

ABSTRAK

Rosa Delima Indriastuti. Pembentukan Konsep Siswa Tentang Hukum Ohm, Hambatan Kawat, dan Rangkaian Seri Paralel Menggunakan Eksperimen Terbimbing. Program Studi Pendidikan Fisika, Jurusan Pendidikan Matematika dan Ilmu Pengetahuan Alam, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Sanata Dharma Yogyakarta.

Tujuan dari Penelitian ini adalah untuk mengetahui: (1) Bagaimana konsep awal siswa tentang hukum Ohm, Hambatan Kawat, dan Rangkaian Seri Paralel, (2) Bagaimana perubahan konsep siswa tentang hukum Ohm, Hambatan Kawat, dan Rangkaian Seri Paralel dengan menggunakan metode eksperimen terbimbing, (3) Bagaimana konsep siswa tentang hukum Ohm, Hambatan Kawat, dan Rangkaian Seri Paralel setelah mengalami proses pembelajaran dengan menggunakan metode eksperimen terbimbing.

Penelitian dilaksanakan pada tanggal 4 Mei 2007 – 27 April 2007 di SMA Negeri 2 Bener, Tegalrejo, Yogyakarta. Subjek penelitian adalah siswa kelas X-2 yang berjumlah 33 orang. Dari ke 33 siswa dipilih 3 siswa sebagai partisipan. Pengumpulan data dalam penelitian ini dilakukan dalam empat tahap, yaitu: pretest, wawancara awal, proses pembelajaran dengan menggunakan metode eksperimen terbimbing, dan posttest.

Hasil dari penelitian menunjukkan bahwa: (1) Ditemukan adanya pemahaman konsep (konsep awal) partisipan yang belum benar mengenai hukum Ohm, Hambatan Kawat, dan Rangkaian Seri Paralel sebelum mengalami proses pembelajaran, (2) Partisipan mengalami perubahan konsep menjadi lebih benar, (3) Setelah mengalami proses pembelajaran, masih ada beberapa pemahaman partisipan mengenai hukum Ohm, Hambatan Kawat, dan Rangkaian Seri Paralel yang belum berhasil diubah.

ABSTRACT

Misconceptions are a troubling issue for teachers and students in high school science. This is especially true in physics due to its often abstract nature. For example, studying everything about gases, included Boyle's Law for gases inside. The purpose of this study was to understand the level of student understanding's about Boyle's Law for gases. The understanding developed based on students response to the amount of task relating to Boyle's Law. The research was also aimed at reveal whether there was misconceptions among students relating to Boyle's Law. Participants of this study was students of middle class XI science stream state of high school, Sentolo I, Yogyakarta.

This research could be categorized as descriptive qualitative. The instrument employed in this research including problems relating to Boyle's Law especially and kinetic theory of gas generally for test written importance and than interview. Test written to be used to know level of participant understanding's. The problems was tried out to a group of students prior to revision in order to discover the extent to which misconception occurred. Interview was employed at participant that probably have misconception see from test written result.

Result of research indicate that as a whole the understanding of participant about Boyle's Law for gases still less shown by average level of concept insight to reach round 50,84%. It is interesting to note that, for the greater part of participant do not understand the concept of mol, mass and mass of molecules; equation of ideal gases; pressure of a gas in sealed syringe. At this research misconception happened in understand the concept of temperature, volume and mass of a gas in different state of compression; energy kinetic of molecules and rms speed of molecules. Misconceptions often reflect a basic lack of understanding hidden beneath the ability to use equation to solve problems because many of the problems could be solved through memorization of the formulae, rather than through any conceptual understanding of the content.