

THE ENHANCEMENT OF JUNIOR HIGH SCHOOL STUDENTS' ABILITIES IN MATHEMATICAL PROBLEM SOLVING USING SOFT SKILL-BASED METACOGNITIVE LEARNING

Atma Murni¹, Jozua Sabandar², Yaya S. Kusumah², Bana Goerbana Kartasamita²

¹Riau University, Jl. Binawidya Km. 12.5, Simpang Baru, Pekanbaru 28293

²Indonesia Education University, Jl. Dr. Setiabudi No. 229 Bandung 40154
email: murni_atma@yahoo.co.id

Abstract

The aim of this study is to know the differences of enhancement in mathematical problem solving ability (MPSA) between the students who received soft skill-based metacognitive learning (SSML) with the students who got conventional learning (CL). This research is a quasi experimental design with pretest-posttest control group. The population in this study is the students of Junior High School in Pekanbaru city. The sample consist of 135 students, 68 of them are from the high-level school, and 67 students are from the middle-level school. The instruments are mathematical prior knowledge (MPK) test, MPSA test, instruction observation sheet, students journal about the lesson, and the guideline for interview. The data was analyzed using t-test and two-way ANOVA. The result of data analysis indicates: (1) overall, the enhancement of students' MPSA with SSML approach significantly is higher than those with conventional learning (CL); (2) there is no interaction between the learning approach (SSML and CL) with the school level (high and middle) toward the enhancement of MPSA; (3) there is no interaction between the learning approach (SSML and CL) with MPK (upper, middle, and low) toward the enhancement of MPSA.

Keywords: Mathematical Problem Solving Ability, Soft Skills-Based, Metacognitive Learning

Abstrak

Penelitian ini bertujuan mengetahui perbedaan peningkatan kemampuan pemecahan masalah matematis (KPMM) antara siswa yang mendapat pembelajaran metakognitif berbasis soft skills (PMSS) dan siswa yang mendapat pembelajaran konvensional (PK). Penelitian ini berbentuk kuasi eksperimen dengan disain kelompok kontrol pretes-postes. Populasi adalah siswa SMP Negeri Kota Pekanbaru dengan sampel 135 siswa, yaitu 68 siswa sekolah level tinggi dan 67 siswa sekolah level sedang. Instrumen penelitian adalah tes kemampuan awal matematis (KAM), tes KPMM, lembar observasi pembelajaran, jurnal siswa, dan pedoman wawancara. Analisis data menggunakan uji t dan ANAVA dua jalur. Hasil yang diperoleh dalam penelitian ini adalah: (1) secara keseluruhan, KPMM siswa yang mendapat pendekatan PMSS memperoleh peningkatan yang secara signifikan lebih tinggi daripada siswa yang mendapat pendekatan PK; (2) tidak terdapat interaksi antara pendekatan pembelajaran (PMSS dan PK) dengan level sekolah (tinggi dan sedang) terhadap peningkatan KPMM; (3) tidak terdapat interaksi antara pendekatan pembelajaran dengan KAM (atas, tengah, dan bawah) terhadap peningkatan KPMM.

Kata Kunci: Kemampuan Pemecahan Masalah Matematis, Pembelajaran Metakognitif Berbasis Soft Skills

The low of Indonesian students' mathematical abilities are a classic problem that cannot be overcome in a short period of time. The study of TIMSS 2007, TIMSS 2011 and PISA 2009 suggest that Indonesian students have low proficiency in answering the questions of international standard, especially in mathematical problem solving ability. This weakness appears due to the students are