Pabi Maya Das 2014: Enhancing Bhutanese Students' Views of Nature of Science in Matter and Its Composition and Gas Laws 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. 164 pages.

This study aimed to enhance Bhutanese ninth grade students' views of nature of science (NOS) through explicit and reflective approach. This study was divided into two phases. In first phase, cross-sectional survey aimed to explore Bhutanese ninth grade students' views of NOS. Stratified random sampling technique was used to generate the representative of the population. The adapted version of Students Understanding of Science and Scientific Inquiry (SUSSI) was used as a research tool. A total of 389 students from middle secondary and higher secondary schools from eastern, western, southern and central regions of Bhutan took part in this study. The results indicated that the majority of students held inadequate views of NOS in all aspects. Interestingly, none of the students held informed in scientific laws and scientific theories. In social and cultural embeddedness the majority of the students held naïve views.

The second phase of the study aimed to enhance students' views NOS through explicit and reflective approach. Seven aspects of NOS were integrated in chemistry content in Matter and Its Composition and Gas laws for a time span six weeks in one ninth grade class that comprised 18 students. A qualitative research approach was used as a research methodology. The same questionnaire in the first phase, semi-structured interviews, classroom observations, students' journals and assignments were used as data sources. Data were analyzed through inductive processes, to search and come up with patterns and themes. Students' views of NOS from pre-instruction and post-instruction questionnaire were categorized into naïve, transitional and informed. The results indicated that students' views of NOS at the end of the intervention had developed. However, the development was not parallel in all the aspects. It was also seen that NOS specific pedagogical knowledge and subject knowledge play an important role in teachers' ability to enhance students' views of NOS. The study has an implication for the curriculum developers and teacher professional developers to explicitly emphasize NOS in science curriculum as NOS is one of the key components of the scientific literacy.

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