

ABSTRACT

Developing Mathematics Instructional Materials Based on Discovery Learning for the XIth Grade Students of Senior High School

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One of the weakness that can be found in mathematics learning is learning process that not optimized students to find the concepts and principle by themselves yet. The learning process was not optimal because there were many of the students not participate actively in learning. Mathematics learning material that used by teacher is limited, just the students' book. One of the effort to resolve the problem is by developing mathematics instructional materials based on discovery learning for XIth grade of senior high school students.

This research is a developmental research that explain about developing process of discovery learning based mathematics instructional materials which were valid, practical, and effective for the XIth grade students of senior high school. The mathematics instructional materials based of discovery learning was developed using Plomp's model of development procedures that consisted of preliminary research phase, developing or designing prototype phase, and assessment phase. In preliminary research phase, needs analysis curriculum analysis, student's analysis, and conceptual analysis. In developing or designing prototype phase, the lesson plan and the student worksheet were developed. Then, the materials which developed were evaluated by the research by the researcher self and then by the expert. In assessment phase, practicality test and effectiveness were done in a limited scale.

The data of practicality were obtained by using lesson plan implementation sheet, interview, questionnaire of practicality that distributed to the teacher and the students. The data of effectiveness were obtained by collecting data throught observation of learning activities and the mathematics learning outcomes of the students. The results of the validity test showed that mathematics instructional materials based on discovery learning is valid according to the expert. The results of effectiveness shows that the students passed the standart by showing 78,125 %. In addition, the instructional materials is said to be effective based on the increasing of activity the students during the learning process. These results identify that mathematics instructional materials based on discovery learning developed is valid, practical, and have potential effects on the learning of mathematics.

ABSTRAK

Pengembangan Perangkat Pembelajaran Berbasis *Discovery Learning* untuk Peserta Didik Kelas XI SMA

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Kelemahan yang dapat ditemukan dalam pembelajaran matematika salah satunya adalah proses pembelajaran yang belum memaksimalkan peserta didik untuk menemukan sendiri konsep dan prinsip dari topik yang dipelajari. Pelaksanaan pembelajaran masih belum optimal karena masih banyak peserta didik yang belum berpartisipasi aktif dalam belajar. Bahan ajar yang digunakan guru pun masih terbatas meliputi buku siswa. Salah satu upaya yang dapat dilakukan untuk mengatasi permasalahan tersebut adalah dengan mengembangkan perangkat pembelajaran berbasis *discovery learning* untuk peserta didik kelas XI SMA.

Penelitian ini merupakan penelitian pengembangan yang bertujuan untuk menjelaskan proses pengembangan perangkat pembelajaran matematika yang valid, praktis, dan efektif untuk peserta didik kelas XI SMA. Perangkat pembelajaran yang dikembangkan menggunakan prosedur pengembangan model Plomp yang terdiri dari tiga fase, yaitu fase investigasi awal, fase pengembangan prototipe dan fase penilaian. Pada fase investigasi awal dilakukan analisis kebutuhan, analisis kurikulum, analisis peserta didik, dan analisis konsep. Pada fase pengembangan prototipe dilakukan perancangan RPP dan LKPD berbasis model *discovery learning*. Selanjutnya, perangkat yang dikembangkan dievaluasi evaluasi sendiri dan kemudian divalidasi oleh ahli. Fase penilaian dilakukan uji praktikalitas dan uji efektivitas secara terbatas.

Data praktikalitas diperoleh dari lembar observasi keterlaksanaan RPP, wawancara, dan angket respon guru dan peserta didik. Hasil uji validitas menunjukkan bahwa perangkat pembelajaran matematika berbasis *discovery learning* dinyatakan valid menurut para ahli. Hasil uji praktikalitas menunjukkan bahwa perangkat pembelajaran matematika berbasis *discovery learning* praktis berdasarkan guru dan peserta didik sebagai pengguna. Hasil uji efektifitas menunjukkan bahwa hasil belajar peserta didik yang tuntas setelah pembelajaran mencapai 78,125 %. Selain itu, perangkat pembelajaran dikatakan efektif terlihat dari aktivitas peserta didik selama proses pembelajaran mengalami peningkatan. Dari hasil tersebut mengidentifikasi bahwa perangkat pembelajaran yang dikembangkan valid, praktis, dan memiliki efek potensial pada pembelajaran matematika.