

## ABSTRAK

**EKA REZKI NOPIANTY. Pengembangan Bahan Ajar Berbasis Pendekatan Metakognisi untuk Meningkatkan Kemampuan Komunikasi Matematis dan Kemandirian Belajar Siswa di SMP Negeri 30 Medan.** Tesis. Medan: Program Studi Pendidikan Matematika Pascasarjana Universitas Negeri Medan, 2018.

Penelitian ini bertujuan untuk mendeskripsikan: (1) kevalidan bahan ajar berdasarkan validator ahli; (2) kepraktisan bahan ajar berdasarkan validator ahli dan praktisi, serta berdasarkan keterlaksanaan bahan ajar; (3) keefektivan bahan ajar berbasis pendekatan metakognisi yang dikembangkan; (4) peningkatan kemampuan komunikasi matematis menggunakan bahan ajar berbasis pendekatan metakognisi yang dikembangkan; dan (5) pencapaian kemandirian belajar siswa menggunakan bahan ajar berbasis pendekatan metakognisi yang dikembangkan. Peneliti mengembangkan bahan ajar berupa bahan ajar berbasis pendekatan metakognisi dengan menggunakan model pengembangan Dick & Carey. Dari hasil penelitian ini diperoleh bahwa: (1) bahan ajar yang dikembangkan memenuhi kriteria valid berdasarkan penilaian validator ahli; (2) bahan ajar yang dikembangkan memenuhi kriteria praktis berdasarkan penilaian validator ahli dan praktisi, serta keterlaksanaan bahan ajar; (3) bahan ajar yang dikembangkan memenuhi kriteria efektif berdasarkan ketuntasan klasikal, respon siswa, dan kemampuan guru mengelola pembelajaran; (4) pada uji coba I terjadi peningkatan kemampuan komunikasi matematis menggunakan bahan ajar yang dikembangkan dengan kategori rendah, yaitu sebesar 0,28 dan pada uji coba II terjadi peningkatan kemampuan komunikasi matematis menggunakan bahan ajar yang dikembangkan dengan kategori sedang, yaitu sebesar 0,56; dan (5) pencapaian kemandirian belajar siswa berada untuk indikator 1 (inisiatif belajar) sebesar 90,88%, indikator 2 (mendiagnosa kebutuhan belajar) sebesar 71,48%, indikator 3 (menetapkan tujuan belajar) sebesar 84,37%, indikator 4 (memandang kesulitan sebagai tantangan) sebesar 60,41%, indikator 5 (memanfaatkan dan mencari sumber yang relevan) sebesar 58,85%, indikator 6 (konsep diri) sebesar 81,83%, indikator 7 (metakognitif) sebesar 79,44%, dan indikator 8 (managemen diri) sebesar 84,50%.

Kata kunci: bahan ajar, model pengembangan Dick & Carey, pendekatan metakognisi, kemampuan komunikasi matematis, kemandirian belajar.

## ABSTRACT

**EKA REZKI NOPIANTY. Development of Learning Devices Based on Metacognition Approach to Improve Mathematical Communication Ability and Self Regulated Learning of Students in State SMP 30 of Medan.** Thesis. Medan: Postgraduate Program in Mathematics Education State University of Medan. 2018.

This study aims to describe: (1) the validity of learning devices based on expert validators; (2) the practicality of learning devices based on expert validators and practitioners, and based on the implementation of learning devices; (3) effectiveness of learning devices based on the developed metacognition approach; (4) improvement of mathematical communication skills using learning devices based on developed metacognition approach; and (5) achievement of self regulated learning using learning devices based on the developed metacognition approach. The researcher developed learning devices in the form of learning devices based on the metacognition approach using the Dick & Carey development model. From the results of this study it was found that: (1) learning devices developed fill valid criteria based on expert validator ratings; (2) learning devices developed fill practical criteria based on the assessment of expert validators and practitioners, as well as the implementation of learning devices; (3) learning devices developed fill effective criteria based on classical completeness, student response, and teacher's ability to manage learning; (4) in the first trial there was an increase in mathematical communication ability using learning devices developed with a low category, that is equal to 0.28 and in the second trial there was an increase in mathematical communication ability using learning devices developed in the medium category, namely 0.56; and (5) the achievement of self regulated learning is for indicator 1 (learning initiative) is 90.88%, indicator 2 (diagnosing learning needs) is 71.48%, indicator 3 (setting learning goals) is 84.37%, indicator 4 (viewing difficulty as challenge) is 60.41%, indicator 5 (utilizing and searching for relevant sources) is 58.85%, indicator 6 (self concept) is 81.83%, indicator 7 (metacognitive) is 79.44%, and indicator 8 (self management) is 84.50%.

**Keywords:** *learning devices, Dick & Carey development model, metacognition approach, mathematical communication ability, self regulated learning*