

Werapan Jaruanlikitkawin 2010: Developing Primary Science Teachers for Teaching “Processes that Shape the Earth” Integrating “Nature of Science and Technology” in Learning Reform by Learner-Centered Approach. Master of Arts in Teaching, Major Field: Teaching Science, Department of Education. Thesis Advisor: Mr. Pongprapan Pongsophon, Ph.D. 215 pages.

The objectives of this study were to study 1) current practice, problems, and needs of teachers about teaching processes that shape the earth and nature of science and technology (NOS), 2) the development of a workshop of teachers’ needs, 3) the results from the workshop. The study of the workshop is divided into three phases. The first phase, needs assessment, was a survey research conducted in the first semester of the 2008 academic year which aimed to study primary science teachers’ current practice, problems, and needs in teaching Processes that Shape the Earth and NOS. There were 135 science teachers from the schools in Nonthaburi who responded to the questionnaire which was consisted of five-level rating scale open-ended questions and in-depth interviews. The quantitative data was analyzed by counting frequencies and calculating for percentages, while the qualitative data analyzed by coding and categorization. Three teachers were selected for in-depth interviews. The second phase, intervention design and implementation, was the development of a workshop for teachers’ needs workshop and teaching demonstration were adopted as professional development strategies. 11 teachers participated in. The instrument was an opinion questionnaire about workshops analyzed by counting frequencies. The third phase, evaluation, is the followed up of the participating teachers. The research instruments were the NOS questionnaire, the observation of teaching, and the after teaching interview. The data analyzed by coding, counting frequencies, content analysis, and categorization.

The results indicated that: From the first phase 1) The teachers introduced and summarized the class by questioning. The experimentation and the exploration were used as learning activities. Sometimes, teachers could not introduce and summarize the lesson because of the limitation of time, so reading and answering the questions from books were used instead. 2) The shortage of learning material is the problem. From the interviews, teachers’ misconception of NOS was the obstacle of integrating NOS into teaching. Teachers wanted to develop their teaching, NOS understanding and constructing teaching material and media. 3) After the workshop, the third phase, most of the teachers had a better understanding of NOS. Teaching processes that shape the earth has the various hands on/mind on activities, and it corresponds with NOS. Teaching strategies have become more learner-centered.

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Thesis Advisor’s signature