

Krissana Pokpun 2011: The Development of Grade 11 Students' Scientific Conceptions on Astronomy and Scientific Attitudes through Model-based Learning. Master of Education (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Mr. Chatree Faikhamta, Ph.D. 196 pages.

This study was classroom action research. The purpose of the study were to investigate the method of learning management through Model-based learning and to study the Scientific conceptions on Astronomy and Scientific Attitudes of Grade 11 students.

The subject group of this study was 40 of 11<sup>th</sup> grade students of Humanities and Social Sciences program from a high school in Bangkok in the first semester of academic year 2010. The tools for the research were a concept test on Astronomy conceptions consisting of 10 open-ended questions. The tests were used to gather pre and post test. As well as the Scientific Attitude test, the student's journals, classroom observation field notes and post learning notes. The data from content of the conceptions test and Scientific Attitude test were analyzed and categorized. The data from students' journals, classroom observation field notes and post learning notes were also analyzed.

The results of this study found that , learning process about the activities according to Model-based learning should be various such as questioning to survey the conceptions and to get background knowledge, learning by doing, self investing using data representation created to build model. Used Model to present phenomena and model evaluation. Learning process through model-based learning could develop the students' Scientific conceptions about Astronomy, Universe, Galaxy, stars and Stellar evolution and Solar system which was increasing. Although there was Misunderstanding about Nebular, Dwarf planet and Solar wind. The last Learning process through model-based learning could develop the students' Scientific Attitude as follows: The Scientific Attitude of majority of students was high, ranged from 80 to 100 (50% of all students) and it indicated that most of students' Scientific Attitude in the areas of learning motivation, intention, endurance, creative thinking, and honesty was very high and the Scientific Attitude of the large number of students in the areas of being active and open-minded was high.

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Student's signature

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Thesis Advisor's signature

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