

**PENGARUH MODEL PEMBELAJARAN *PROJECT BASED LEARNING*
(PJBL) BERBANTUAN *CROCODILE PHYSICS* TERHADAP
KETERAMPILAN BERPIKIR KREATIF SISWA KELAS X MIPA SMA
NEGERI 7 DENPASAR**

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ABSTRAK

Masalah yang dibahas dalam penelitian ini ialah salah satu keterampilan yang harus dimiliki dalam revolusi industri 4.0 yaitu keterampilan berpikir kreatif. Penelitian ini bertujuan untuk mengetahui dan menganalisis perbedaan antara siswa yang belajar menggunakan model *Project Based Learning* berbantuan aplikasi *Crocodile Physics* dan siswa yang belajar menggunakan model *Direct Instruction*. Penelitian ini adalah eksperimen semu yang menggunakan *pretest-posttest non-equivalent control group design*. Populasi penelitian ini sebanyak 382 siswa kelas X MIPA SMA Negeri 7 Denpasar Tahun ajaran 2021/2022. Sampel penelitian yang digunakan adalah 2 kelas (96 siswa) yang dipilih menggunakan *random selection technique* berbasis kelompok dari kelas-kelas yang sudah ada, sehingga terpilih kelas X MIPA 1 sebagai kelas eksperimen dan kelas X MIPA 2 sebagai kelas kontrol. Tes keterampilan berpikir kreatif yang terdiri dari 14 soal esai digunakan untuk mengumpulkan data keterampilan berpikir kreatif. Analisis data yang digunakan adalah analisis deskriptif dan analisis kovarian (ANAKOVA) satu jalur. Pengujian hipotesis dilakukan pada taraf signifikansi 5%. Hasil penelitian menunjukkan terdapat perbedaan keterampilan berpikir kreatif secara signifikan antara siswa yang belajar dengan model pembelajaran *Project Based Learning* berbantuan aplikasi *Crocodile Physics* dengan model pembelajaran *Direct Instruction* ($F^* = 28,884$; $p < 0,05$). Diperoleh keterampilan berpikir kreatif siswa yang belajar menggunakan model *Project Based Learning* berbantuan aplikasi *Crocodile Physics* ($M = 87,6$; $SD = 4,84$, kategori sangat baik) secara signifikan lebih tinggi dibandingkan dengan siswa yang belajar menggunakan model *Direct Instruction* ($M = 81,7$; $SD = 5,97$, kategori baik). Oleh karena itu, implikasi untuk mencapai berpikir kreatif siswa dalam proses pembelajaran fisika di SMA, sebaiknya difasilitasi dengan menerapkan model *Project Based Learning* berbantuan aplikasi *Crocodile Physics*.

Kata kunci: *project based learning*, *direct instruction*, *crocodile physics*, keterampilan berpikir kreatif, pembelajaran fisika.

**THE EFFECT OF PROJECT BASED LEARNING (PJBL) ASSISTED
CROCODILE PHYSICS LEARNING MODEL ON CREATIVE
THINKING SKILLS OF STUDENTS OF CLASS X MIPA SMA NEGERI 7
DENPASAR**

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ABSTRACT

The problem discussed in this study is one of the skills that must be possessed in the 4.0 industrial revolution, namely creative thinking skills. This study aims to identify and analyze the differences between students who learn to use the Project Based Learning model assisted by the Crocodile Physics application and students who learn to use the Direct Instruction model. This study was a quasi-experimental using a pretest-posttest non-equivalent control group design. The population of this study was 382 students of class X MIPA SMA Negeri 7 Denpasar in the 2021/2022 academic year. The research sample used was 2 classes (96 students) which were selected using a group-based random selection technique from existing classes, so that class X MIPA 1 was chosen as the experimental class and class X MIPA 2 as the control class. Creative thinking skills test consisting of 14 essay questions was used to collect data on creative thinking skills. The data analysis used was descriptive analysis and one-way analysis of covariance (ANACOVA). Hypothesis testing was carried out at a significance level of 5%. The results showed that there were significant differences in creative thinking skills between students who studied with the Project Based Learning learning model assisted by the Crocodile Physics application and the Direct Instruction learning model ($F^ = 28.884$; $p < 0.05$). The creative thinking skills of students who learn to use the Project Based Learning model assisted by the application of Crocodile Physics ($M = 87.6$; $SD = 4.84$, very good category) are significantly higher than students who learn to use the Direct Instruction model ($M = 81,7$; $SD = 5,97$, good category). Therefore, the implications for achieving students' creative thinking in the physics learning process in high school should be facilitated by applying the Project Based Learning model assisted by the Crocodile Physics application.*

Keywords: project based learning, direct instruction, crocodile physics, creative thinking skills, physics learning.