

Nuntawan Phuaphan 2014: The Effects of Instruction Based on Tri-Sik-Kha Principles for Developing Grade 10 Students' Metacognition in the Topic of Ecosystems and Human and Sustainable Environment. Master of Education (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Mr. Ekgapoom Jantarakantee, Ph.D. 151 pages.

This research aimed to study the effects of instruction based on Tri-Sik-Kha Principles for developing grade 10 Students' Metacognition in the topic of Ecosystems and Human and Sustainable Environment. The participants were 43 grade 10 students from a school in Ranong province who studied in semester 1 year 2013. The research instruments were students' journals, teacher's journal, metacognition test and 8 lesson plans base on tri-Sik-Kha Principles. The data were analyzed by descriptive statistics and content analysis.

The research result found that the instruction based on Tri-Sik-Kha Principles can develop the students' metacognition. The students' average scores of metacognition was quite high (70.35%, 73.20% respectively). If consider in each component of metacognition, the students got average scores over 70% in the component of awareness and planning (74.13%, 71.22% respectively) in the topic of Ecosystems. For the topic of Human and Sustainable Environment the students got average score over 70% in the component of awareness (84.74%). Furthermore, the best practice in organizing learning according to Tri-Sik-Kha Principles comprised of 3 main stages with the following: Morality, teacher should prepare the students' readiness to learn by encouraging them to be neat and tidy behavior. Stage 2- Concentration: teacher should persuade students to be calm down and steady their mind for doing the activities. Stage 3- Wisdom: teacher should execute the learning activities that can promote the students' wisdom in 3 ways including listen and reading, thinking, and performing. When students have wisdom, it will lead them to be the maticognitive persons which were the person that can think about their own thinking (awareness), can think about what they was doing (planning) and can think about why they were doing like that (self-evaluation).

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Student's signature

Thesis Advisor's signature