ABSTRAK

NADRAN HAMDANI SIREGAR. Perbedaan Peningkatan Kemampuan Penalaran Matematis antara Pembelajaran dengan Pendekatan Metakognisi Berbantuan Teknik *Probing* dan *Prompting* di SMP Negeri 4 Sei Suka. Tesis. Medan: Program Studi Pendidikan Matematika Pascasarjana Universitas Negeri Medan, 2016.

Penelitian ini bertujuan untuk menganalisis perbedaan peningkatan kemampuan Penalaran matematis siswa antara yang diajar melalui pendekatan metakognisi berbantuan teknik *probing* dan *prompting*; interaksi antara pendekatan pembelajaran dengan kemampuan awal matematika (tinggi, sedang, rendah) siswa terhadap kemampuan Penalaran matematis; proses jawaban soal kemampuan Penalaran matematis siswa pada masing-masing pembelajaran, serta respon siswa terhadap pada masing-masing pembelajaran. Penelitian ini merupakan jenis penelitian *quasi eksperiment*. Populasi dalam penelitian ini adalah seluruh siswa SMP Negeri 4 Sei Suka pada kelas VII yang terdiri dari 6 kelas parallel dan terpilih secara acak dua kelas. Instrumen penelitian yang digunakan terdiri dari tes kemampuan Penalaran matematis dan angket respon siswa. Instrumen tersebut dinyatakan telah memenuhi syarat validitas isi, serta koefisien reliabilitas sebesar 0,819 untuk tes kemampuan Penalaran matematis. Analisis data yang digunakan adalah ANAVA dua jalur dan analisis deskriptif proses jawaban matematika dan respon siswa. Hasil penelitian menunjukkan bahwa (1) Terdapat perbedaan peningkatan kemampuan penalaran matematis siswa antara yang diajar dengan pendekatan metakognisi berbantuan teknik *probing* dan yang diajar dengan pendekatan teknik *prompting*; (2) Tidak terdapat interaksi antara pendekatan pembelajaran dan kemampuan awal siswa (tinggi, sedang, dan rendah) terhadap peningkatan kemampuan penalaran matematis siswa; (3) Proses jawaban siswa pada kemampuan penalaran matematis siswa melalui pembelajaran dengan pendekatan metakognisi berbantuan teknik *prompting* lebih baik dibanding dengan pendekatan metakognisi berbantuan teknik *probing*; dan (4) respon positif terhadap pembelajaran dengan pendekatan metakognisi berbantuan teknik *prompting* lebih kuat daripada respon positif terhadap pembelajaran dengan pendekatan metakognisi berbantuan teknik *probing*.

Kata Kunci: Kemampuan Penalaran Matematis, pendekatan metakognisi berbantuan teknik *probing*, pendekatan metakognisi berbantuan teknik *prompting*, dan Kemampuan Awal Matematika Siswa.

ABSTRACT

NADRAN HAMDANI SIREGAR. The Difference Between Mathematical Reasoning Skills Improvement By Learning with Metacognitive Approach aided Probing and Prompting Techniques in SMP Negeri 4 Sei Suka. Thesis. Medan: Mathematics Education Graduate Study Program Medan State University, 2016.

This study aimed to analyze the differences in students' mathematical reasoning skills improvement taught by metacognition approach aided probing and prompting techniques; interaction between the learning approach with prior knowledge of students' mathematics (high, medium, low) to the mathematical reasoning skills; the answers process to students' the mathematical reasoning skills in each learning, as well as the students' response to the individual learning. This study is a quasi experimental research. The population in this study are all students of SMP Negeri 4 Sei Suka in the seventh grade consists of six parallel classes and randomly selected two classes. The research instrument consisted of both mathematical reasoning ability test and student questionnaire responses. The instrument has been declared eligible the content validity, and reliability coefficient of 0.819 for tests of mathematical reasoning skills. The data analysis used was ANOVA two ways and a descriptive analysis of the answers to math and student response. The results showed that (1) There are differences in students' mathematical reasoning skills improvement which are taught by metacognition approach aided probing techniques and the students taught by prompting technical approach; (2) There is no interaction between learning approach and the initial ability of students (high, medium, and low) to increase students' mathematical reasoning skills; (3) The process of students' answers on students' mathematical reasoning skills through learning with metacognition approach aided prompting techniques is better than metacognition approach aided probing techniques; and (4) The positive response to the learning with metacognition approach aided prompting techniques is stronger than the positive response to the learning with the approach of metacognition aided probing techniques.
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Keywords: Mathematical Reasoning Skills, Metacognition approach aided probing techniques, Metacognition approach aided prompting techniques, and Students' Early Mathematics Ability.