

Surisa Waisaen 2012: The Study of Teaching and Learning on Acid-Base Solution using Inquiry Based Approach with Questioning and Concept Mapping to Promote Grade 7 Students' Critical Thinking Skills. Master of Education (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Associate Professor Sunan Sung-ong, Ph.D. 184 pages.

The objectives of this research were 1) to create lesson plans developing critical thinking skills of grade 7 student using inquiry based approach with questioning and concept mapping on acid-base solution. 2) to develop critical thinking skills of students which were taught using inquiry based approach with questioning and concept mapping on acid-base solution.

The 24 students studying in Grade 7 in the first semester of academic year 2011 from one school located in Bangkok were the sample of the study. They were selected by purposive sampling. Research instruments used were The lesson plan using inquiry based approach with questioning and concept mapping, after instruction record, student learning record, an informal interview and the critical thinking test. The qualitative and quantitative data were analysed.

The results were as follows 1. Lesson plans developing critical thinking skills on acid-base solution consisted of five stages. 1) Engagement stage, the teacher used questions for developing critical thinking skills and concept mapping were used to explore student prior knowledge connecting to the new knowledge. 2) Exploration stage, the teacher used questions for developing critical thinking skills and to encourage students to participate in learning activity. 3) Explanation stage, the teacher used the questions for developing critical thinking skills and let students interpreted data and summarized the body of knowledge. 4) Elaboration stage, the teacher used questions for developing critical thinking skills and concept mapping to promote students to apply concepts in contexts. 5) Evaluation stage, the teacher used questions for developing critical thinking skills and concept mapping to evaluate student understandings. 2. Critical thinking skills of Grade 7 students by using inquiry based approach with questioning and concept mapping after learning were higher than before learning. It was found that 83.33 percentage of students were at the level of satisfactory and 16.67 percentage of students were at the level of very satisfactory.

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Student's signature

Thesis Advisor's signature