

**ANALISIS SCIENTIFIC REASONING DALAM PENERAPAN
PENDEKATAN LEVELS OF INQUIRY PADA POKOK BAHASAN
OPTIK**

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ABSTRAK

Penelitian ini dilatarbelakangi oleh permasalahan rendahnya *scientific reasoning* siswa pada mata pelajaran Fisika, khususnya pada aspek *proportional reasoning*, *correlational reasoning*, *control of variabel*, *causal reasoning*, *deductive reasoning*, dan *hypothetical deductive reasoning*. Permasalahan tersebut didasarkan pada hasil studi literatur dan hasil studi pendahuluan. Rendahnya *scientific reasoning* siswa tersebut dikarenakan dalam pembelajaran kurang memfasilitasi siswa dalam melatih kemampuan berpikir dan kemampuan melakukan penyelidikan serta kurang diberikannya soal-soal yang melatih keterampilan berpikir tingkat tinggi. Oleh karena itu dilakukan penelitian mengenai penerapan metode *levels of inquiry* untuk mengetahui peningkatan *scientific reasoning* siswa SMP setelah diterapkannya metode tersebut. Sampel penelitian ini adalah 40 orang siswa kelas VIII F yang terdapat disalah satu SMP Negeri di Kota Bandung. Sampel penelitian tersebut diambil dengan menggunakan teknik *purposive sampling*. Metode penelitian yang digunakan adalah *kuantitatif* dengan desain penelitian yaitu *one-group pretest-posttestdesign*. Penelitian ini mengacu pada aspek *scientific reasoning* yaitu *proportional reasoning*, *correlational reasoning*, *control of variabel*, *causal reasoning*, *deductive reasoning*, dan *hypothetical deductive reasoning*. Instrumen yang digunakan untuk mengukur *scientific reasoning* siswa adalah 24 soal pilihan ganda bertingkat dua tentang materi optik. Hasil penelitian ini menunjukkan bahwa *scientific reasoning* siswa mengalami peningkatan setelah diterapkan pendekatan *levels of inquiry* sebesar 52,71% dan nilai *effect size* sebesar 3,9 dengan kategori besar.

Kata Kunci : *scientific reasoning*, *levels of inquiry*

ANALYSIS SCIENTIFIC REASONING ON IMPLEMENTATION LEVELS OF INQUIRY APPROACH IN OPTICS

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ABSTRACT

This research background by the low of scientific reasoning student on physics subject especially on the aspect of proportional reasoning, correlational reasoning, control of variabel, causal reasoning, deductive reasoning, and hypothetical deductive. It could be seen from the result of literature study and preliminary study. The low of scientific reasoning student was caused by physics learning has not facilitated student in training thinking ability and not given question about the training of scientific reasoning. Therefore, the purpose of this research was to knowing increase scientific reasoning after applied levels of inquiry. Sample of this research were 40 students of VIII F in one of junior high school in Bandung. This sample was taken with purposive sampling. The research method is quantitative and design research is one group pretest-posttest. This research is refer to proportional reasoning, correlational reasoning, control of variabel, causal reasoning, deductive reasoning, dan hypothetical deductive reasoning. Scientific reasoning instrument consist 24 two tier multiple choice about optics. Based on analyzed result showed that scientific reasoning was increased after implementing levels of inquiry as big as 52,71% and the effect size was 3,9 with large category, this means that the implementation of levels of inquiry gave a large contribution to improving scientific reasoning.

Keyword : *scientific reasoning, levels of inquiry*