ABSTRAK

AYU RAHAYU: Pengembangan *Subject Specific Pedagogy* (*SSP*) Berbasis Model *learning Cycle* untuk Meningkatkan Keterampilan Proses dan Pemahaman Konsep Fisika Materi Alat Optik Bagi Peserta Didik Kelas X SMA. **Tesis. Yogyakarta: Program Pascasarjana, Universitas Negeri Yogyakarta, 2013**

Penelitian ini bertujuan untuk mengungkapkan: (1) bentuk SSP berbasis model pembelajaran *learning cycle* yang dikembangkan untuk meningkatkan keterampilan proses dan pemahaman konsep fisika peserta didik, (2) kelayakan SSP berbasis model pembelajaran *learning cycle* yang dikembangkan, (3) mengetahui pengaruh SSP berbasis berbasis model pembelajaran *learning cycle* terhadap keterampilan proses sains peserta didik, serta (4) *m*engetahui pengaruh SSP berbasis berbasis model pembelajaran *learning cycle* terhadap pemahaman konsep fisika peserta didik.

Metode penelitian yang digunakan merupakan modifikasi dari model R&D Borg and Gall dan model 4D Thiagarajan dan terdiri dari tahapan: (1) pendefinisian, (2) perencanaan, (3) pengembangan, dan (4) diseminasi terbatas. Penelitian ini dilaksanakan di SMA Kolombo Yogyakarta dengan subjek pada uji coba terbatas sebanyak 20 orang dan pada uji coba lebih luas sebanyak 35 orang. Pengumpulan data dilakukan dengan menggunakan pedoman wawancara, lembar validasi untuk ahli, lembar keterlaksanaan pembelajaran, lembar tes, dan lembar angket untuk peserta didik. Masukan terhadap SSP dan temuan di lapangan juga digunakan sebagai dasar perbaikan SSP pada tahap berikutnya. Teknik analisis data yang digunakan yaitu statistik deskriptif dengan rata-rata skor dan persentase serta uji beda dengan uji *Mann Whitney*.

Hasil penelitian menunjukkan sebagai berikut. (1) SSP berbasis model *learning cycle* dikembangkan berdasarkan fase-fase *elicit, engagement, exploration, explanation, elaboration, evaluation*, dan *extend*. (2) SSP berbasis model *learning cycle* yang dikembangkan layak digunakan dalam pembelajaran Fisika SMA. (3) SSP berbasis model *learning cycle* dapat meningkatkan keterampilan proses sains peserta didik. (4) SSP berbasis model *learning cycle* yang dapat meningkatkan pemahaman konsep fisika peserta didik.

Kata Kunci: *subject specific pedagogy (SSP)*, model *learning cycle*, keterampilan proses, pemahaman konsep, materi alat optik

ABSTRACT

AYU RAHAYU: *Developing Subject Specific Pedagogy (SSP) Based on Learning Cycle Model to Improve Science Process Skills and Physics Concept Understanding in Optical Instruments Material of Grade X Students of High School*. **Thesis. Yogyakarta: Graduate School, Yogyakarta State University, 2013.**

This study aims to reveal: (1) the format of SSP based on the learning cycle model to improve process skills and concept understandings of physics, (2) the feasibility of the developed SSP based on learning cycle model, (3) the effect of SSP based on learning cycle model on the science process skills of students, and (4) the effect of SSP based on the learning cycle model on the physics concept understanding of the students.

The research method used is a modification of the R & D model by Borg and Gall and the 4D models of Thiagarajan and it consists of three stages: (1) define, (2) design, (3) develop, and (4) limited dissemination. The research was conducted at the SMA Kolombo Yogyakarta with 20 students in limited trial subject and 35 students in the wider field trial. The data were collected using an interview guide, experts validation sheet, learning implementation sheets, test, and questionnaires. Recommendations and advice in each step of development are used as the basis for planning the next steps. Techniques of data analysis which are used in this research are descriptive statistics with mean score and percentage and difference test with Mann Whitney test.

The results are as follows: (1) SSP based on the learning cycle model is developed by phases of elicit, engagement, exploration, explanation, elaboration, evaluation, and extend. (2) The developed SSP based on learning cycle model is proper for use in a high school physics instruction. (3) The SSP based on the learning cycle model can improve students' science process skills. (4) The SSP based on the learning cycle model can improve students' understanding of physics concepts.

Keywords: *subject specific pedagogy (SSP), learning cycle model, science process skills, physics concepts understanding, optical instrument materia*ls