

THE NATURE OF SCIENCE INSTRUCTION WITH A DIRECT REFLECTIVE APPROACH: "HESS" AND "THERMODYNAMIC LAWS"

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Abstract

The purpose of the present study is to examine the effect of the nature of science instruction based on direct reflective approach on the level of student's understanding on the Hess Law and Thermodynamic Laws and on their beliefs about the nature of science. In this study, pretest-posttest control group design was used. The research was carried out with 50 students studying in two different classes in a Vocational and Technical Anatolian High School in Trabzon. While the experimental group students were taught with activities based on the direct reflective approach, the control group was taught with the traditional approach. Chemistry and Energy Achievement Test and Views of Nature of Science (VNOS-C) interview were used to collect data. The results showed that students have a lot of alternative conceptions about the nature of science and chemistry concepts under investigation and that the experimental group was more successful than the control group.

Keywords: The Nature of Science, Direct Reflective Approach, Thermodynamic, Hess Law.