

**PENGARUH PENDEKATAN DIFERENSIASI DALAM *INQUIRY BASED
LEARNING* TERHADAP KEMAMPUAN PENALARAN ILMIAH DAN
PENGUASAAN KONSEP USAHA DAN ENERGI SISWA SMA**

TESIS

diajukan untuk memenuhi sebagian syarat untuk memperoleh gelar Magister
Pendidikan Fisika



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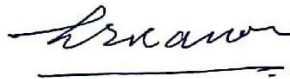
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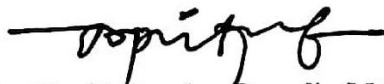
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ABSTRAK

Penelitian ini bertujuan untuk menguji pengaruh pendekatan diferensiasi dalam Inquiry based Learning terhadap kemampuan penalaran ilmiah dan penguasaan konsep siswa. Penelitian ini menggunakan metode eksperimental dengan quasi-experiment design. Populasi dalam penelitian ini adalah siswa kelas X MIPA di salah satu SMA Kab Tangerang. Sampel penelitian terdiri dari X MIPA 2 sebagai kelas eksperimen dan X MIPA 1 sebagai kelas kontrol. Instrumen pengukuran kemampuan penalaran ilmiah siswa adalah butir soal dengan reliabilitas 0,86 (sangat bagus), sedangkan butir soal untuk mengukur penguasaan konsep memiliki reliabilitas 0,73 (bagus). Tes diagnostik dilakukan untuk memperoleh data gaya belajar siswa yang digunakan sebagai acuan melakukan diferensiasi. Hasil penelitian menunjukkan partisipasi siswa dengan diferensiasi dalam Inquiry based Learning lebih tinggi daripada tanpa diferensiasi. Tes kemampuan penalaran ilmiah dan penguasaan konsep menghasilkan adanya perbedaan yang signifikan antara kelas dengan diferensiasi dan tanpa diferensiasi. Pendekatan diferensiasi terukur berpengaruh pada kategori sedang terhadap kemampuan penalaran ilmiah siswa dan berpengaruh pada kategori sangat besar terhadap penguasaan konsep siswa. Meskipun hasil penelitian menunjukkan tidak adanya perbedaan kemampuan penalaran ilmiah maupun penguasaan konsep antar siswa kelompok kinestetik dan auditori di kedua kelas, namun terlihat adanya perbedaan antar siswa kelompok visual kedua kelas. Pendekatan diferensiasi dalam Inquiry based Learning berpengaruh terhadap kemampuan penalaran ilmiah dan penguasaan konsep karena mampu melibatkan partisipasi siswa yang lebih tinggi daripada Inquiry based Learning tanpa pendekatan diferensiasi. Penerapan pendekatan diferensiasi kedepannya sebaiknya memperhatikan aspek instruksi dan feedback pembelajaran

Kata Kunci: Pendekatan Diferensiasi; Penalaran Ilmiah; Penguasaan Konsep

ABSTRACT

This study aims to examine the effect of differentiated instruction in Inquiry based Learning on students' scientific reasoning and conceptual understanding. This study used a experimental with quasi-experiment design. The population in this study were 10th grade students of MIPA in one of the high schools in Tangerang Regency. The research sample consists of X MIPA 2 as the experimental class and X MIPA 1 as the control class. The instrument for measuring students' scientific reasoning is an aitem with a reliability of 0,86 (very good), while an item to measure conceptual understanding has a reliability of 0,73 (good). The diagnostic tests were held to know students' learning styles that were used as a desire to differentiate. The results show that the participation of students with differentiated instruction in Inquiry based Learning is higher than without differentiated instruction. Test of scientific reasoning and conceptual understanding shows the significant differences between classes with differentiation and without differentiation. Differentiated instruction affects the medium category on students' scientific reasoning and the very large category on students' conceptual understanding. Although the results of the study show that there are no significant differences in scientific reasoning ability or conceptual understanding in kinesthetic and auditory group students in two classes, there are differences between the visual group in the two classes. Differentiated instruction in Inquiry based Learning affects scientific reasoning and conceptual understanding because it was able to involve higher student participation than Inquiry based Learning without differentiated instruction. The implementation of differentiated instruction in the future should pay attention to instruction and learning feedback.

Keywords: Differentiated Instruction; Scientific Reasoning Ability; Conceptual Understanding

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