ABSTRACT

Developing Discovery Learning Based Instructional Materials for Teaching Linear Equation and Inequality Topics to the Students in Class X of Senior High School

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Mathematics learning process was expected to be fun so that the goals of the learning could be optimally achieved. The mathematics learning objectives, however, were not yet maximally accomplished especially on conceptual understanding and reasoning ability. This was caused by the instructional materials including those for linear equation and inequality topics which were not developed in accordance with the 2013 Curriculum. This research was conducted to produce discovery learning based mathematics instructional materials which were valid, practical, and effective.

This was a developmental research which applied Plomp model that consisted of preliminary research phase, developing or prototype designing phase and assessment phase. In preliminary research phase, needs analysis, curriculum analysis, students' analysis and conceptual analysis related to the problems found in mathematics learning. In developing or prototype designing phase, the lesson plan, the student worksheet and discovery based assessment on linear equation and inequality topics were developed. These materials then were validated by the researcher herself and then by the experts. In assessment phase, practicality test and effectiveness tests were done in a limited scale.

The data of the practicality were obtained by using lesson plan implementation sheet, assessment implementation sheet, questionnaire of practicality distributed to the teacher and questionnaire of practicality distributed to the students. The data of the effectiveness were seen from the student' learning achievement on cognitive aspect (quiz and posttest), the students' learning achievement on affective aspect (observation on the students' attitude) and the students' learning achievement on psychomotor aspect (observation on the students' skills). The results of the research indicated that the mathematics instructional materials developed were valid and practical. They were also effective to increase the students' learning competence on cognitive, affective, and psychomotor aspects.

ABSTRAK

Pengembangan Perangkat Pembelajaran Matematika Berbasis *Discovery Learning* untuk Materi Persamaan dan Pertidaksamaan Linear pada Kelas X Sekolah Menengah Atas

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Pembelajaran matematika yang diharapkan merupakan pembelajaran matematika yang menyenangkan bagi peserta didik sehingga tercapainya secara optimal tujuan pembelajaran matematika. Akantetapi kenyataannya tujuan pembelajaran matematika yaitu pemahaman konsep dan kemampuan penalaran belum tercapai secara maksimal. Hal ini disebabkan perangkat pembelajaran yang dikembangkan guru belum sesuai dengan kurikulum 2013, termasuk perangkat pembelajaran pada materi persamaan dan pertidaksamaan linear. Tujuan penelitian ini adalah menghasilkan perangkat pembelajaran matematika berbasis *discovery learning* pada materi persamaan dan pertidaksamaan linear yang valid, praktis, dan efektif.

Penelitian ini merupakan penelitian pengembangan dengan menggunakan model pengembangan Plomp yang terdiri atas fase investigasi awal, fase pengembangan atau pembuatan prototipe, dan fase penilaian. Pada fase investigasi awal dilakukan analisis kebutuhan, analisis kurikulum, analisis peserta didik, dan analisis konsep terkait permasalahan dalam pembelajaran matematika. Pada fase pengembangan atau pembuatan prototipe dilakukan perancangan RPP, LKPD, dan penilaian berbasis *discovery learning* pada materi persamaan dan pertidaksamaan linear, kemudian dilakukan evaluasi sendiri yang selanjutnya divalidasi oleh ahli. Fase penilaian dilakukan uji praktikalitas dan uji efektivitas secara terbatas.

Data praktikalitas diperoleh dari lembar keterlaksanaan RPP, lembar keterlaksanaan penilaian, angket praktikalitas guru, dan angket praktikalitas peserta didik. Data efektivitas diperoleh dari hasil belajar kompetensi kognitif berupa kuis dan tes akhir, hasil belajar kompetensi afektif berupa lembar pengamatan sikap, dan hasil belajar kompetensi psikomotor berupa lembar pengamatan keterampilan peserta didik. Hasil penelitian menunjukkan bahwa perangkat pembelajaran matematika yang dikembangkan telah valid dan praktis. Hasil belajar peserta didik pada kompetensi kognitif, afektif, dan psikomotor tergolong efektif.