

Khwanying Tipkaew 2012: Teaching and Learning the Nature of Science: A Case Study of a Demonstration School. Master of Education (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Assistant Professor Pongprapan Pongsophon, Ph.D. 171 pages.

The aims of this research were 1) to study teachers' Views of nature of science and practice of teaching nature of science and 2) to investigate the ninth grade students' views of nature of science (NOS) after formal instruction at a demonstration school in Bangkok. This project is a qualitative study and employs a case study as a research design which took six months in the field. The participants included two science teachers and two classes of grade 9 students (n=98). The data gathering techniques/tools included participant observations, interviewing teachers and students and probing students' view of nature of science by View of Nature of Science (Form C) developed by Lederman *et al.* Data was analyzed by content and inductive analysis. To increase trustworthiness, data triangulation was employed.

The results indicate that both science teachers generally employed lecturing in their teaching. The lessons were influenced by national test and university examination. One teacher occasionally used a demonstration. They notably put emphasis on the content rather than nature of science. In regard to the view of nature of science, the teachers held Transitional Views on all aspects of nature of science except 1) Creative and Imaginative Nature of Scientific Knowledge 2) Theory-Laden Nature of Scientific Knowledge 3) Observation, Inference and Theoretical Entities in Science 4) Social and cultural Embeddedness of Scientific Knowledge and 5) Tentative Nature of Scientific Knowledge that they held the Informed Views. The majority of the students held Transitional Views on all aspects except 1) Scientific Theories and Laws 2) Myth of Scientific Method and 3) Social and cultural Embeddedness of Scientific Knowledge that they held the Uninformed Views. To get the whole picture of the individual students' view of nature of science, corresponding scores were given to all categories of NOS views making a total score of 30. It found that 47 students or 47.97 percent (N=98) passed the test at the criterion of 60 percent.

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Student's signature

Thesis Advisor's signature