

Benjawan Hanpipat 2010: Enhancing Thai Geology Teachers' Teaching Practices Using the Collaborative Action Research with a Focus on Integrated Curriculum. Doctor of Philosophy (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Professor Vantipa Roadrangka, Ph.D., Ed.D. 259 pages.

This research aims to investigate 1) current Geology teachers' teaching practices and 2) changes in their teaching practices after participating in a collaborative research project that involved them using an integrated curriculum. The study was divided into two phases. The first phase examined the current teaching practices of three upper secondary Geology teachers. Data collection was conducted through classroom observations, interviews, and examples of the individual teacher's tools. The second phase involved the creation of a collaborative action research (CAR) group and meetings which the three participants attended and learned ways to improve their teaching practices. The teachers designed lesson plans individually and collectively according to an integrated curriculum. The implementation of these lesson plans was observed by the researcher and both parties reflected upon them through post-class interviews. The three case studies of the study were based upon the teachers' situations and designed to gather as much understanding of each individual's teaching practices. The data gathered from the multiple resources was inductively analyzed and used to build categories and themes to explain the teachers' situations. Cross-case analysis was used to seek commonalities and differences between the findings for each subject in order to provide understanding of how each teacher's situation affected the results.

The findings in the first phase addressed the situation in which the teachers generally used the lecture-based format of lesson design and teacher-lead discussions for classroom interaction and were very unlikely to use hands-on activities. The study showed that the reasons for these varied in each of the three situations. They involved their individual beliefs in what was the most appropriate way to teach Geology, time constraints due to scheduling or school activities, the extensive amount of content that needed to be covered, and the stress of making sure their students do well on national examinations. The first phase dealt with the problems teachers have with using an integrated curriculum such as non-availability of school facilities. The study showed that the use of an integrated curriculum is likely one that is presented across disciplines rather than within science disciplines. The second phase showed that when teachers and the researcher work together to develop an integrated curriculum and implement it in their classrooms, the teachers tended to change their practices and focus on more hands-on activities either through demonstrations or experiments. To help their students make connections between concepts the teachers used diverse types of materials such as models to represent Geological processes and reading sheets, things they did not do previously. The study showed that the CAR group meetings gave the teachers the opportunity to learn from each other, but as well and that time constraints and their own personal understanding of what an integrated curriculum is can impede its implementation.

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