

ABSTRAK

Lisa Afriyanti Arjan 2024. “Penerapan Model *Problem Based Learning (PBL)* Dalam Peningkatan Kemampuan Pemahaman Konsep Matematis Siswa Pada Materi Operasi Aljabar” Di Bawah Bimbingan **Dr. Ida Kurnia Waliyanti, S.Si., M.Sc. dan Winda Syam Tonra, S.Pd., M.Pd.**

Penelitian ini bertujuan untuk mengetahui 1) kemampuan pemahaman konsep matematis siswa kelas VII-1 MTs Negeri 1 Kota Tidore sebelum dan setelah diterapkannya model *problem based learning (PBL)* pada materi operasi aljabar. 2) apakah terdapat peningkatan kemampuan pemahaman konsep matematis siswa kelas VII-1 MTs Negeri 1 Kota Tidore pada materi operasi aljabar setelah diterapkannya model *problem based learning (PBL)*. 3) bagaimana peningkatan kemampuan pemahaman konsep matematis siswa kelas VII-1 MTs Negeri 1 Kota Tidore pada materi operasi aljabar setelah diterapkannya model *problem based learning (PBL)*. Penelitian ini menggunakan jenis penelitian eksperimen semu dengan *one grup pretest posttest design*. Sampel penelitian ini adalah siswa kelas VII-1 MTs Negeri 1 Tidore berjumlah 20 siswa. Teknik pengumpulan data pada penelitian ini menggunakan instrumen tes berupa soal uraian sebanyak 2 nomor yang memuat lima indikator KPKM, dan observasi. Data yang diperoleh dianalisis secara deskriptif dan inferensial. Analisis deskriptif untuk menjelaskan gambaran kemampuan pemahaman konsep matematis siswa setelah diterapkan model *problem based learning*. Analisis inferensial untuk menarik kesimpulan berdasarkan hasil pengujian hipotesis penelitian. Hasil penelitian diperoleh: 1) Kemampuan pemahaman konsep matematis siswa kelas VII-1 MTs Negeri 1 Tidore sebelum diterapkan model *problem based learning* terdapat siswa 20 siswa dengan persentase 100% masuk pada kategori rendah. Setelah diterapkan model *problem based learning* terdapat 6 siswa (30%) masuk pada kategori tinggi, 9 siswa (45%) pada kategori sedang, dan 5 siswa (25%) pada kategori rendah. 2) Peningkatan kemampuan pemahaman konsep matematis siswa setelah diterapkan pembelajaran dengan model *problem based learning* pada materi operasi aljabar dalam kategori sedang dilihat dari hasil kualifikasi nilai N-Gain yaitu sebesar 0,52 dan diperkuat oleh hasil uji hipotesis yang menunjukkan bahwa nilai signifikansi kemampuan pemahaman konsep matematis siswa $0,000 < \alpha = 0,05$ maka hipotesis diterima berarti model *problem based learning* secara signifikan dapat meningkatkan kemampuan pemahaman konsep matematis siswa.

Kata kunci: *Problem Based Learning*, Kemampuan Pemahaman Konsep Matematis, Operasi Aljabar.

ABSTRAC

Lisa Afriyanti Arjan 2024. "The Application of the *Problem Based Learning* (PBL) Model in Improving Students' Ability to Understand Mathematical Concepts in Algebraic Operation Material" under the guidance of **Dr. Ida Kurnia Waliyanti, S.Si., M.Sc. dan Winda Syam Tonra, S.Pd., M.Pd.**

This study aims to find out 1) the ability to understand mathematical concepts of students in grade VII-1 MTs Negeri 1 Tidore City before and after the application of the problem based learning (PBL) model on algebraic operation materials. 2) whether there is an improvement in the ability to understand mathematical concepts of students in grades VII-1 MTs Negeri 1 Tidore City in algebraic operation materials after the application of the problem based learning (PBL) model. 3) how to improve the ability of students in grades VII-1 MTs Negeri 1 Tidore City to understand mathematical concepts in algebra operation materials after the application of *the problem based learning (PBL) model*. This study uses a type of pseudo-experimental research with *one group pretest posttest design*. The sample of this study is 20 students in class VII-1 MTs Negeri 1 Tidore. The data collection technique in this study uses a test instrument in the form of 2 number description questions containing five KPKM indicators, and observation. The data obtained were analyzed descriptively and inferentially. Descriptive analysis to explain the description of students' ability to understand mathematical concepts after applying the problem-based learning model. Inferential analysis to draw conclusions based on the results of the research hypothesis testing. The results of the study were obtained: 1) The ability to understand mathematical concepts of students in grade VII-1 MTs Negeri 1 Tidore before the implementation of the problem-based learning model there were 20 students with a percentage of 100% in the low category. After applying the problem-based learning model, there were 6 students (30%) in the high category, 9 students (45%) in the medium category, and 5 students (25%) in the low category. 2) The improvement of students' ability to understand mathematical concepts after applying learning with the problem based learning model on algebraic operation material in the medium category is seen from the results of the N-Gain nilai qualification which is 0.52 and strengthened by the results of the hypothesis test which shows that the significance value of students' ability to understand mathematical concepts is $0.000 < \alpha = 0.05$, the hypothesis is accepted, which means that the problem-based learning model can significantly improve students' ability to understand mathematical concepts.

Keywords: *Problem Based Learning*, Ability to Understand Mathematical Concepts, Algebraic Operations.