

ABSTRAK

Joni Sadarlah Halawa, 2022. Pengembangan Bahan Ajar Pemodelan Non-Linear Berbasis Higher Order Thinking Skills Menggunakan *GeoGebra*, Skripsi. Program Studi Pendidikan Matematika, Jurusan Pendidikan dan Ilmu Pengetahuan Alam, Fakultas Keguruan dan Ilmu Pendidikan. Universitas Sanata Dharma.

Pemodelan matematika berbasis Higher Order Thinking Skills (HOTS) dan pemanfaatan teknologi merupakan suatu alternatif untuk mengembangkan kemampuan *communication, collaboration, critical thinking and problem solving, creativity and inovation* siswa pada abad-21. Pemanfaatan teknologi *GeoGebra* dapat meningkatkan keterampilan siswa dalam berpikir kritis dan pemecahan masalah. Penelitian ini bertujuan untuk mengembangkan bahan ajar pemodelan matematika berbasis HOTS dengan bantuan *GeoGebra* dan untuk mengetahui tanggapan mahasiswa calon guru pendidikan matematika Universitas Sanata Dharma terhadap bahan ajar tersebut.

Jenis penelitian ini adalah penelitian pengembangan dengan model pengembangan *Analysis, Design, Development, Implementation, Evaluation* (ADDIE). Tahapan ADDIE dilakukan sampai tahap ADD. Produk yang dihasilkan adalah bahan ajar guru dan bahan ajar siswa. Data yang dikumpulkan adalah data kualitatif yaitu komentar yang disampaikan oleh mahasiswa calon guru dan data skor hasil penilaian bahan ajar.

Hasil penelitian yang diperoleh adalah sebagai berikut: 1) proses pengembangan bahan ajar guru dan bahan ajar siswa menggunakan model pengembangan ADDIE yang dilakukan sampai tahap ADD meliputi tahap: *Analyze, Design, Development*. 2) Berdasarkan penilaian mahasiswa calon guru Pendidikan Matematika Universitas Sanata Dharma, bahan ajar siswa dinyatakan sangat layak dengan angka presentase sebesar 91,39% dan bahan ajar guru dinyatakan layak dengan angka presentase sebesar 73,61%. Bahan ajar yang sudah direvisi dapat dilihat secara utuh di bagian lampiran.

Kata kunci: Bahan Ajar, Pemodelan Matematika, *GeoGebra*, Model Pengembangan ADDIE, HOTS

ABSTRACT

Joni Sadarlah Halawa, 2022. Development of Higher Order Thinking Skills Based Non-Linear Modeling Teaching Materials Using *GeoGebra*, Undergraduate Thesis. Mathematics Education Study Program, Department of Mathematics and Natural Sciences Education, Faculty of Teacher Training and Education. Sanata Dharma University.

Mathematical modeling based on Higher Order Thinking Skill (HOTS) and the use of technology are an alternative to develop the 21st skills, which are communication, collaboration, critical thinking and problem solving, creativity and innovation. *GeoGebra* can be used to increase the critical thinking and problem solving skill of the students. The study aims to develop a mathematical modeling teaching resource based on HOTS using *GeoGebra* and to know the respond of to the students of the department of Mathematics Education of Sanata Dharma University upon the resource.

This is a research and development, following the process of Analysis, Design, Development, Implementation, Evaluation (ADDIE). Due the constrain of time, the research only up to the Development process. The outcome of the study are teaching resourch for teacher and students. The data were collected by interview, which is the comments of the students, and also the score of their evaluation upon the teaching resources.

The following are the result of the study. 1) The development of the teaching resources for teacher and student following ADDIE steps can be achieved to ADD, which are Analysis, Design, Development. 2) According to the evaluation of the students of the department of Mathematics, Sanata Dharma University, the teaching resource for student are excellent with the score 91,39% and the teaching resource for the teacher are good with the score 73,61%. The revised teaching resources are provided in the appendix.

Keywords: Teaching Materials, Mathematical Modeling, *GeoGebra*, ADDIE Development Model, HOTS