ABSTRAK

Annisa Nurul Jannah, 2023, Implementasi model pembelajaran *Problem Based Learning* Berbantuan *E-Module* untuk Meningkatkan Kemampuan Berpikir Geometris Siswa. Program Studi Pendidikan Matematika, Universitas Muhammadiyah Semarang. Pembimbing: I. Venissa Dian Mawarsari, S.Pd., M.Pd., II. Eko Andy Purnomo, S.Pd., M.Pd.

Kata Kunci: pembelajaran berbasis masalah, berpikir geometris, media pembelajaran, *e-module*

Penelitian ini dilaksanakan berdasarkan permasalahan yang ada di MTs Muhammadiyah 03 Ngargosari. Berdasarkan wawancara dan observasi, ditemukan beberapa permasalahan, yaitu siswa kesulitan memahami materi bangun ruang sisi datar, kemampuan berpikir geometris siswa rendah, perlunya media pembelajaran untuk membantu proses pembelajaran di sekolah, rendahnya kemandirian belajar dan motivasi siswa. Berdasarkan permasalahan, solusi yang ditemukan adalah dengan implementasi model pembelajaran *PBL* berbantuan *e-module* untuk meningkatkan kemampuan berpikir geometris siswa. Penelitian ini bertujuan untuk mengetahui ketuntasan kemampuan berpikir geometris siswa dalam implementasi model pembelajaran *PBL* berbantuan *e-module*, mengetahui pengaruh kemandirian belajar dan motivasi siswa terhadap kemampuan berpikir geometris siswa dan mengetahui perbedaan rata-rata kemampuan berpikir geometris siswa tanpa dan dengan implementasi model pembelajaran *PBL* berbantuan *e-module*. Penelitian ini dilaksanakan menggunakan jenis penelitian eksperimen semu (*quasi experiment*) dengan metode kuantitatif. Populasi dalam penelitian ini siswa kelas 9D SMPN 5 Ungaran sebagai anggota uji coba instrument dan seluruh siswa kelas 8 MTs Muhammadiyah Ngargosari sebagai anggota uji lapangan. Teknik pengambilan sampel yang digunakan adalah sampling jenuh, 30 siswa kelas 9D SMPN 5 Ungaran sebagai anggota uji coba instrumen dan seluruh siswa kelas 8 di MTs Muhammadiyah 03 Ngargosari sebagai uji lapangan. Kelas uji coba instrumen digunakan untuk menguji instrumen yang akan digunakan untuk mengumpulkan data. Uji lapangan, terdapat dua kelas yaitu : kelas eksperimen diberi implementasi model pembelajaran *PBL* berbantuan *e-module* dan kelas kontrol menggunakan model pembelajaran konvensional. Teknik pengumpulan data yang digunakan adalah wawancara, dokumentasi, tes, angket, observasi. Hasil penelitian ini menunjukkan uji ketuntasan individual dengan t hitung (5.215) > t tabel (1.753), artinya ketuntasan individual terpenuhi. Uji ketuntasan klasikal dengan z hitung (13.75) > z tabel (1.96), artinya ketuntasan klasikal terpenuhi. Uji pengaruh motivasi dan kemandirian belajar terhadap kemampuan berpikir geometris pada uji koefisien determinasi, didapat pengaruh sebesar 94.7%. Uji beda rata-rata kemampuan berpikir geometris, didapat nilai nilai sig. (2-tailed) *posttest*, sebesar 0.000 < 0.05 artinya ada perbedaan yang signifikan antara kemampuan berpikir geometris kelas eksperimen dan kelas kontrol. Kesimpulan dari penelitian ini adalah setelah implementasi model pembelajaran *PBL* berbantuan *e-module* ketuntasan kemampuan berpikir geometris siswa terpenuhi, dengan presentase ketuntasan klasikal sebesar 93.75% kategori baik sekali, terdapat pengaruh kemandirian belajar dan motivasi siswa terhadap kemampuan berpikir geometris siswa sebesar 94.7%, terdapat perbedaan rata-rata yang signifikan kemampuan berpikir geometris siswa tanpa dan dengan implementasi model pembelajaran *PBL* berbantuan *e-module* dan menunjukkan peningkatan kemampuan berpikir geometris siswa dengan implementasi model pembelajaran *PBL* berbantuan *e-module* lebih tinggi dari siswa yang pembelajarannya menggunakan model pembelajaran konvensional.

ABSTRACT

Annisa Nurul Jannah, 2023, Implementation of Problem-Based Learning Assisted E-Modules to Improve Students' Geometry Thinking Ability. Mathematics Education Study Program, Muhammadiyah University Semarang. Advisor : I. Venissa Dian Mawarsari, S.Pd., M.Pd., II. Eko Andy Purnomo, S.Pd., M.Pd.

Keywords: problem-based learning, geometric thinking, learning media, e-module

This research was conducted based on the problems that existed at MTs Muhammadiyah 03 Ngargosari. Based on interviews and observations, several problems were found, namely students having difficulty understanding flat geometric material, students' geometric thinking skills were low, the need for learning media to assist the learning process at school, learning independence and student learning motivation. low. . Based on these problems, the solution found is the application of PBL assisted by e-modules to improve students' geometric thinking abilities. This study aims to determine the mastery of students' geometric thinking skills in the application of PBL assisted by e-module, to determine the effect of independent learning and student motivation on students' geometric thinking abilities and to determine the average difference in students' geometric thinking abilities. students' geometric thinking skills without and with the application of assisted PBL. e-module. This research was conducted using a quasi-experimental research type with quantitative methods. The population in this study were 9D class students at SMPN 5 Ungaran as participants in the instrument trial and all 8th grade students at MTs Muhammadiyah Ngargosari as participants in the field test. The sampling technique used was saturated sampling, 30 class 9D students of SMPN 5 Ungaran as participants in the instrument trial and all 8th grade students of MTs Muhammadiyah 03 Ngargosari as field tests. The control class was taken from all 8B graders, totaling 9 students. The experimental class of all 8A grade students totaled 16 students. The instrument trial class is used to test the instruments that will be used to collect data. In the field test there were two classes: the experimental class was given the application of a PBL model assisted by e-modules and the control class used a conventional learning model. Data collection techniques used are interviews, documentation, tests, questionnaires, observation. The results of this study indicate the individual completeness test with t count (5.215) > t table (1.753), meaning that individual completeness is fulfilled. Classical completeness test with z count (13.75) > z table (1.96), means that classical completeness is fulfilled. Test the effect of motivation and independent learning on the ability to think geometrically on the determination coefficient test for the value of r square is 0.947, meaning that there is an effect of 94.7%. Test the difference in the average ability to think geometrically sig. (2-tailed) posttest, amounting to 0.000 <0.05 means that there is a significant difference between the geometric thinking abilities of the experimental class and the control class. The conclusion of this study is that after the application of PBL assisted by the e-module the completeness of students' geometric thinking skills is fulfilled, with a classical completeness percentage of 93.75% in the very good category there is an influence of independence. learning and student motivation on students' geometric thinking skills by 94.7%, there is a significant difference in the average students' geometric thinking skills without and with the application of PBL assisted by e-modules and shows an increase in students' geometric thinking skills. the ability to think geometrically with the application of PBL assisted by e-module is higher than students whose learning uses conventional learning models.