

ABSTRAK

**PENGARUH PENERAPAN *PROBLEM BASED LEARNING*
BERBASIS *AI PROMPTING* TERHADAP PEMAHAMAN SISWA
PADA MATERI GELOMBANG MEKANIK**

Angelo Pramoeoya Gaharu
NIM: 221424010

Penelitian ini bertujuan untuk mengetahui pengaruh penerapan model pembelajaran *Problem Based Learning* (PBL) berbasis *AI prompting* untuk meningkatkan pemahaman siswa pada materi gelombang mekanik serta untuk mengetahui tingkatan kompetensi metavisual siswa yang mengalami model pembelajaran berbasis *Problem Based Learning* (PBL) berbasis *AI prompting*. Penelitian ini merupakan jenis penelitian campuran (*mixed methods*) yang dilaksanakan berdasarkan *Sequential Explanatory Design* yang melibatkan masing-masing sebanyak 35 siswa pada kelas eksperimen dan kelas kontrol di SMA N 1 Sleman. Peningkatan pemahaman diukur menggunakan *N-Gain* ternormalisasi dan diuji dengan *Mann-Whitney U*. Hasil penelitian menunjukkan bahwa penerapan model pembelajaran *Problem Based Learning* Berbasis *AI prompting* mampu meningkatkan pemahaman siswa pada materi gelombang mekanik yang ditunjukkan adanya peningkatan nilai *N-Gain* kelas eksperimen (0,91) lebih tinggi dibandingkan kelas kontrol (0,85). Data kuantitatif dan kualitatif menunjukkan siswa berada pada tingkat 3 (reflektif) dalam kerangka kompetensi metavisual.

Kata kunci: *Problem Based Learning*, *AI prompting*, pemahaman siswa, kompetensi metavisual, gelombang mekanik

ABSTRACT

**THE EFFECT OF IMPLEMENTING AI-PROMPTING BASED
PROBLEM BASED LEARNING ON STUDENTS' UNDERSTANDING
OF MECHANICAL WAVE MATERIAL**

Angelo Pramodya Gaharu
NIM: 221424010

This study aims to determine the effect of implementing an AI-prompting-based Problem Based Learning (PBL) model to improve students' understanding of mechanical wave material, and to determine the level of metavisual competency of students who experienced the AI-prompting-based Problem Based Learning (PBL) model. This study is a mixed-methods research employing a Sequential Explanatory Design, involving 35 students each in the experimental and control classes at SMA N 1 Sleman. The improvement in understanding was measured using the normalized N-Gain and tested using the Mann-Whitney U test. The results show that the implementation of the AI-prompting-based Problem Based Learning model was able to improve students' understanding of mechanical wave material, as indicated by a higher N-Gain value in the experimental class (0.91) compared to the control class (0.85). The quantitative and qualitative data indicate that students were at level 3 (reflective) within the metavisual competency framework.

Keywords: Problem Based Learning, AI prompting, students' understanding, metavisual competency, mechanical waves