

## ABSTRAK

**TUANI MANGARINCAN NAPITUPULU. Pengaruh pembelajaran berbasis masalah terhadap kemampuan pemecahan masalah dan komunikasi matematik siswa sma negeri 3 binjai.** Tesis. Medan: Program Studi Pendidikan Matematika Pascasarjana Universitas Negeri Medan. 2016.

Penelitian ini bertujuan untuk mengetahui: (1) Pengaruh pembelajaran berbasis masalah (PBM) terhadap kemampuan pemecahan masalah matematik siswa. (2) Pengaruh pembelajaran berbasis masalah terhadap kemampuan komunikasi matematik siswa. (3) Interaksi antara pembelajaran berbasis masalah dan kemampuan awal matematik (KAM) terhadap kemampuan pemecahan masalah matematik siswa. (4) Interaksi antara pembelajaran berbasis masalah dan KAM terhadap kemampuan komunikasi matematik siswa. Jenis penelitian *quasi eksperiment*. Populasi seluruh siswa MAN 3 Binjai. Sampel menggunakan teknik *cluster sampling*. Kelas IX-5 (32 siswa) diajarkan dengan PBM dan kelas IX-4 (33 siswa) diajarkan dengan Konvensional. Instrumen yang digunakan terdiri dari tes kemampuan pemecahan masalah dan komunikasi matematik siswa. Analisis yang dilakukan menggunakan ANAVA. Hasil penelitian menunjukkan bahwa: (1) Terdapat pengaruh yang signifikan terhadap kemampuan pemecahan masalah matematik siswa yang diajarkan dengan pembelajaran berbasis masalah. (2) Terdapat pengaruh yang signifikan terhadap komunikasi matematik siswa yang diajarkan dengan pembelajaran berbasis masalah. (3) Tidak terdapat interaksi yang signifikan antara model pembelajaran dan KAM terhadap kemampuan pemecahan masalah. (4) Tidak terdapat interaksi yang signifikan antara model pembelajaran dan KAM terhadap Kemampuan komunikasi matematik siswa.

**Kata kunci:** Pemecahan Masalah, Komunikasi Matematik, Pembelajaran Berbasis Masalah.

## ABSTRACT

**TUANI MANGARINCAN NAPITUPULU. The Effect of problem-based learning toward problem solving and communication abilities of students mathematical sma 3 Binjai country.** Thesis. Terrain: Mathematics Education Graduate Program, State University of Medan. 2016

This study aims to determine: (1) The effect of problem-based learning toward students' mathematical problem solving ability. (2) The effect of problem based learning to students' mathematical communication skills. (3) The interaction between problem based learning (PBL) and Previous mathematical knowledge (KAM) to the mathematical problem solving abilities of students. (4) The interaction between problem based learning and KAM against mathematical communication skills of students. The type of this research is quasi experiment. The population is the entire students of SMAN 3 Binjai. The sample is using cluster sampling technique. Class IX-5 (32 students) were taught by PBL and class IX-4 (33 students) were taught by Conventional method. The instrument used are consist from the test capabilities of mathematical problem solving and the communication of students. The analysis was performed using ANOVA. The results showed that: (1) There is a significant influence on mathematical problem-solving ability of students were taught by problem-based on learning. (2) There is a significant influence on students were taught mathematical communication by problem based learning. (3) There is no significant interaction between the learning model and human responsibilities towards problem solving capabilities. (4) There is no significant interaction between the learning model and the ability to communicate mathematical KAM students.

**Keywords:** Problem Solving, Mathematics Communication, Problem-Based Learning.