

Thanyaporn Pakdee 2015: Development of Tenth Grade Students' Understanding of the Nature of Science on Properties of Elements and Compounds through Explicit and Reflective Approach. Master of Education (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Assistant Professor Chatree Faikhamta, Ph.D. 216 pages.

This action research aimed to examine the effective ways to implement explicit and reflective learning approach integrated within the topic of properties of elements and compounds for developing students' understanding of the nature of science (NOS) and investigate the development of students' understanding of NOS. The participants were 21 students who studied advanced chemistry in 2014 academic year. The researcher gathered the data by using teacher's reflective journals, students' reflective journals, and open-ended questionnaire with semi-structured interviews. These data were analyzed through inductive process. The research findings indicated that after explicit and reflective approach, the majority of students held adequate understandings in all aspects of NOS, especially in observation versus inference and myths of scientific method. The results showed that the effective ways to implement an explicit and reflective instruction were; 1) teacher should have issues for students to discuss aspects of NOS, 2) teacher should use nonintegrated with integrated NOS learning activities, 3) teacher should carefully blend NOS with science contents, 4) teacher should have students present and discuss NOS from their activities and integrated NOS all of steps, and 5) teacher should provide good action plans for teaching NOS.

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Student's signature

Thesis Advisor's signature