

ABSTRAK

NINA APRILISTYANI: Pengembangan CD Interaktif Fisika Berbasis *Macromedia Flash* untuk Meningkatkan Hasil Belajar dan Kemampuan Berpikir Kritis Siswa Kelas X SMA. Tesis. Yogyakarta: Program Pascasarjana, Universitas Negeri Yogyakarta, 2014.

Penelitian ini bertujuan untuk (1) mengembangkan CD interaktif fisika berbasis *macromedia flash* yang berkualitas sehingga layak digunakan untuk pembelajaran fisika kelas X SMA materi alat optik; (2) mengetahui tanggapan siswa selama pembelajaran menggunakan CD interaktif fisika berbasis *macromedia flash* yang dikembangkan; (3) mengetahui hasil belajar siswa setelah menggunakan CD interaktif fisika berbasis *macromedia flash* hasil pengembangan; (4) mengetahui kemampuan berpikir kritis siswa selama menggunakan CD interaktif fisika berbasis *macromedia flash* hasil pengembangan.

Penelitian ini merupakan *research and development* (R&D) yang mengacu pada model 4-D yang meliputi *define, design, develop* dan *desseminate*. Penilaian produk dilakukan oleh dua orang ahli materi, dua orang ahli media, dua orang guru fisika dan dua orang teman sejawat. Uji coba produk dilakukan pada siswa kelas X SMA N 1 Bantul, dengan rincian sembilan siswa untuk uji coba terbatas dan 27 siswa untuk uji coba lapangan. Instrumen pengumpulan data adalah lembar angket, lembar observasi, dan lembar soal *pretest* dan *posttest*.

Hasil penelitian adalah sebagai berikut: 1) CD interaktif fisika berbasis *macromedia flash* hasil pengembangan dikategorikan sangat baik ditinjau dari aspek materi dan media. 2) Siswa setuju untuk menggunakan CD interaktif fisika dalam pembelajaran fisika. 3) Hasil belajar siswa setelah menggunakan CD interaktif fisika berbasis *macromedia flash* meningkat dengan rerata skor gain 0,60 dan dikategorikan sedang. Ketuntasan belajar meningkat sebesar 55,65%. Tidak ada pengaruh CD interaktif fisika berbasis *macromedia flash* terhadap hasil belajar siswa dengan nilai signfikansi = 0,117 > *alpha* 0,05. 4) Kemampuan berpikir kritis siswa meningkat dengan rerata skor gain 0,51 dan dikategorikan sedang. Ketuntasan berpikir kritis siswa meningkat sebesar 18,52%. Berdasarkan hasil observasi kemampuan berpikir kritis siswa pada uji coba terbatas dan uji coba lapangan sebesar 55,65% dan 85,18%. Ada pengaruh CD interaktif fisika berbasis *macromedia flash* terhadap kemampuan berpikir kritis siswa dengan nilai signifikansi 0,005 < *alpha* 0,05.

Kata kunci: *CD interaktif fisika, macromedia flash, alat optik, hasil belajar dan kemampuan berpikir kritis siswa*

ABSTRACT

NINA APRILISTYANI: *The Development of Physics Interactive CD Based on Macromedia Flash to Improve the Learning Outcome and Critical Thinking Skill of Grade X Students of Senior High School. Thesis. Yogyakarta: Graduate School, Yogyakarta State University, 2014.*

This study to (1) develop physics Interactive CD based on macromedia flash with quality to be appropriate for Grade X students of senior high schools for the topic of optical tools, (2) find out students' responses during the learning through the developed Interactive CD of Physics based on macromedia flash, (3) find out students' learning outcome improvement after the use of the developed Interactive CD of Physics based on macromedia flash, (4) find out students' improved critical thinking skills improvement during the use of the developed Interactive CD of Physics based on macromedia flash.

This research and development (R & D) study refers to the 4-D model. The steps in the 4-D model include define, design, develop, and disseminate steps. The product evaluation was conducted by two material experts, two media experts, two physics teachers, and two peers. The product tryout was carried out by involving Grade X students of SMAN 1 Bantul, consisting of nine students for the small-scale tryout and 27 students for the field tryout. The data were collected through a questionnaire, an observation sheet, a pretest, and a posttest.

The result of the study are as follows. 1) The developed physics Interactive CD based on macromedia flash was in the very good category in terms of the material and media aspects. 2) The students' responses showed they agreed to use of the developed physics Interactive CD based on macromedia flash. 3) Students learning outcomes with Interactive CD of Physics based on macromedia flash improved with an average gain score 0,60 and in the middle category. The learning outcome mastery improved 55,65%. There was no effect of the Interactive CD of Physics based on macromedia flash on learning outcomes of students with significance score = 0,117 > alpha 0,05. 4) Students critical thinking skills improved with an average gain score 0,51 and in the middle category. The critical thinking skills mastery improved 18,52%. Based on the observation of students' critical thinking skills for the small-scale tryout and for the field tryout were 55,65% and 85,18%. There was effect of the Interactive CD of Physics based on macromedia flash on critical thinking skills of students with significance score = 0,005 < alpha 0,05.

Keywords: *Interactive CD of Physics, macromedia flash, optical tools, learning outcomes, critical thinking skills*