ABSTRAK

Majdah Luthfita, NIM 4193311056 (2023). Pengaruh Pendekatan Matematika Realistik Berbantuan *Wolfram Alpha* Terhadap Kemampuan Pemahaman Konsep Matematis Siswa Kelas VIII SMP Muhammadiyah 3 Medan.

Penelitian ini bertujuan untuk mengetahui apakah pengaruh Pendekatan Matematika Realistik berbantuan *Wolfram Alpha* lebih baik daripada pembelajaran biasa terhadap kemampuan pemahaman konsep matematis di kelas VIII SMP Muhammadiyah 3 Medan. Populasi penelitian ini adalah seluruh kelas VIII SMP Muhammadiyah 3 Medan yang terdiri dari 8 kelas. Pengambilan sampel dilakukan dengan cara *cluster random sampling* dan terpilih kelas VIII-Ahmad Syafi'i Maarif sebagai kelas eksperimen yang diajar menggunakan Pendekatan Matematika Realistik Berbantuan *Wolfram Alpha* dan kelas VIII-Amin Rais sebagai kelas kontrol yang diajar menggunakan pembelajaran biasa. Jenis penelitian ini adalah eksperimen semu dengan desain *pretest-posttest*. Sebelum pengujian hipotesis, dilakukan pengujian normalitas dan homogenitas terlebih dahulu, dengan hasil *pretest-posttest* kedua sampel berasal dari populasi yang berdistribusi normal dan homogen. Berdasarkan hasil penelitian yang dilakukan sebanyak dua kali pertemuan pada kelas eksperimen menggunakan Pendekatan Matematika Realistik berbantuan *Wolfram Alpha* diperoleh nilai rata-rata 91,33 dan kelas kontrol menggunakan model pembelajaran biasa diperoleh nilai rata-rata sebesar 77,03. Untuk uji hipotesis digunakan uji t (*independent sample t-test*), dengan $\propto = 0,05$ dan $dk = n_1 + n_2 - 2 = 60$. Dari hasil perhitungan diperoleh nilai t_{hitung} (3,5) $> t_{tabel}$ (1,617) yang berarti H_0 ditolak dan H_a diterima. Dengan demikian dapat disimpulkan bahwa terdapat pengaruh pembelajaran dengan Pendekatan Matematika Realistik (PMR) berbantuan *Wolfram Alpha* dan lebih baik daripada pembelajaran biasa terhadap kemampuan pemahaman konsep matematis siswa di kelas VIII SMP Muhammadiyah 3 Medan.

Kata kunci: **Kemampuan Pemahaman Konsep Matematis, Pendekatan Matematika Realistik, *Wolfram Alpha*, Eksperimen Semu**

ABSTRACT

Majdah Luthfita, NIM 4193311056 (2023). The Effect of Realistic Mathematics Approach Assisted by Wolfram Alpha on the Ability to Understand Mathematical Concepts of Class VIII Students of SMP Muhammadiyah 3 Medan.

This study aims to determine whether the effect of the Realistic Mathematics Approach assisted by Wolfram Alpha is better than the ordinary learning on the ability to understand mathematical concepts in class VIII SMP Muhammadiyah 3 Medan. The population of this study was all class VIII SMP Muhammadiyah 3 Medan which consisted of 8 classes. Sampling was carried out by means of cluster random sampling and class VIII- Ahmad Syafi'i Maarif was selected as the experimental class which was taught using the Realistic Mathematics Approach with Assisted by Wolfram Alpha and class VIII-Amin Rais as the control class which was taught using the ordinary learning. This type of research is a quasi-experimental with a pretest-posttest design. Before testing the hypothesis, normality and homogeneity tests were carried out first, with the pretest-posttest results for both samples coming from populations that were normally distributed and homogeneous. Based on the results of research conducted in two meetings in the experimental class using the Realistic Mathematics Approach assisted by Wolfram Alpha, an average value of 91.33 was obtained and the control class used the expository learning model with an average value of 77.03. To test the hypothesis used the t test (independent sample t-test), with $\propto = 0,05$ and dk = $n_1 + n_2 - 2 = 60$. From the calculation results obtained the value t_{count} (3,5) > t_{table} (1,617) means that H_0 is rejected and H_a is accepted. Thus it can be concluded that there is an effect of learning using the Realistic Mathematics Approach assisted by Wolfram Alpha and is better than the ordinary learning on students' ability to understand mathematical concepts in class VIII SMP Muhammadiyah 3 Medan.

Keywords: **Concept Understanding Ability, Realistic Mathematics Approach Wolfram Alpha, Quasi Experiment**