

## Public Abstract

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Title: Professional development for primary science teaching in Thailand: Knowledge, orientations, and practices of professional developers and professional development participants

The purpose of this study was to examine an entire PD project as a case to understand the dynamic nature of science PD in a holistic manner.

The case study is my research tradition; I used grounded theory for data analysis. The primary data sources were interview, card sort activity, and observation field notes collected during the PD and subsequently in teacher participants' classrooms. Secondary data sources were documents and artifacts that I collected from the professional developers and teachers.

An analysis of the data led me to interpret the following findings: (a) the professional developers displayed multiple orientations. These orientations included activity-driven, didactic, discovery, and pedagogy-driven orientations. The orientations that were found among the professional developers deviated from the reformed Thai Science Education Standards; (b) the professional developers had limited PCK for PD, which were knowledge of teachers' learning, knowledge of PD strategies, knowledge of PD curriculum, and knowledge of assessment.; (c) the professional developers' knowledge and orientations influenced their decisions in selecting PD activities and teaching approaches; (d) their orientations and PCK as well as the time factor influenced the design and implementation of the professional development; (e) the elementary teachers displayed didactic, activity-driven, and academic rigor orientations. The orientations that the teachers displayed deviated from the reformed Thai Science Education Standards; and (f) the elementary teachers exhibited limited PCK. It is evident that the limitation of one type of knowledge resulted in an ineffective use of other components of PCK.

This study demonstrates the nature of PD in the context of Thailand in a holistic view to understand knowledge, orientation, and implementation of professional developers and professional development participants. Furthermore, the findings have implications for professional development and professional developers in Thailand and include worldwide with respect to promoting sustain and intensive professional development and developing professional developers.