

ABSTRAK
**PENGARUH PEMBELAJARAN BERDIFERENSIASI BERBASIS MODEL
PROBLEM BASIS LEARNING TERHADAP PENINGKATAN
PENALARAN MATEMATIS SISWA DI SMAS AL-WASLIYAH 1 MEDAN**

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Penelitian ini bertujuan untuk mengetahui pengaruh pembelajaran berdiferensiasi berbasis model *problem based learning* terhadap kemampuan penalaran matematis siswa di SMAS Al-Wasliyah 1 Medan. Sampel penelitian siswa kelas XI IPA yang berjumlah 30 siswa. Teknik pengambilan sampel menggunakan *purposive sampling*. Jenis penelitian ini adalah *Pre-Experimental Desain (nondesain)*. Analisis data dalam penelitian ini adalah uji statistik deskriptif, uji normalitas, uji homogenitas, dan uji hipotesis. Pengujian hipotesis menggunakan uji N-Gain dan uji t untuk melihat nilai signifikansi pembelajaran berdiferensiasi berbasis model *problem based learning* berpengaruh positif terhadap kemampuan penalaran matematis siswa. Hasil pengujian data diperoleh hasil uji t dengan nilai Sig.(2-tailed) diperoleh nilai signifikansi $0,000 < 0,05$ dan diperoleh $t_{hitung} > t_{tabel}$ yaitu $7,554 > 2,048$ menunjukkan berpengaruh positif terhadap penalaran matematis siswa sedangkan dilihat dari nilai rata-rata (mean) N-Gain bahwa pembelajaran berdiferensiasi berbasis model *problem based learning* berpengaruh terhadap kemampuan penalaran matematis siswa dengan perolehan nilai peningkatan 0,4575 dengan persentase 45,7501. Hal ini dapat disimpulkan bahwa besar persen yang dihasilkan pembelajaran berdiferensiasi berbasis model *problem based learning* terhadap kemampuan penalaran matematis siswa SMAS Al-Wasliyah 1 Medan sebesar 45% termasuk dalam kategori sedang.

Kata kunci: Pembelajaran berdiferensiasi, model *problem based learning*, dan penalaran matematis siswa

ABSTRACT
THE EFFECT OF DIFFERENTIATED LEARNING BASED ON
PROBLEM-BASED LEARNING MODEL ON STUDENTS'
MATHEMATICAL REASONING ABILITY IN SMAS AL-WASLIYAH 1
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This study aims to determine the effect of differentiated learning based on *problem based learning* models on students' mathematical reasoning abilities at SMAS Al-Wasliyah 1 Medan. The research sample was 30 students of class XI IPA. The sampling technique used *purposive sampling*. This type of research is *Pre-Experimental Design (non-design)*. Data analysis in this study is descriptive statistical test, normality test, homogeneity test, and hypothesis test. Hypothesis testing uses the N-Gain test and t-test to see the significance value of differentiated learning based on the *problem based learning* model has a positive effect on students' mathematical reasoning abilities. The results of the data testing obtained the results of the t-test with a Sig. (2-tailed) value obtained a significance value of 0.000 <0.05 and obtained $t_{count} > t_{table}$, namely $7.554 > 2.048$ indicating a positive effect on students' mathematical reasoning, while seen from the average (mean) N-Gain value that differentiated learning based on the *problem based learning* model has an effect on students' mathematical reasoning abilities with an increase in value of 0.4575 with a percentage of 45.7501. It can be concluded that the percentage of the results of differentiated learning based on the *problem based learning* model on the mathematical reasoning abilities of students at SMAS Al-Wasliyah 1 Medan is 45%, which is included in the moderate category.

Keywords: Differentiated learning, *problem based learning* model, and students' mathematical reasoning