

Sornwanee Lathae 2010: The Development of Scientific Conception on Biodiversity of Grade 10 Students by Using Constructivist Teaching Approach and Local Learning Resources. Master of Education (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Mr. Pongprapan Pongsophon, Ph.D. 248 pages.

The purposes of this research were to study 1) the current situation of teaching and learning in the topic of Biodiversity 2) student conception of Biodiversity after instruction and 3) the effect of constructivist teaching approach and the use of local learning resources on student conception in the topic of Biodiversity. Case study was a research design. The project was divided into two phases; 1) need assessment and 2) implementing and evaluating the learning unit. In the first phase, participants were a biology teacher from one secondary school in Sisaket Province and their grade 10 students after receiving for instruction on biodiversity learning unit in the academic year 2008. In the second phase, participants were a same teacher in the first phase and their grade 10 students in the academic year 2009. The students were explored their ideas by a concept test. Data was analyzed by frequency, percentage and content analysis; categorizing their responses into five conceptual hierarchies adopted from Westbrook and Marek (1992) and Lempe and Staver (1995).

The results were 1) the teachers commonly employed lecturing in their instruction. They used textbooks and supplementary sheets as instructional media. In terms of measurement and evaluation, the teachers used paper based tests the most. Students and teachers though Kingdom of Living Organisms was the most difficult topic to learn. The shortage of time, visual aids, instructional media and teachers' over workload reportedly the serious constraints in the instruction. Most of students asked to study nature from their local learning resources. 2) the majority of students had partial understanding in many topics; Definition and Component of Biodiversity, Classification, Origin of Life, Kingdom Plantae, Kingdom Animalia and Loss of Biodiversity. In particular, they had partial understanding with specific misconception in Scientific Name, scientific conception in Biodiversity of Thailand and no conception in the topics, Kingdom Monera, Protista and Fungi. 3) after studying by the Biodiversity Learning Units, the students could develop the scientific conception; especially, Definition and Component of Biodiversity, Classification, Origin of Life, Kingdom Protista, Fungi, Plantae and Animalia, Biodiversity of Thailand and Loss of Biodiversity.

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Thesis Advisor's signature