

Pranom Japin 2010: Enhancing the Chemistry Teachers' Teaching Practices Based on the Constructivist Approach through Collaborative Action Research.
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This interpretive case study research aims to examine 1) how the chemistry teachers perform their teaching practices before participation in the Collaborative Action Research (CAR) project, and 2) what is the influence of CAR project on the chemistry teachers teaching practices based on a constructivist approach. The research is divided into 2 phases: an exploratory phase (first semester of academic year 2008) and a Collaborative Action Research (CAR) Phase (second semester of academic year 2008). The participants of this study were three chemistry teachers teaching at different secondary public schools under the Bangkok Educational Service Area, Office 2. The study took place in the context of a Collaborative Action Research professional development experience consisting of three cycles of CAR. Each cycle consisted of group meetings, teachers' lesson planning, implementation of the lesson plans, and reflection on their practices. This interpretive case study drew upon classroom observation, semi-structured interviews, teachers' lesson plans and participant observation in CAR group meeting. The approach to analysis involved an inductive process to search for patterns and making themes which constituted the research findings.

The findings indicate that at the beginning, before their participation in the CAR group, the three chemistry teachers did not teach according to constructivist principles. The teachers were not aware of students' prior knowledge, and were primarily concerned with covering the content knowledge, and so emphasized teaching based on the textbook. They also practiced teaching through lectures and demonstrations, emphasized student assignments, rarely encouraged the use of scientific inquiry, did not promote cooperative learning, used several learning assessment methods which relied on the right answer to assess students' learning, and emphasized tests. In summary, they were acting as information provider, individual planners and assessors. The findings of the CAR phase indicate that even though teachers' changes in practice did not completely shift from traditional teaching, in terms of change and growth, the opportunities for collaboration and reflection in the CAR group enriched teachers and allowed them to construct their own understanding and effect a change in their practices. As a result, the teachers gradually changed their practice to be aware of the need to elicit student prior knowledge, and of allowing students to take more responsibility for their own learning through hands-on and minds-on activities. They incorporated cooperative learning into their classroom, using more continuous assessment, and played multiple roles to help the students in learning. Because the teachers demonstrated difficulties to adopt and adapt constructivist principles into practice due to their different background and context of teaching, the implication of this study suggests that consideration should be given to the diversity of teachers' background as central to the facilitation of such a collaborative enterprise. In addition, it is recommended that teachers should be supported to carry on the professional development through CAR to improve teaching and learning.

Student's signature

Thesis Advisor's signature