

## ABSTRAK

**ARIFAH MUZAYYANAH.** *Komparasi Keefektifan Pendekatan Problem Posing dan Investigation dalam Pembelajaran Geometri Ditinjau dari Kemampuan Pemecahan Masalah Matematis, Motivasi dan Prestasi Belajar Matematika Siswa Kelas VII SMP Negeri 2 Gamping Sleman.* Tesis. Yogyakarta: Program Pascasarjana, Universitas Negeri Yogyakarta, 2014.

Penelitian ini bertujuan untuk mendeskripsikan: 1) keefektifan pembelajaran matematika menggunakan pendekatan *problem posing* dan *investigation* ditinjau dari kemampuan pemecahan masalah matematis, motivasi dan prestasi belajar matematika; 2) perbandingan keefektifan antara pendekatan *problem posing* dengan *investigation* ditinjau dari kemampuan pemecahan masalah matematis, motivasi dan prestasi belajar matematika siswa kelas VII SMP Negeri 2 Gamping, Sleman.

Penelitian ini merupakan penelitian eksperimen semu dengan *Pre-test and Post-test design*. Penelitian ini menggunakan dua kelompok eksperimen. Populasi penelitian ini adalah seluruh siswa kelas VII SMP Negeri 2 Gamping yang terdiri dari 206 siswa. Sampel dipilih secara acak dari populasi yang ada dan terpilih siswa kelas VII A diberi perlakuan menggunakan pendekatan *problem posing* dan siswa kelas VII B diberi perlakuan menggunakan pendekatan *investigation*. Instrumen yang digunakan berupa tes kemampuan pemecahan masalah matematis dan prestasi belajar matematika serta angket motivasi belajar matematika. Bukti validitas instrumen berupa validitas isi dan konstruk sedangkan estimasi reliabilitas menggunakan *Alpha Cronbach*. Estimasi reliabilitas untuk *pre-test* dan *post-test* kemampuan pemecahan masalah matematis dan prestasi belajar matematika serta angket motivasi belajar matematika berturut-turut adalah 0,859; 0,861; 0,677; 0,661; dan 0,961. Untuk mengetahui keefektifan pendekatan *problem posing* dan *investigation* ditinjau dari masing-masing variabel, data dianalisis dengan *one sample t test*. Selanjutnya, untuk membandingkan keefektifan pendekatan *problem posing* dan *investigation* ditinjau dari seluruh variabel secara multivariat, data dianalisis dengan menggunakan uji  $T^2$  *Hotteling's* dan *independent samples test* untuk mengetahui pendekatan mana yang lebih efektif ditinjau dari masing-masing variabel.

Hasil penelitian menunjukkan bahwa: 1) pembelajaran matematika menggunakan pendekatan *problem posing* dan *investigation* efektif ditinjau dari kemampuan pemecahan masalah matematis, motivasi dan prestasi belajar matematika; 2) pembelajaran matematika menggunakan pendekatan *investigation* lebih atau sama efektif dibandingkan dengan menggunakan pendekatan *problem posing* ditinjau dari kemampuan pemecahan masalah matematis dan prestasi belajar matematika; 3) pembelajaran matematika menggunakan pendekatan *problem posing* lebih efektif dibandingkan dengan pembelajaran matematika menggunakan pendekatan *investigation* ditinjau dari motivasi belajar matematika siswa kelas VII SMP Negeri 2 Gamping, Sleman.

**Kata kunci:** pendekatan *problem posing*, pendekatan *investigation*, pemecahan masalah matematis, prestasi belajar matematika, motivasi belajar matematika.

## ABSTRACT

**ARIFAH MUZAYYANAH.** *Comparative Study on Effectiveness of Problem Posing and Investigation Approach on Geometry Teaching in Terms of Mathematical Problem Solving Abilities, Motivation to Learn and Learning Achievement in Mathematics of Students of 7<sup>th</sup> Grade of State Junior High School 2 Gamping Sleman.* **Thesis. Yogyakarta: Graduate School, Yogyakarta State University, 2014.**

This study aims to describe: 1) the effectiveness of the problem posing and investigation approach on mathematics teaching in terms of mathematical problem solving abilities, motivation to learn and learning achievement in mathematics; 2) the comparison of the effectiveness between problem posing and investigation approach in terms of mathematical problem solving abilities, motivation to learn and learning achievement in mathematics of students of 7<sup>th</sup> Grade of State Junior High School 2 Gamping Sleman.

This study was quasi experimental research with the Pre-test and Post-test Design. In this study, two experimental groups were used. The population of the research was all 7<sup>th</sup> grade students of State Junior High School 2 Gamping which consisted of 206 students. Two classes were randomly chosen for this research. Students of class VII A was treated using the problem posing approach, while students of class VII B was treated using the investigation approach. The research instrument was a mathematical problem solving abilities and learning achievement test and the students' motivation to learn mathematics questionnaire. The validity of the instrument was obtained using the content and construct validity, while the estimate of reliability using the Alpha Cronbach. Estimate of reliability for pre-test and post-test of mathematical problem solving abilities and learning achievement test and the students' motivation to learn mathematics questionnaire respectively are 0,859; 0,861; 0,677; 0,661; and 0,961. One sample t-test at a significance level of 5% was used to test the effectiveness of teaching using problem posing and investigation approach in terms of each variabel. T<sup>2</sup> Hotellings test at a significance level of 5% was used to compare the effectiveness of the teaching using problem posing and investigation approach in terms of all variable simultaneously, the independent samples t test was done to determine which approach is more effective in terms of each variables.

The research result indicates that: 1) teaching using problem posing and investigation both are effective in terms of mathematical problem solving abilities, motivation to learn and learning achievement in mathematics; 2) teaching using investigation approach is more or equally effective compared to teaching using problem posing approach in terms of mathematical problem solving abilities and learning achievement in mathematics, 3) teaching using problem posing approach is more effective than teaching using investigation approach in terms of students' motivation to learn mathematics.

**Keywords:** *problem posing approach, investigation approach, problem solving abilities, learning achievement in mathematics, motivation to learn mathematics.*