

ABSTRAK

Rachel Wandira Limbong, NIM 4192331001 (2023) , Pengaruh Model Pembelajaran *Problem Based Learning* (PBL) Terhadap Hasil Belajar Kimia Siswa pada Materi Larutan Penyangga

Penelitian ini bertujuan untuk : Mengetahui pengaruh pembelajaran model *Problem Based Learning* terhadap hasil belajar dan untuk mengetahui ranah kognitif mana yang paling berkembang melalui penerapan model pembelajaran *Problem Based Learning* pada materi larutan penyangga di kelas XI MIPA. Sampel diambil secara acak sebanyak 36 siswa di kelas XI MIPA SMA Negeri 5 Medan. Pengambilan sampel dilakukan dengan teknik *random sampling*. Instrumen yang digunakan pada penelitian ini adalah instrument tes. Instrument tes dilakukan sebanyak 2 kali yaitu pre-test dan post-test. Instrument tes yang digunakan adalah tes objektif dengan jumlah soal sebanyak 30 butir untuk menguji tingkat kemampuan kognitif siswa yaitu C1 (pengetahuan), C2 (pemahaman), C3 (pengaplikasian), dan C4 (analisis). Hasil PBL menunjukkan bahwa terjadinya peningkatan nilai tes. Dimana nilai rata – rata pretes hanya sebesar 62,94 sedangkan rata – rata nilai post-test sebesar 80,42. Data terlebih dahulu di uji normalitasnya, dimana hasil yang didapat kelas tersebut berdistribusi normal. Pada pengujian data melalui program SPSS 22,0 for Windows, jika $\text{sig}(2\text{-tailed}) < 0,05$, maka H_a diterima. Sedangkan jika $\text{sig}(2\text{-tailed}) > 0,05$, maka H_a ditolak. Dari hasil pengujian untuk hipotesis pertama ,dimana nilai sig yang diperoleh lebih kecil dari 0,05 yaitu 0,00,sehingga dapat di simpulkan bahwa hipotesis pertama diterima. Artinya terdapat peningkatan hasil belajar dengan menggunakan model *Problem Based Learning* pada materi larutan penyangga. Dari hasil pengujian untuk hipotesis kedua ,dimana nilai sig yang diperoleh lebih kecil dari 0,05 yaitu 0,00,sehingga dapat di simpulkan bahwa hipotesis kedua diterima. Artinya rata-rata hasil belajar siswa yang menggunakan pendekatan model *Problem Based Learning* (PBL) jauh lebih tinggi dari 75. Berdasarkan hal tersebut maka pembelajaran dengan menggunakan model *Problem Based Learning* mampu meningkatkan pengetahuan materi larutan penyangga pada siswa kelas XI MIPA SMA Negeri 5 medan.

Kata kunci: *Problem Based Learning (PBL), Larutan Penyangga, Kemampuan Kimia*

ABSTRACT

Rachel Wandira Limbong, NIM 4192331001 (2023) , The Effect of *Problem Based Learning* (PBL) Learning Models on Student Chemistry Learning Outcomes in Buffer Solution Material

This study aims to: Determine the effect of the Problem Based Learning model on learning outcomes and to determine which cognitive domain is most developed through the application of the Problem Based Learning model to buffer solution material in class XI MIPA. Samples were taken randomly as many as 36 students in class XI MIPA SMA Negeri 5 Medan. Sampling was done by random sampling technique. The instrument used in this research is the test instrument. The test instrument was carried out 2 times, namely pre-test and post-test. The instrument used was an objective test with a total of 30 questions to test the level of students' cognitive abilities, namely C1 (knowledge), C2 (understanding), C3 (application), and C4 (analysis). PBL results show that there is an increase in test scores. Where the average pre-test score is only 62.94 while the average post-test value is 80.42. The data is tested for normality first, where the results obtained for the class are normally distributed. In testing the data through the SPSS 22.0 for Windows program, if sig(2-tailed) <0.05, then H_a is accepted. Meanwhile, if sig(2-tailed) > 0.05, then H_a is rejected. From the test results for the first hypothesis, the sig value obtained is smaller than 0.05, namely 0.00, so it can be concluded that the first hypothesis is accepted. This means that there is increasing learning outcomes by using the Problem Based Learning model on buffer solution material. From the test results for the second hypothesis, where the sig value obtained is smaller than 0.05, namely 0.00, so it can be concluded that the second hypothesis is accepted. This means that the average the learning outcomes of students using the Problem Based Learning (PBL) model approach were much higher than 75. Based on this, learning using the Problem Based Learning model was able to increase knowledge of buffer solution material in class XI MIPA students of SMA Negeri 5 Medan.

Keywords: *Problem Based Learning* (PBL), Buffer Solution, Chemistry Ability