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## The development of teacher knowledge in preservice science teachers in Thailand

Kanyarat Sonsupap  
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# **The Development of Teacher Knowledge in Preservice Science Teachers in Thailand**

**A thesis submitted in fulfillment of the requirements for the awards of the degree**

**Doctor of Philosophy**

**From**

**UNIVERSITY OF WOLLONGONG**

**By**

**Kanyarat Sonsupap**

**B.Sc. (Bangkok, Thailand), B.Ed (Mahasarakham, Thailand),  
M.Sc (Khon Kaen, Thailand))**

**Faculty of Education  
2009**

# **The Development of Teacher Knowledge in Preservice Science Teachers in Thailand**

## **Thesis Certification**

### **CERTIFICATION**

I, Kanyarat Sonsupap, declare that this thesis, submitted in partial fulfillment of the requirements for the award of Doctor of Philosophy degree, in the Faculty of Education, University of Wollongong, Australia, is wholly my own work unless otherwise referenced or acknowledge. The document has not been submitted for a qualification at any other academic institution.

Kanyarat Sonsupap

30 August 2009

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## **ABSTRACT**

The education of preservice teachers is critical to the quality of teaching in schools (Parkinson, 2009). The 1999 National Education Act from Thailand recommends that teachers become facilitators of learning and use different ‘sources of knowledge’ to improve the quality of education (Section 24, p.11). Although there have been many research studies on teacher knowledge, most of them have been conducted in Western settings or conducted with Western teachers.

The purpose of the research is to study the development of teacher knowledge acquired by preservice science teachers during the fourth year of a teacher education degree and to ascertain the influences on this development. The specific research question is:

What forms of teacher knowledge do student teachers develop during the fourth year of their university course and what influences this development?

A multiple case study design was employed to address this question. In order to gain the required in-depth data, a range of qualitative methods was used. These included semi-structured interviews, concept maps, lesson observations and documents. Data were collected from a group of four Thai university fourth-year science student teachers over a period of 12 months, Somchai, Natee, Manee, and Suda. The data were analyzed by using Shulman’s (1987) seven forms of teacher knowledge as an analytical framework.

The results of the study found that the preservice teachers developed different categories of teacher knowledge and to different extents. For content knowledge, all four preservice teachers initially shared similar views developed from their university subjects and teaching experiences. They believed that the university science subjects provided them with the knowledge essential for teaching. However, each case had a different degree of development.

For the category of general pedagogical knowledge, the practicum was the major influence in the preservice teachers’ change. Although all four preservice teachers showed some change in their beliefs about general pedagogical content knowledge,



they used only a lecture style approach in their practice teaching. Curriculum knowledge was developed in the preservice teachers through their teaching experiences and mentors' advice.

Somchai and Suda changed their views of learners and their characteristics from thinking like a student gained from their own school experiences to thinking like a teacher. Natee maintained his belief about the students. He felt confidence that he could understand children's natures. Manee showed her concern about her students during her practicum. For knowledge of learners and their characteristics, the student teachers' prior experiences as a student and their teaching experiences helped shape their views.

Data about the category of knowledge of educational contexts varied between the four student teachers. None of the preservice teacher showed development of pedagogical content knowledge, most likely because this type of knowledge requires the development of teacher knowledge about teaching specific content from teaching experiences, which is usually absent in preservice teachers.

The main finding of the study is that the practicum played an important role in terms of developing teacher knowledge (Hoban, 2005). Furthermore, an individual's prior experience as a school student was a strong influence on the way each one thought about teaching and learning. An implication is that it is important for teacher education programs to let preservice teachers reflect upon and understand the importance of their prior experiences as students in school. It is recommended that the period of practicum should be longer under close monitoring by experienced mentors and university supervisors, and the education program should enable them to explore their "apprenticeship of observation" (Lortie, 1975).

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