

ABSTRAK

Imelda Febriani Gea, NIM 4221131012 (2022). Pengaruh Model *Problem Based Learning* Berbasis Literasi Sains terhadap Keaktifan dan Hasil Belajar Siswa pada Materi Laju Reaksi.

Penelitian ini bertujuan untuk mengetahui pengaruh model *Problem Based Learning* berbasis literasi sains terhadap keaktifan dan hasil belajar siswa pada materi laju reaksi. Penelitian ini merupakan penelitian eksperimen semu dengan pendekatan kuantitatif. Penelitian ini telah dilaksanakan di SMA Negeri 17 Medan dengan menggunakan *pretest and posttest control group design*. Sampel pada penelitian ini terdiri dari dua kelas yaitu kelas XI-C sebanyak 36 siswa sebagai kelas eksperimen yang dibelajarkan menggunakan model *Problem Based Learning* berbasis literasi sains dan kelas XI-D sebanyak 35 siswa sebagai kelas kontrol yang dibelajarkan menggunakan model pembelajaran konvensional berupa ceramah, tanya jawab, dan pemberian tugas yang ditentukan dengan menggunakan teknik *purposive sampling*. Keaktifan siswa diukur melalui skor rata-rata yang diperoleh dari dua observer dengan nilai rata-rata keaktifan siswa pada kelas eksperimen sebesar 85,38 dan pada kelas kontrol sebesar 75,82. Sedangkan hasil belajar siswa diukur melalui *pretest-posttest* dengan nilai rata-rata hasil belajar siswa pada kelas eksperimen sebesar 45,14 (*pretest*) – 84,31 (*posttest*) dan pada kelas kontrol sebesar 41,00 (*pretest*) – 76,86 (*posttest*). Uji hipotesis pertama (keaktifan siswa) dengan uji *independent sample t-test* menyatakan nilai hipotesis pertama didapatkan $t_{hitung} = 7,49$ dan diketahui $t_{tabel} = 1,99$ maka $t_{hitung} > t_{tabel}$ artinya terdapat pengaruh model *Problem Based Learning* berbasis literasi sains terhadap keaktifan siswa pada materi laju reaksi. Pada uji hipotesis kedua (hasil belajar siswa) dengan uji *independent sample t-test* menyatakan nilai hipotesis kedua didapatkan $t_{hitung} = 5,42$ dan diketahui $t_{tabel} = 1,99$ maka $t_{hitung} > t_{tabel}$ artinya terdapat pengaruh model *Problem Based Learning* berbasis literasi sains terhadap hasil belajar siswa pada materi laju reaksi. Sebagai analisis tambahan, perhitungan N-Gain menunjukkan bahwa kelas eksperimen memperoleh skor 0,7 (kategori tinggi), sedangkan kelas kontrol memperoleh skor 0,6 (kategori sedang), sehingga peningkatan hasil belajar pada kelas eksperimen lebih tinggi dibandingkan kelas kontrol. Selanjutnya, pada uji hipotesis ketiga (korelasi antara keaktifan dan hasil belajar siswa), didapatkan $r_{hitung} = 0,697$ dan diketahui $r_{tabel} = 0,329$ maka $r_{hitung} > r_{tabel}$ artinya terdapat korelasi positif yang signifikan antara keaktifan dan hasil belajar siswa dengan penerapan model *Problem Based Learning* berbasis literasi sains pada materi laju reaksi. Hubungan antara kedua variabel memiliki korelasi yang tinggi. Selain itu, keaktifan siswa memberikan kontribusi sebesar 48,58% dengan hasil belajar siswa.

Kata kunci: keaktifan siswa, hasil belajar siswa, *Problem Based Learning*, literasi sains, laju reaksi.

ABSTRACT

Imelda Febriani Gea, NIM 4221131012 (2022). The Effect of Scientific Literacy-Based Problem Based Learning Model on Student Activeness and Learning Outcomes on Reaction Rate Material.

This study aims to determine the effect of the Problem Based Learning model based on scientific literacy on student activity and learning outcomes on the reaction rate material. This study is a quasi-experimental study with a quantitative approach. This study was conducted at SMA Negeri 17 Medan using a pretest and posttest control group design. The sample in this study consisted of two classes, namely class XI-C with 36 students as the experimental class taught using the Problem Based Learning model based on scientific literacy and class XI-D with 35 students as the control class taught using conventional learning models in the form of lectures, questions and answers, and assignments determined using a purposive sampling technique. Student activity was measured through an average score obtained from two observers with an average value of student activity in the experimental class of 85.38 and in the control class of 75.82. While student learning outcomes were measured through pretest-posttest with an average value of student learning outcomes in the experimental class of 45.14 (pretest) - 84.31 (posttest) and in the control class of 41.00 (pretest) - 76.86 (posttest). The first hypothesis test (student activity) with an independent sample t-test stated that the first hypothesis value was obtained $t_{count} = 7.49$ and it was known that $t_{table} = 1.99$, so $t_{count} > t_{table}$, meaning there was an influence of the Problem Based Learning model based on scientific literacy on student activity on the reaction rate material. In the second hypothesis test (student learning outcomes) with an independent sample t-test, the second hypothesis value was obtained $t_{count} = 5.42$ and it was known that $t_{table} = 1.99$, so $t_{count} > t_{table}$, meaning there was an influence of the Problem Based Learning model based on scientific literacy on student learning outcomes on the reaction rate material. As an additional analysis, the N-Gain calculation showed that the experimental class obtained a score of 0.7 (high category), while the control class obtained a score of 0.6 (medium category), so that the increase in learning outcomes in the experimental class was higher than the control class. Furthermore, in the third hypothesis test (correlation between student activity and learning outcomes), $r_{count} = 0.697$ was obtained and $r_{table} = 0.329$, then $r_{count} > r_{table}$ means there is a significant positive correlation between student activity and learning outcomes with the application of the Problem Based Learning model based on scientific literacy on the reaction rate material. The relationship between the two variables has a high correlation. In addition, student activity contributes 48.58% to student learning outcomes.

Keywords: student activity, student learning outcomes, Problem Based Learning, scientific literacy, reaction rate.