

Sela Martianingsih. 2021. *Analisis Penalaran Ilmiah Siswa Dalam Menyelesaikan Soal Uraian Pada Materi Perubahan Fisika dan Kimia*. Skripsi, Program Studi Pendidikan IPA, Fakultas Ilmu Pendidikan, Universitas Trunojoyo Madura. Pembimbing : Laila Khamsatul Muharrami.

ABSTRAK

Penelitian ini bertujuan untuk mengetahui penalaran ilmiah siswa dalam menyelesaikan soal uraian pada materi perubahan fisika dan kimia. Penelitian ini merupakan penelitian *mixed methods* dengan metode *explanatory sequential design*. Penelitian ini dilakukan di MTs. Tarbiyatul Islam Soko Tuban pada semester genap tahun ajaran 2020/2021 dengan populasi semua siswa kelas VII. Teknik pengambilan sampel menggunakan *random sampling* dengan jumlah sampel sebanyak 15 siswa kelas VII. Instrumen penelitian yang digunakan meliputi lembar tes penalaran ilmiah dan pedoman wawancara. Teknik analisis data meliputi analisis uji instrument penelitian, analisis data kuantitatif tes penalaran ilmiah siswa serta analisis data kualitatif menggunakan model Miles dan Huberman. Berdasarkan hasil penelitian dapat disimpulkan bahwa: (1) rata-rata siswa memiliki penalaran ilmiah kategori rendah; (2) Tingkat penalaran ilmiah siswa pada 6 indikator yang dikembangkan oleh Lawson menunjukkan: penalaran konservasi kategori NR (*No Realitionsip*), penalaran probabailistik kategori *Intutive*, penalaran korelasi kategori NR (*No Realitionsip*), penalaran proporsional kategori *Intutive*, pada penalaran hipotesis deductive kategori *proposed explanation*, dan penalaran kontrol variabel siswa dikategori *Intutive*; (3) Faktor yang mempengaruhi penalaran ilmiah siswa adalahh metode yang digunakan guru dalam mengajarkan materi masih menggunakan metode ceramah.

Kata Kunci : Penalaran Ilmiah Siswa, Lawson, perubahan fisika dan kimia.

Sela Martianingsih. 2021. *Analysis of Student's Scientific Reasoning in Solving Explanation Problems on the Material of Physical and Chemical Changes. Thesis, Science Education Study Program, Faculty of Education, Trunojoyo University of Madura. Advisor is: Laila Khamsatul Muharrami.*

ABSTRACT

This study aims to find out the scientific reasoning of students in solving description problems on the material of physical and chemical changes. This research is a mixed methods research with explanatory sequential design method. This research was conducted in MTs. Tarbiyatul Islam Soko Tuban in the even semester of the 2020/2021 academic year with a population of all seventh grade students. The sampling technique used random sampling with a total sample of 15 students of class VII. The research instruments used include scientific reasoning test sheets and interview guidelines. Data analysis techniques include analysis of research instrument tests, quantitative data analysis of students' scientific reasoning tests and qualitative data analysis using the Miles and Huberman's model. Based on the results of the study, it can be concluded that: (1) the average student has a low category of scientific reasoning; (2) The level of students' scientific reasoning on 6 indicators developed by Lawson shows: conservation reasoning in the NR (No Realitionsip) category, probabailistic reasoning in the Intutive category, correlation reasoning in the NR (No Realitionsip) category, proportional reasoning in the Intutive category, in deductive hypothesis reasoning in the proposed category explanation, and student variable control reasoning in the Intuitive category; (3) The factors that influence students' scientific reasoning are the methods used by teachers in teaching the material still using the lecture method.

Keywords: Student Scientific Reasoning, Lawson, changes in physics and chemistry