A Professional Development Program to Enhance Thinking and Problem Solving Skills for Thai Science, Mathematics and Technology (SMT) Teachers

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ABSTRACT

Purpose - This study reports the process and results of a professional development program (PDP) carried out with science, mathematics and technology (SMT) teachers throughout Thailand**.**

Method - One hundred and three teachers participated and completed the professional development program which is comprised five of phases: (1) commit to a vision and standard, (2) develop theoretical-based lesson plans, (3) participate in a four-day workshop, (4) implement and follow-up, and (5) conduct of teacher conference and lesson learned from evidence-based teaching.

Findings - The results showed that most SMT teachers were able to design teaching plans consistent with the goals of improving critical thinking and problem-solving skills and designed activities in the form of integrated multidisciplinary learning activities. All SMT teachers adopted real-life situations as learning activities, engaging students and allowing them to learn through a contextual basis. However, some teachers remained unclear on how to transform general rubrics to the task-specific rubrics needed for an accurate assessment.

Significance - The research finding showed that the PDP could improve the understanding of Thai SMT teachers' concepts in regard to both thinking and problem-solving skills. Training teachers generated useful insights from the PDP allowing them to help better design instruction programs in the future to further help bridge the gap between expected performance and current teaching practices.

Keywords: Critical thinking, Creative thinking, Problem-solving, Professional development, Multidisciplinary learning, Thailand