

THE EFFECT OF PREDICT-OBSERVE-EXPLAIN (POE) STRATEGY ON STUDENTS' CONCEPTUAL MASTERY AND CRITICAL THINKING IN LEARNING VIBRATION AND WAVE

ABSTRACT

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Scientific learning in schools requires not only students' ability to understand concept, but also critical thinking abilities of the students. However, the current scientific learning process is still focused on only cognitive aspects. Therefore, a teaching model or strategy that is able to support students to understand concept as well as develop students' critical thinking abilities is needed. One of the existing needed strategies is Predict-Observe-Explain (POE). The aim of this research is to identify the effects of Predict-Observe-Explain (POE) strategy on students' conceptual mastery and critical thinking in learning vibration and wave. The method that was used in this research was weak experiment and the design was one-group pretest-posttest. The population of this research was 8th grader students in a junior high school in Bandung. The sample of the research was 18 students. The technique that was used was purposive sampling. The results of the research were: There was enhancement in students' conceptual mastery, indicated by average normalized gain of 0,29; There was enhancement in students' critical thinking abilities from level 1,30 (challenged thinker) to 2,07 (beginning thinker). Students can easily predict, observe and explain waves concept have difficulties on transversal waves and longitudinal waves concepts. For the next research it is recommended that Predict-Observe-Explain (POE) is to be tried on motion, electricity and ecosystem.

Keywords: Predict-Observe-Explain (POE), Conceptual Mastery, Critical Thinking Abilities, Vibration and Wave.

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**PENGARUH STRATEGI PREDICT-OBSERVE EXPLAIN (POE)
TERHADAP PENGUASAAN KONSEP DAN KEMAMPUAN BERPIKIR
KRITIS SISWA DALAM PEMBELAJARAN GETARAN DAN GELOMBANG**

ABSTRAK

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Pembelajaran IPA tidak hanya kemampuan memahami konsep, namun juga kemampuan berpikir kritis siswa. Akan tetapi, pembelajaran IPA di sekolah saat ini masih cenderung hanya mengukur aspek kognitif saja. Oleh karena itu, diperlukan model atau strategi pembelajaran yang mampu membantu siswa dalam memahami konsep dan juga mengembangkan kemampuan berpikir kritis siswa. Salah satu strategi pembelajaran tersebut adalah *Predict-Observe-Explain (POE)*. Tujuan dari penelitian ini adalah untuk menginvestigasi pengaruh strategi *Predict-Observe-Explain (POE)* terhadap penguasaan konsep dan kemampuan berpikir kritis siswa dalam pembelajaran getaran dan gelombang. Metode penelitian yang digunakan adalah *weak experiment*. Desain penelitian yang digunakan adalah *one-group pretest-posttest*. Populasi yang digunakan dalam penelitian ini berjumlah 18 siswa di salah satu SMP di Bandung, Indonesia. Hasil penelitian ini adalah siswa mengalami peningkatan penguasaan konsep dengan perolehan normalisasi gain sebesar 0,29. Siswa mengalami peningkatan kemampuan berpikir kritis dari level 1,30 (*challenged thinker*) menjadi 2,07 (*beginning thinker*). Siswa lebih mudah memprediksi, mengobservasi dan menjelaskan pada konsep gelombang, namun mengalami kesulitan pada konsep gelombang transversal dan gelombang longitudinal. Rekomendasi penelitian ini adalah strategi *Predict-Observe-Explain (POE)* dapat dicoba diterapkan pada topik gerak, listrik, ekosistem atau yang lain.

Kata kunci: *Predict-Observe-Explain (POE)*, Penguasaan Konsep, Kemampuan Berpikir Kritis, Getaran dan Gelombang.

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