

**PENGARUH MODEL *PROJECT BASED LEARNING* BERORIENTASI
STEM TERHADAP KEMAMPUAN BERPIKIR TINGKAT TINGGI SISWA
DI SMA**

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ABSTRAK

Kajian ini tujuannya menjelaskan perbedaan kemampuan berpikir tingkat tinggi pada aktivitas belajar fisika antara peserta didik yang mempergunakan model pembelajaran *Project Based Learning (PjBL)* Berorientasi *STEM* dan model pembelajaran Konvensional. Jenis kajian ini ialah studi eksperimen semu *one way pre-test-post-test non-equivalent control group design*. Populasi dalam kajian ini yakni peserta didik kelas XI MIPA SMA Negeri 3 Singaraja dalam 3 kelas sebanyak 94 siswa. Sampel ditentukan dengan *simple random sampling* sebanyak 2 kelas dengan total 60 siswa. Data yang dihimpun pada kajian ini ialah data kemampuan berpikir tingkat tinggi dalam bentuk *essay*. Analisis data mempergunakan deskriptif dan *one-way ANAKOVA*. Hasil kajian memperoleh temuan kemampuan berpikir tingkat tinggi awal peserta didik kelas eksperimen serta kontrol lebih kecil sebelum perlakuan, kemudian rerata kemampuan berpikir tingkat tinggi setelah perlakuan pada kelas eksperimen lebih unggul dibanding kelas kontrol. Hasil pengujian hipotesis mengindikasikan ada perbedaan kemampuan berpikir tingkat tinggi pada aktivitas belajar fisika antara yang mempergunakan *PjBL* Berorientasi *STEM* dibanding pemodelan konvensional ($F^* = 36,471$; $p < 0,05$) dan ($\Delta_{\mu} = \mu(I) - \mu(J) = 5,956$ dan $LSD = 3,937$).

Kata kunci : model *Project Based Learning*, model Konvensional, *STEM*, kemampuan berpikir tingkat tinggi

**THE EFFECT OF STEM-ORIENTED PROJECT-BASED LEARNING
MODEL ON STUDENTS' HIGHER ORDER THINKING SKILLS IN
SENIOR HIGH SCHOOL**

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ABSTRACT

This study aims to explain the differences in higher order thinking skills in physics learning activities between students who use the STEM-oriented Project Based Learning (PjBL) learning model and the Conventional learning model. This type of study is a pseudo-experimental study one way pre-test-post-test non-equivalent control group design. The population in this study was students in grade XI MIPA SMA Negeri 3 Singaraja in 3 classes totaling 94 students. The sample was determined by simple random sampling as many as 2 classes with a total of 60 students. The data collected in this study were data on higher order thinking skills in the form of essays. Data analysis used descriptive and one-way ANOVA. The results of the study found that the initial higher-level thinking ability of experimental and control class students was smaller before treatment, then the average higher-level thinking ability after treatment in the experimental class was superior to the control class. The results of hypothesis testing indicate that there is a difference in higher order thinking skills in physics learning activities between those using STEM Oriented PjBL compared to conventional modeling ($F^ = 36.471$; $p < 0.05$) and ($\Delta_{\mu} = \mu(I) - \mu(J) = 5.956$ and $LSD = 3.937$).*

Keywords: *Project Based Learning model, Conventional model, STEM, higher order thinking skills*