ABSTRACT

Developing Mathematics Materials Based on Discovery Learning and Open Ended Problems for the Senior High School Students Class X Semester 2

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Problem solving skills was the main object of mathematics learning. Giving open problems were an alternative to develop the problem solving ability of students. In order to be effective for the learning process, these needs to be supported with relevant learning materials. This is the basis for conducting research on the development of mathematics materials in the form of Lesson Plan and Student worksheet based on discovery learning model with open ended problem, which can provided experience of students s skill to investigate and solved problems relate to the real world.

This was a development research which applied Plomp model. It consisted of three phases: preliminary research, developing or prototype, and asessment phase. In the preliminary research phase, needs analysis, students analysis, curriculum analysis, and conceptual analysis were conducted. In the developing prototype phase, lesson plan and student worksheet based on discovery learning and open ended problem was developed. In the assesment phase, practicality and effectiveness tests were done in a limited scale. The data of practicality were gotten from the lesson plan implementation sheet, interviewed teacher and questionnaire distributed to the students. The data of effectiveness were gotten from the result of the test of the students s problem solving skills.

The results of the research indicated that the mathematics instructional materials developed were valid and practical. Based on the result of pre-test and post-test, it was found that the students s problem-solving ability increased after following the learning using learning materials developed. The precentage of learning was 68,75%. ii

ABSTRAK

Pengembangan Perangkat Pembelajaran Matematika Berbasis Model Penemuan dan Masalah *Open Ended* untuk Peserta Didik Kelas X SMA Semester 2

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Kemampuan pemecahan masalah merupakan tujuan pokok dari pem-belajaran matematika. Penyajian masalah matematika terbuka, merupakan alternatif untuk menumbuhkembangkan kemampuan pemecahan masalah peserta didik. Agar proses pembelajaran berlangsung efektif, perlu didukung dengan perangkat pembelajaran yang relevan. Hal tersebut yang mendasari untuk melakukan penelitian pengembangan perangkat pembelajaran matematika berupa Rencana Pelaksanaan Pembelajaran (RPP) dan Lembar Kerja Peserta Didik (LKPD) berbasis model pembelajaran penemuan dengan masalah *open ended.*

Jenis penelitian adalah penelitian pengembangan menggunakan model Plomp yang terdiri dari tiga fase yaitu fase investigasi awal, pengembangan atau pembuatan prototipe dan fase penilaian. Pada fase investigasi awal dilakukan analisis berupa analisis kebutuhan, analisis peserta didik, analisis kurikulum, serta analisis konsep. Pada fase pengembangan atau pembuatan prototipe dilakukan perancangan produk yaitu RPP dan LKPD berbasis model pembelajaran penemuan dengan masalah *open ended* untuk kelas X semester 2. Pada fase penilaian dilakukan uji praktikalitas dan uji efektivitas secara terbatas. Data praktikalitas diperoleh dari lembar keterlaksanaan RPP, wawancara guru, angket praktikalitas peserta didik. Data efektivitas diperoleh dari hasil tes akhir berupa tes kemampuan pemecahan masalah peserta didik.

Hasil penelitian menunjukkan bahwa perangkat pembelajaran yang dikembangkan telah valid dan praktis. Dari hasil analisis *pre-test* dan *post-test* diperoleh informasi bahwa terdapat peningkatan kemampuan pemecahan masalah peserta didik setelah mengikuti pembelajaran dengan menggunakan produk yang dikembangkan. Presentase ketuntasan hasil belajar mencapai 68,75%.