

ABSTRAK

PENERAPAN MODEL PEMBELAJARAN *PROBLEM BASED LEARNING* (PBL) DALAM PEMBELAJARAN GELOMBANG LONGITUDINAL DAN GELOMBANG STASIONER SERTA PENGARUHNYA TERHADAP PEMAHAMAN DAN KEAKTIFAN PESERTA DIDIK

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Penelitian ini bertujuan untuk (1) Mengetahui pengaruh penerapan model pembelajaran *Problem Based Learning* (PBL) terhadap pemahaman peserta didik dalam pembelajaran, dan (2) Mengetahui keaktifan peserta didik ketika pembelajaran dalam penerapan model pembelajaran *Problem Based Learning* (PBL).

Jenis penelitian yang digunakan adalah penelitian kuantitatif. Subjek dalam penelitian ini adalah peserta didik kelas XI MIPA 1 dan XI MIPA 2 SMA BOPKRI 2 Yogyakarta. Kelas diberikan *treatment* dengan menggunakan model pembelajaran *problem based learning*. *Treatment* dalam penelitian ini berupa pemberian suatu permasalahan dalam bentuk LKPD. Instrumen yang digunakan untuk mengumpulkan data dalam penelitian ini adalah soal tes yang berupa *pretest* dan *posttest*, LKPD, serta observasi. Pemahaman diukur dari proses belajar melalui LKPD dan hasil belajar yang berupa hasil *pretest* dan *posttest* yang kemudian dianalisis secara statistik menggunakan program SPSS uji T-Dependen, keaktifan peserta didik di dalam kelas dianalisis melalui lembar observasi selama proses pembelajaran.

Hasil penelitian menunjukkan bahwa (1) Pembelajaran dengan menerapkan model *problem based learning* dapat meningkatkan pemahaman peserta didik dalam pembelajaran melalui hasil belajar *pretest* dan *posttest*. Hasil analisis menunjukkan bahwa nilai rata-rata *pretest* yang diperoleh sebesar 24,64 dan nilai rata-rata *posttest* yang diperoleh sebesar 87,71; terlihat jelas bahwa hasil belajar peserta didik mengalami peningkatan yang sangat signifikan. Dengan demikian pembelajaran dengan model pembelajaran *Problem Based Learning* (PBL) dapat meningkatkan pemahaman peserta didik pada materi Gelombang Stasioner dan Gelombang Longitudinal. (2) Peserta didik aktif selama mengikuti pembelajaran gelombang longitudinal dan gelombang stasioner dalam model pembelajaran *problem based learning* (PBL). Keaktifan peserta didik dikategorikan “aktif” selama proses.

Kata kunci: pemahaman, keaktifan, *problem based learning*

ABSTRACT

APPLICATION OF PROBLEM BASED LEARNING (PBL) LEARNING MODEL IN LONGITUDINAL WAVE AND STATIONARY WAVE LEARNING AND THEIR INFLUENCE ON STUDENTS' UNDERSTANDING AND ACTIVENESS

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This study aims to (1) measure the effect of implementing the Problem Based Learning (PBL) on students' understanding in learning, and (2) Measure the activeness of students when learning in the application of Problem Based Learning (PBL) learning models.

The research is a quantitative research. The subjects in this study were students of class XI MIPA 1 and XI MIPA 2 SMA BOPKRI 2 Yogyakarta. The class is given treatment using a problem based learning. Treatment in this study is in the form of giving a problem in the form of a LKPD. The instruments used to collect data in this study were test questions in the form of pretest and posttest, LKPD, and observation. Understanding is measured from the learning process through LKPD and learning outcomes in the form of pretest and posttest which are then analyzed statistically using the SPSS T-Dependent test program, the activeness of students in the classroom is analyzed through observation sheets during the learning process.

The results of the study show that (1) Learning by applying the problem based learning can improve students' understanding in learning through pretest and posttest learning outcomes. The results of the analysis show that the average value of the pretest obtained is 24.64 and the average value of the posttest obtained is 87.71; it is clear that the learning outcomes of students have increased very significantly. Thus learning with the Problem Based Learning (PBL) learning model can improve students' understanding of the material of Stationary Waves and Longitudinal Waves. (2) Students are active during the study of longitudinal waves and stationary waves in the problem based learning (PBL) learning model. The activeness of students is categorized as "active" during the process.

Keywords: understanding, activeness, problem based learning