

ABSTRAK

**UPAYA UNTUK MENGUBAH MISKONSEPSI SISWA
DALAM POKOK BAHASAN SUHU DAN KALOR
LEWAT KONFLIK KOGNITIF**

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Tujuan penelitian ini adalah untuk mengetahui apakah metode pembelajaran dengan konflik kognitif dapat mengubah miskonsepsi siswa pada pokok bahasan suhu dan kalor, khususnya pada konsep suhu dan kalor, konsep kalor jenis dan kapasitas kalor, konsep perubahan wujud benda, serta konsep perpindahan kalor. Penelitian ini menggunakan sampel 68 siswa kelas XI IPA di SMA 10 Yogyakarta tahun ajaran 2011/2012. Pengumpulan data siswa yang mengalami miskonsepsi melalui test konsep suhu dan kalor. Lima orang siswa yang diduga memiliki miskonsepsi kemudian dibantu memperbaiki konsep awalnya dengan metode pembelajaran konflik kognitif. Konflik kognitif yang dialami oleh siswa terjadi ketika terdapat perbedaan antara pemahaman awal siswa pada test konseptual dengan konsep ilmiah, antara lain hasil percobaan, demonstrasi, buku teks, wawancara dan sumber informasi lain. Hasil penelitian ini adalah: (1) Ada banyak miskonsepsi siswa pada konsep suhu dan kalor, konsep kalor jenis dan kapasitas kalor, konsep perubahan wujud benda, serta konsep perpindahan kalor; (2) Konflik kognitif yang dialami oleh siswa membantu mengubah konsep awal mereka menjadi lebih benar; (3) Siswa merasa senang karena mereka menjadi tahu bukan hanya secara teori. Menurut mereka, percobaan dapat membuat mereka lebih memahami konsep fisika karena mereka mengalami sendiri. Siswa merasa kaget setelah melihat hasil percobaan dan menjadi bertanya – tanya. Siswa menyadari bahwa konsep awal mereka kurang tepat secara fisika dan belajar dari kesalahan tersebut.

Kata Kunci: Miskonsepsi, Konflik Kognitif, Pokok bahasan Suhu dan Kalor

ABSTRACT

**AN EFFORT TO CHANGE STUDENT'S MISCONCEPTION OF HEAT
AND TEMPERATURE CONCEPTS
THROUGH COGNITIVE CONFLICT**

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The aim of this research was to know whether the method of learning with cognitive conflict could change student's misconception on heat and temperature concepts, especially on the heat and temperature concepts, specific heat and heat capacity concepts, changing state of matter concepts, and also heat transfer concepts. The samples of this research were 68 secondary students (grade 11th) of Senior High School 10 Yogyakarta of academic year 2011/2012. The data of students who had a misconception were obtained through a heat and temperature concept test. Five students who allegedly had a misconception were then helped to improve their pre-conception through the conflict cognitive learning method. Cognitive conflict experienced by students occurred when there was a difference between students' initial understanding of the conceptual test with the scientific concepts, such as the results of experiments, demonstrations, textbooks, interviews and other information resources. The results of this research were: (1) there were many kinds of student's misconception on the heat and temperature concepts, specific heat and heat capacity concepts, as well as changing state of matter concepts; (2) cognitive conflict experienced by students helped change their initial concepts into the more correct one; (3) students felt happy because they were more knowledgeable not just in theory but also in the practice. They said that the experiment could make them understand the concepts of physics better as they experienced it themselves. Students were shocked after seeing the results of the experiment and became curious. The students started to realize that they had less precise concept in physics and learned from those mistakes.

Keywords: misconception, cognitive conflict, heat and temperature concepts