

## ABSTRAK

**Nurfadilah Siregar (2018).** Peningkatan Kemampuan Penalaran dan Berpikir Kreatif Matematis serta Pencapaian *Self-determination* Siswa melalui Strategi MCREST.

Penelitian ini secara umum bertujuan untuk mengkaji peningkatan kemampuan penalaran matematis (PM) dan berpikir kreatif matematis (BK), serta pencapaian *self-determination* (SDT) siswa melalui strategi *meaningfulness, confidence, relevance, enjoyment, social relationships, targets* (MCREST) yang selanjutnya disebut sebagai PMT dan pembelajaran langsung (PL) berdasarkan pembelajaran, level sekolah, dan kemampuan awal matematis (KAM). Metode penelitian ini adalah eksperimen semu dengan menggunakan *nonequivalent control-group design*. Populasi dalam penelitian ini adalah siswa kelas VIII SMPN di Kota Cimahi yang menerapkan Kurikulum 2013 pada Tahun Ajaran 2016/2017. Sampel dalam penelitian ini adalah siswa pada dua kelas di setiap level sekolah berbeda yang keseluruhannya berjumlah 122 orang siswa. Instrumen yang digunakan terdiri dari soal tes PM dan BK, serta skala SDT. Dari penelitian ini kesimpulan yang diperoleh adalah: (1) Secara keseluruhan tidak terdapat perbedaan peningkatan PM, BK, serta pencapaian SDT siswa yang mengikuti PMT dan siswa yang mengikuti PL; (2) berdasarkan level sekolah, pada level sekolah tinggi, peningkatan PM siswa yang mengikuti PMT lebih baik daripada siswa yang mengikuti PL, sedangkan peningkatan BK dan pencapaian SDT siswa yang mengikuti PMT tidak lebih baik daripada siswa yang mengikuti PL, pada level sekolah sedang, tidak terdapat perbedaan peningkatan PM dan BK, serta pencapaian SDT siswa yang mengikuti PMT dan siswa yang mengikuti PL; (3) berdasarkan kategori KAM, pada KAM tinggi, peningkatan PM siswa yang mengikuti PMT lebih baik daripada siswa yang mengikuti PL, sedangkan peningkatan BK dan pencapaian SDT siswa yang mengikuti PMT tidak lebih baik daripada siswa yang mengikuti PL, pada KAM sedang dan KAM rendah, tidak terdapat perbedaan peningkatan PM dan BK, serta pencapaian SDT siswa yang mengikuti PMT dan siswa yang mengikuti PL; (4) Terdapat pengaruh interaksi antara pembelajaran dan level sekolah terhadap peningkatan PM, sedangkan pada kemampuan lainnya yakni BK dan SDT, tidak terdapat pengaruh interaksi antara pembelajaran dan level sekolah terhadap peningkatan BK ataupun pencapaian SDT; (5) Terdapat pengaruh interaksi antara pembelajaran dan kemampuan awal matematis terhadap peningkatan PM, sedangkan pada kemampuan lainnya yakni BK dan SDT, tidak terdapat pengaruh interaksi antara pembelajaran dan kategori KAM terhadap peningkatan BK ataupun pencapaian SDT

Kata Kunci: Penalaran Matematis, Berpikir Kreatif Matematis, *Self-determination*, Strategi MCREST

## ABSTRACT

**Nurfadilah Siregar (2018).** The Enhancement of Students' Mathematical Reasoning and Creative Thinking Ability, and Their Achievement in Self-determination through MCREST Strategy.

In general, the purpose of this study is to analyze the enhancement of students' mathematical reasoning and creative thinking ability, and their achievement in self-determination through *meaningfulness, confidence, relevance, enjoyment, social relationships, targets* (MST) strategy and direct learning (DL) based on learning strategy, school level, and mathematical prior knowledge. In this study, research method is quasi experiment that used nonequivalent control-group design. The population in this study was the students in Grade VIII in Cimahi City which implemented Kurikulum 2013 in School Year 2016/2017. The samples were taken from different classes and school level, the total number of the samples were 122 students. The instruments in this study consists of eight essay test of mathematical reasoning and six essay test of mathematical creative thinking, and 40 items scale in self-determination. The conclusion of this study are: (1) There are no difference enhancement of students mathematical reasoning and creative thinking ability, achievement in self-determination in MST and DL; (2) Based on school level, in high school level, the enhancement of students mathematical reasoning ability in MST is better than the enhancement of students mathematical reasoning ability in DL, but for the enhancement of mathematical creative thinking ability and their achievement in self-determination are no differences in MST and DL, in middle school level, the enhancement of students mathematical reasoning and creative thinking ability, and their achievement in self-determination are no differences in MST and DL; (3) Based on mathematical prior knowledge categories, in high mathematical prior knowledge, the enhancement of students mathematical reasoning ability in MST is better than the enhancement of students mathematical reasoning ability in DL, but there are no differences in terms of the enhancement of students mathematical creative thinking ability and their achievement in self-determination in MST and DL, in other groups of mathematical prior knowledge, the enhancement of students mathematical reasoning and creative thinking ability, and their achievement in self-determination are no differences in MST and DL; (4) There exist an interaction effect between learning strategy and school level towards the enhancement of mathematical reasoning ability whereas between the enhancement of mathematical creative thinking ability as well as the achievement in self-determination, there is no interaction effect; (5) There exist an interaction effect between learning strategy and mathematical prior knowledge towards the enhancement of mathematical reasoning ability whereas between the enhancement of mathematical creative thinking ability as well as the achievement in self-determination, there is no interaction effect.

Keywords: Mathematical Reasoning, Mathematical Creative Thinking,  
Self- determination, MST Strategy

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