

# PENERAPAN MODEL *LEARNING CYCLE 7E* UNTUK MENINGKATKAN KONSISTENSI ILMIAH DAN PRESTASI BELAJAR SISWA PADA MATERI SUHU DAN KALOR

Nur Arifah, I Made Padri dan Selly Feranie<sup>1</sup>

<sup>1</sup>*Jurusan Pendidikan Fisika, Universitas Pendidikan Indonesia  
Jl. Dr. Setiabudhi No. 299 Bandung 40154*

Email: [nur.arifah@student.upi.edu](mailto:nur.arifah@student.upi.edu)

## Abstrak

Telah dilakukan penerapan Learning Cycle 7E untuk meningkatkan konsistensi ilmiah dan prestasi belajar siswa. Metode penelitian yang digunakan yaitu pre-experimental design dengan desain penelitian one group pretest posttest design. Sampel pada penelitian ini yaitu siswa kelas X MIA 3 di salah satu SMA Negeri di Bandung dengan sampel sebanyak 33 siswa. Instrumen yang digunakan pada penelitian ini yaitu soal dalam bentuk Three Tier Test berbasis multirepresentasi untuk melihat peningkatan konsistensi ilmiah siswa dan soal pilihan ganda untuk melihat peningkatan prestasi belajar siswa, penelitian ini di terapkan pada materi Suhu dan Kalor. Hasil penelitian yang diperoleh setelah penerapan model, peningkatan prestasi belajar menurut kategori Hake dalam kategori sedang (0,69), dan untuk peningkatan konsistensi ilmiah masuk kedalam kategori sedang (0,59). Selain itu jika ditinjau dari jumlah siswa yang konsistensi ilmiah pada materi ini secara keseluruhan setiap sub konsep mengalami peningkatan. Peningkatan yang paling signifikan terdapat pada sub konsep pemuai volume yaitu tadinya hanya 4 siswa yang konsisten ilmiah menjadi 27 siswa, peningkatan yang paling rendah yaitu pada sub konsep suhu. Ini termasuk peningkatan yang signifikan mengingat siswa konsisten ilmiah apabila siswa mampu menjawab ketiga soal dalam bentuk representasi yang berbeda dengan kriteria paham konsep yaitu jawaban benar, alasan benar dan keyakinan dalam menjawab.

Kata Kunci : *LearningCycle 7E*, Konsistensi Ilmiah, Prestasi Belajar.

# THE APPLICATION OF LEARNING CYCLE 7E MODEL TO INCREASE STUDENT SCIENTIFIC CONSISTENCY AND STUDENT LEARNING ACHIEVEMENT IN HEAT AND TEMPERATURE SUBJECT

Nur Arifah, I Made Padridan Selly Feranie<sup>1</sup>

Email: [nur.arifah@student.upi.edu](mailto:nur.arifah@student.upi.edu)

## ABSTRACT

Learning Cycle 7E had been applied to increase student scientific consistency and student learning achievement. The research employed pre-experimental research method by using one group pretest posttest design. The research was conducted in X MIA 3 class of a senior high school in Bandung. The sample taken was involving 33 students. The instruments used for the research were Three Tier Test question with multi-presentation basis intended to measure the increase of student scientific consistency and multiple choice question made to find out the increase of student learning achievement. The research was applied in Heat and Temperature subject. Based on Hake category, the application of this model resulted in medium category (0.69) for the increase of student learning achievement and in medium category (0.59) for the increase of student scientific consistency. In addition to that, it had been proven that the student scientific consistency in the overall sub-concept was increasing. The most significant increase happened during the volume expansion sub-concept in which the number of students who had the scientific consistency went up from 4 students to 27 students. Meanwhile, the temperature sub-concept had the lowest increase. Thus, it was concluded as a significant increase by considering that a student who had scientific consistency was able to answer the three questions through different form of representation. It was also followed by how the student was able to apply the conceptual understanding criteria which were right answer, right reason and convincedness in answering.

Keywords: Learning Cycle 7E, Scientific Consistency, Learning Achievement.