PENERAPAN *CONCEPTUAL CHANGE MODEL* BERBANTUAN SIMULASI KOMPUTER TERHADAP PERUBAHAN KONSEPSI DAN MODEL MENTAL SISWA

TESIS

Diajukan untuk memenuhi sebagian syarat memperoleh gelar
Magister Pendidikan Fisika

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UNIVERSITAS PENDIDIKAN INDONESIA

2019

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ABSTRAK

Konsepsi merupakan bekal siswa dalam memecahkan permasalahan, karenanya penting bagi siswa untuk memiliki konsepsi ilmiah supaya siswa memiliki solusi alternatif yang tepat. Penelitian ini bertujuan untuk mengetahui penerapan *Conceptual Change Model* berbantuan simulasi komputer terhadap perubahan konsepsi dan model mental siswa dalam pembelajaran. Desain penelitian yang digunakan adalah *embedded experimental design*. Subyek penelitian yang digunakan adalah siswa kelas XI MIA pada salah satu SMA Swasta di Bandung, sebanyak 23 siswa sebagai kelas eksperimen dan 20 siswa sebagai kelas kontrol. Instrumen yang digunakan adalah tes 4THT sebanyak 11 butir soal. Efektivitas *Conceptual Change Model* berbantuan simulasi komputer terhadap peningkatan level konsepsi siswa dapat dilihat dari niai *effect size* d = 0,53, dikategorikan cukup. Perubahan level konsepsi terbesar terjadi pada kategori AC tipe komplementer (28,46%). Model mental siswa setelah pembelajaran berada pada kategori *Scientific* (71,94%).

Kata kunci: Conceptual Change Model, Perubahan Konsepsi, Model Mental

ABSTRACT

Conception is a provision for students to solve problems, so it is important for students to have a scientific conception so that students have appropriate alternative solutions. This study aims to the application of Conceptual Change Model aided by computer simulations on changes in the conception and mental models of students in learning. The research design used is embedded experimental design. The research subjects used were class XI MIA students at one of the Private High Schools in Bandung, as many as 23 students as the experimental class and 20 students as the control class. The instrument used was 4THT test with 11 items. The effectiveness of the Conceptual Change Model aided by computer simulations on increasing the level of students' conceptions can be seen from the effect size d = 0.53, categorized as sufficient. The biggest change in conception level occurred in the category of complementary type AC (28.46%). The mental models of students after learning are in the Scientific category (71.94%).

Keywords : Conceptual Change Model, Conceptual Change, Mental Model.

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