

ABSTRAK

Runisah (2016). Peningkatan Kemampuan Berpikir Kritis dan Kreatif Matematis serta Kemandirian Belajar Siswa SMP melalui Model *Learning Cycle 5E* dengan Teknik Metakognitif.

Kemampuan Berpikir Kritis Matematis (KBKM), Kemampuan Berpikir Kreatif Matematis (KBFM) dan kemandirian belajar diperlukan siswa untuk menyelesaikan berbagai masalah. Pada kenyataannya, kemampuan tersebut masih rendah. Karena itu diperlukan cara mengatasinya. Penelitian ini bertujuan untuk menggambarkan pencapaian dan peningkatan KBKM dan KBFM serta kemandirian belajar sebagai dampak penggunaan *Learning Cycle 5E* dengan teknik metakognitif (LCT) ditinjau dari keseluruhan siswa, level sekolah, dan Kemampuan Awal Matematika (KAM). Melalui penggunaan metode kuasi eksperimen dengan desain kelompok kontrol pretes-postes, 173 siswa kelas VIII di Kabupaten Indramayu mewakili satu sekolah level tinggi dan satu sekolah level sedang dilibatkan. Analisis data menggunakan Anova satu jalur, Kruskal Wallis, dan Anova dua jalur. Dari hasil penelitian disimpulkan: 1) Secara keseluruhan, pencapaian dan peningkatan KBKM serta KBFM kelompok LCT lebih baik dari kelompok LC dan KV. Pencapaian dan peningkatan KBKM dan KBFM kelompok LC lebih baik dari kelompok KV. 2) Tidak terdapat pengaruh interaksi antara pembelajaran dan level sekolah, terhadap pencapaian dan peningkatan KBKM serta KBFM, namun terdapat pengaruh interaksi antara pembelajaran dan KAM terhadap pencapaian dan peningkatan KBKM serta KBFM; 3) Secara keseluruhan, tidak terdapat perbedaan pencapaian dan peningkatan kemandirian antara kelompok LCT dan LC. Namun pencapaian dan peningkatan kemandirian kelompok LCT dan LC lebih baik dari kelompok KV; 4) Tidak terdapat pengaruh interaksi antara model dan level serta antara model dan KAM terhadap pencapaian kemandirian, namun terdapat pengaruh interaksi antara model dan level serta antara model dan KAM, terhadap peningkatan kemandirian; 5) Pada tes KBKM dan KBFM beberapa kekurangan siswa terdapat dalam hal: pemahaman konsep yang dipelajari dan konsep prasyarat; menginterpretasikan dan membuat grafik; menentukan pola; mengkomunikasikan gagasan; mengaplikasikan konsep; membuat model matematika; menentukan kaitan antar konsep; mendefinisikan variabel; mengemukakan berbagai ide (rencana) untuk memecahkan masalah; memberikan alternatif jawaban lain; menentukan jawaban dengan cara sendiri; mengembangkan ide-ide untuk membuat masalah dari situasi yang diberikan, dan kurangnya kemampuan penalaran.

Kata Kunci: kemampuan berpikir kritis, kemampuan berpikir kreatif, kemandirian belajar, *Learning Cycle 5E*, teknik metakognitif

ABSTRACT

Runisah (2016). The Enhancement of Critical and Creative Thinking Skills in Mathematics, and Self Regulated Learning of Junior High School Students Through The 5E Learning Cycle Model With Metacognitive Technique

Mathematical Critical Thinking Skills (MCTS), Mathematical Creative Thinking Skills (MVTS), and Self Regulated Learning (SRL) are needed by students to solve various problems. But in fact MCTS, MVTS, and SRL are still low, therefore it is necessary to overcome them. This study aimed to describe the achievement and enhancement of students' MCTS, MVTS, and SRL, as a result of the 5E Learning Cycle with metacognitive techniques (LCT) implementation that is measured entirely and based on student's school level and Mathematical Prior Ability (MPA). Through the use of quasi experimental method with pretest-posttest control group design, as many as 173 students of eighth grade students from two school levels classified as high and medium levels in Indramayu were involved. Analysis of data using One way Anova, Kruskal Wallis and two way ANOVA. The study reveal that: 1) viewed from totally students MCTS and MVTS Achievement and enhancement of LCT group is better than 5E Learning Cycle (LC) group and Conventional Learning (CL) group. MCTS and MVTS Achievement and enhancement of LC group is better than CL group; 2) there is no interaction effect between learning model and School level, toward achievement and enhancement of students' MCTS and students' MVTS, however, there is interaction effect between learning models and MPA toward enhancement and achievement of students' MCTS and students' MVTS; 3) In the term of overall, there is no difference of SRL achievement and enhancement between LCT and LC group. However, SRL achievement of LCT and LC group is better than CL group; 4) There is no interaction effect between learning model and school level toward the achievement of students' SRL and between learning model and MPA toward the achievement of students' SRL. Meanwhile, There is interaction effect between learning model and school level toward enhancement of students' SRL and between learning model and MPA toward enhancement of students' SRL; 5) On MCTS and MVTS tests, there are some shortcomings of students in terms of: understanding the concept being studied and the prior knowledge; interpret and make graphs; determine patterns; communicate ideas; applying the concept; making a mathematical model; determine the relation between concepts; defining variables; put forward various idea (plan) to solve the problem; provide another alternative answers; determine the answer in his own way; developing ideas to make the problem of a given situation, and the lack of reasoning ability.

Key word:

critical thinking skills, creative thinking skills, self regulated learning, the 5E Learning Cycle, metacognitive technique