

## ABSTRACT

**YUMIRA SIMAMORA.** The differences in Enhancement of Ability in Creative Thinking and Mathematics Problem-Solving between Students Given Problem-based Learning and Direct Teaching. Thesis. Medan: Mathematics Education Study Program Postgraduate School of University of Medan, 2011

This study was aimed to determine the differences: (1) the enhancement of ability of creative thinking between students who were given problem-based learning with students who were given direct instruction. (2) the enhancement of ability in math problem-solving ability between students who were given problem-based learning with students who were given direct instruction (3) the pattern of answers that the students make in solving problems in each lesson. This study was a quasi-experimental research. The population of study was the students of Madrasah Aliyah Laboratorium IAIN SU Medan with accreditation B. Random sample selection is done by randomizing the class. The instrument used consists of: (1) the test of ability of creative thinking (2) the test of problem-solving abilities, with the subject system of linear equations. The tests used to obtain the data was the description. The data in this study were analyzed using descriptive statistical analysis and inferential analysis. Descriptive analysis aimed to describe patterns of student answers on the model of problem-based learning and direct instruction. Inferential data analysis performed by analysis of covariance (ANAKOVA). The results showed that: (1) there is a difference in the enhancement of ability of creative thinking between students who were given mathematics problem-based learning and those were given direct teaching. The average of the experimental group experienced the increasing 00:47 for the aspect of Fluency, flexibility aspect has increased 0.96, aspect of elaboration increased 0.94, Originality aspect has increased 1.46, while the whole aspect has increased 3.83. While the control group increased 0.07 for the fluency aspect, flexibility aspect has increased 0.60, aspect of the elaboration increased 0.50, aspect of originality increased 0.97, while the whole aspect has increased 2.00. (2) there is a difference in enhancement of mathematics problem-solving ability between students who were given problem-based learning and those who were given direct teaching. The average of the experimental group in understanding the problem has increased 10.43, aspect of planning the problem-solving has increased 7.1, aspect of performing calculations has increased 11.56, re-examining aspect has increased 6.06, while the whole aspect has increased 29.17. While aspects of the control group in understanding problem has increased 0.34, planning the problem-solving aspect has increased 4.37, the aspect of performing calculations has increased 5.67, re-examining aspect has increased 2.2, while the whole aspect has increased 12.57. (3) The pattern of students' answers to the problem-based learning is better than direct teaching. Based on these results, the researcher suggest that the model of problem-based learning in Mathematics learning can be an alternative for Math teachers to improve their creative thinking and Mathematics students problem solving as an alternative for implementing the innovative learning on Mathematics

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**YUMIRA SIMAMORA. Perbedaan Peningkatan Kemampuan Berpikir Kreatif Dan Pemecahan Masalah Matematika Antara Siswa Yang Diberi Pembelajaran Berbasis Masalah Dengan Pengajaran Langsung. Tesis. Medan: Program Studi Pendidikan Matematika Pascasarjana Universitas Negeri Medan, 2011.**

Penelitian ini bertujuan untuk mengetahui perbedaan : (1) peningkatan kemampuan berpikir kreatif antara siswa yang diberi pembelajaran berbasis masalah dengan siswa yang diberi pengajaran langsung. (2) peningkatan kemampuan pemecahan masalah matematika antara siswa yang diberi pembelajaran berbasis masalah dengan siswa yang diberi pengajaran langsung (3) pola jawaban yang dibuat siswa dalam menyelesaikan masalah pada masing-masing pembelajaran. Penelitian ini merupakan penelitian kuasi eksperimen. Populasi penelitian ini siswa Madrasah Aliyah Laboratorium IAIN SU Medan yang terakreditasi B. Pemilihan sampel dilakukan secara random dengan mengacak kelas. Instrumen yang digunakan terdiri dari: (1) tes kemampuan berpikir kreatif (2) tes kemampuan pemecahan masalah, dengan pokok bahasan sistem persamaan linier. Adapun tes yang digunakan untuk memperoleh data adalah berbentuk uraian. Data dalam penelitian ini dianalisis dengan menggunakan analisis statistik deskriptif dan analisis inferensial. Analisis deskriptif ditujukan untuk mendeskripsikan pola jawaban siswa pada model pembelajaran berbasis masalah dan pengajaran langsung. Analisis inferensial data dilakukan dengan analisis kovarians (ANAKOVA). Hasil penelitian menunjukkan bahwa : (1) terdapat perbedaan peningkatan kemampuan berpikir kreatif matematika antara siswa yang diberi pembelajaran berbasis masalah dengan pengajaran langsung. Diperoleh rata-rata kelompok eksperimen aspek fluency mengalami peningkatan 0,47, aspek flexibility mengalami peningkatan 0,96, aspek elaboration mengalami peningkatan 0,94, aspek originality mengalami peningkatan 1,46, sedangkan keseluruhan aspek mengalami peningkatan 3,83. Sedangkan kelompok kontrol aspek fluency mengalami peningkatan 0,07, aspek flexibility mengalami peningkatan 0,60, aspek elaboration mengalami peningkatan 0,50, aspek originality mengalami peningkatan 0,97, sedangkan keseluruhan aspek mengalami peningkatan 2,00. (2) terdapat perbedaan peningkatan kemampuan pemecahan masalah matematika antara siswa yang diberi pembelajaran berbasis masalah dengan pengajaran langsung. Diperoleh rata-rata kelompok eksperimen aspek memahami masalah mengalami peningkatan 10,43, aspek merencanakan pemecahan mengalami peningkatan 7,1, aspek melakukan perhitungan mengalami peningkatan 11,56, aspek memeriksa kembali mengalami peningkatan 6,06, sedangkan keseluruhan aspek mengalami peningkatan 29,17. Sedangkan kelompok kontrol aspek memahami masalah mengalami peningkatan 0,34, aspek merencanakan pemecahan mengalami peningkatan 4,37, aspek melakukan perhitungan mengalami peningkatan 5,67, aspek memeriksa kembali mengalami peningkatan 2,2, sedangkan keseluruhan aspek mengalami peningkatan 12,57. (3) Pola jawaban siswa pada pembelajaran berbasis masalah lebih baik dibandingkan dengan pengajaran langsung. Berdasarkan hasil penelitian ini, maka peneliti menyarankan agar model pembelajaran berbasis masalah pada pembelajaran matematika dapat dijadikan alternatif bagi guru matematika untuk meningkatkan kemampuan berpikir kreatif dan pemecahan masalah matematika siswa sebagai salah satu alternatif untuk menerapkan pembelajaran matematika yang inovatif.