS) learning on heat transfer material. The research method used was quasi experiment with one group pretest-posttest design. The sample of the study consisted of 35 students in class X high school student in the Pontianak City. The instruments which used in this research were cognitive ability test, problem solving skill test, creative thinking test and student collaboration rubric. Data analysis of students' problem solving and cognitive abilities was obtained through normalized average from gain, meanwhile students' creative thinking skill was measured using by TCT-DP creativity test and assessed using assessment rubric developed by Urban. Collaborative skills were observed using by the Buck Institute for Education (2013). The findings of the study showed an increased cognitive ability with a normalized mean value of $\langle g \rangle$ of 0.43 in the medium category. The problem solving ability have increased with a normalized average gain value $\langle g \rangle$ of 0.40 with the medium category. The creative thinking skills and collaboration skills were supporting to increased on problem solving ability and had given a positive effect on the improvement of that ability.

Keywords: REAPS, cognitive ability, problem solving ability, creative thinking, collaboration, heat transfer