

ABSTRACT

Lissa Sarvita, 2019. Developing Instructional Design of Integral Topic Based On Realistic Mathematics Education Approach for Grade XI of Senior High School. The Magister of Mathematics Education Program at Mathematics and Science Faculty, Padang State University.

The aim of this research is to develop learning design integral topic based on Realistic Mathematics Education (RME) which is implemented through teacher's books and student's books. This research was design research combined the Plomp model and the Gravemeijer& Cobb model. The stages of design research in this study were preliminary study phase, prototype development phase, preparation for the experiment, the implementation of the experiment, retrospective analysis and assessment phase. Data analysis techniques used are descriptive statistics and descriptive techniques, which describe the validity, practicality and effectiveness of instructional design through teacher's books and student's books based on RME. Instrument data collection used: tests, observation sheets, interview sheets, questionnaires, and field notes. The subjects in this research were 11th grade students of 10 Padang Senior High School.

The result of the research shows that the instructional design of integral topic with RME approach through teacher's book and student's book have been valid. It is said to be valid because it has fulfilled the characteristics of the validity of both content and construct. The contents of instructional design through teacher's book and student's book are guided by the principles and characteristics of the RME. The context of the problems contained in the instructional design is adapted to the context of life of students and can bring students to do the mathematical process. The process of mathematics is one of the main focuses of this design, in order to train students to construct their own knowledge based on initial knowledge or experience. The instructional design through teacher's book and student's book have been practical because the product is easy to use and understand, the specified time allocation is efficient, interesting and contributes to the integral learning. The instructional design through teacher's book and student's book have been effective because the use of this design has a potential impact on student's reasoning abilities on the topic of integral. Based on the finding of this research, it can be concluded that the instructional design of integral topic based on RME approach for grade XI of senior high school have been valid, practical and effective.

Keywords: Developing Instructional Design, Integral, Teacher's Book, Student's Book, Realistic Mathematics Education

ABSTRAK

Lissa Sarvitas, 2019. Pengembangan Desain Pembelajaran Topik Integral Berbasis *Realistic Mathematic Education* (RME) untuk Peserta Didik Kelas XI SMA. Tesis Program Studi Magister Pendidikan Matematika Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Negeri Padang.

Tujuan dari penelitian ini adalah untuk mendesain alur belajar topik integral kelas XI SMA dengan pendekatan *Realistic Mathematics Education* (RME), diimplementasikan melalui buku guru dan buku siswa yang valid, praktis dan efektif. Metodologi yang digunakan dalam penelitian ini mengkombinasikan *design research* model Plomp dengan model Gravemeijer & Cobb. Tahapan *design research* dalam penelitian ini yaitu fase penelitian pendahuluan, persiapan eksperimen, fase pengembangan prototipe, pelaksanaan eksperimen, analisis restrospektif, dan fase penilaian. Teknik analisis data dalam penelitian ini yaitu statistik deskriptif dan teknik deskriptif, yaitu mendeskripsikan validitas, praktikalitas dan efektifitas desain alur belajar melalui buku guru dan buku siswa berbasis RME. Instrumen pengumpulan data yang digunakan: tes, lembar observasi, lembar wawancara, angket dan catatan lapangan. Subjek penelitian adalah siswa kelas XI SMA 10 Padang.

Hasil analisis data validitas menunjukkan bahwa desain alur belajar yang diimplementasikan melalui buku guru dan buku siswa dengan pendekatan RME yang dihasilkan telah memenuhi kriteria valid. Dikatakan valid karena telah memenuhi karakteristik kevalidan baik dari segi isi maupun konstruk. Isi desain pembelajaran melalui alur belajar yang diimplementasikan pada buku guru dan buku siswa berpedoman pada prinsip dan karakteristik RME. Konteks permasalahan yang dimuat pada desain pembelajaran disesuaikan dengan konteks kehidupan peserta didik dan dapat membawa peserta didik melakukan proses matematisasi. Proses matematisasi merupakan salah satu fokus utama pada desain pembelajaran ini, guna melatih peserta didik untuk mengkonstruksi sendiri pengetahuan berdasarkan pengetahuan awal atau pengalaman. Desain alur belajar yang diimplementasikan melalui buku guru dan buku siswa sudah praktis karena mudah untuk digunakan dan dipahami, alokasi waktu yang ditentukan efisien, menarik dan berkontribusi terhadap pembelajaran integral. Desain alur belajar yang diimplementasikan melalui buku guru dan buku siswa juga telah efektif karena penggunaan desain pembelajaran ini memberikan dampak potensial terhadap kemampuan penalaran peserta didik pada topik integral. Berdasarkan hasil tersebut, dapat disimpulkan bahwa desain pembelajaran topik integral kelas XI SMA dengan pendekatan *Realistic Mathematics Education* (RME) yang telah dihasilkan dapat dinyatakan valid, praktis dan efektif.

Kata Kunci: Pengembangan Desain Pembelajaran, Integral, Buku Guru, Buku Siswa, *Realistic Mathematics Education*