

Luecha Ladachart 2010: Enhancing Physics Teachers' Teaching Practices through Collaborative Action Research in Response to Thailand's Education Reform. Doctor of Philosophy (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Professor Vantipa Roadrangka, Ph.D., Ed.D. 232 pages.

This naturalistic research examines the possibility and potential of using collaborative action research (CAR) as an alternative approach to science teacher development in the context of Thailand. It involves a group of physics teachers and a researcher working and learning together to initiate actions in order to improve teaching practice in response to Thailand's education reform movement. The research consists of two consecutive phases. In the first phase, the researcher aims to understand teaching practice of the teachers and develop research relationships with them. In the second phase, CAR was initiated and examined in terms of how it can promote the teachers' learning. A variety of data collection methods were used, including teacher interviews, classroom observations, group discussions, and a collection of materials. The constant comparative method was used for data analysis.

Results of the first phase indicate that teaching practice of the teachers was close to what is commonly referred to as traditional practice. They employed content-driven instruction and emphasized numerical physics problem solving, aiming to help the students to master test taking skills in order for them to enroll in desirable universities. They were very effective in classroom discussions in which students' idea contributions were limited, and also favored the use of behaviorist strategies for classroom control. Moreover, they exhibited some limitations in content knowledge including the nature of science. Based on interpretations of the teachers' conceptions of teaching that are somehow consistent with their prior school experience, it is argued that teaching practice of the teachers was a result of their attempts in compromising those conceptions of teaching with perceived contextual conditions.

Results of the second phase indicate that the teachers came to engage in CAR with a number of concerns related to their teaching practice; although concerns with self were less likely to be made explicit. Initially, the teachers might accept an instructional idea introduced to improve their teaching practice. However, they denied the idea later when they perceived that it did not meet their concerns. It was evident during the research that CAR must be adjusted to meet real concerns of the teachers, so that they can purposefully engage in CAR as they saw it relevant to them. If CAR were to capture their concerns, the teachers would learn meaningfully to improve their teaching practice.

The research demonstrates that CAR can be used to promote teacher learning in response to Thailand's education reform movement. Thus, promotion of its use should be done in other contexts. However, more systematic results of teacher learning experiences, in addition to anecdotal, from sustained CAR are needed.

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