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Scaffolding teacher cognition: Changes in novice L2 teachers' pedagogical knowledge base through expert mentoring initiatives

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ABSTRACT

Over the past two decades, there has been surge of interest in research on teacher cognition in L2 education. Although a variety of issues concerning teacher cognition have been investigated, this line of inquiry has not addressed the question of how L2 teachers' cognitive development can be supported. To address this gap, the present study aims to investigate how novice L2 teachers' pedagogical knowledge base might grow as a result of expert mentoring initiatives. To this end, four novice and four experienced teachers participated in the study. The four novice teachers received a mentoring program consisting of Video-Recorded Performance Analysis, Expert-Teacher Observation and Critical Friendship initiatives offered by the experienced teachers. Sample classroom performances of novice teachers before and after the mentoring program were video-recorded; the teachers were then interviewed regarding the thought units underlying their instructional moves using stimulated recall technique. Audio-recorded recollections of their performances were then transcribed and the underlying thought units were identified and categorized. Comparisons of the pedagogical thought units underlying their performance before and after the mentoring program revealed significant differences in both the total frequency with which they produced/expressed pedagogical thought units and the relative dominance of pedagogical thought categories.

1. Introduction

A historical look at the evolution of research on the notion of teacher thinking in mainstream education reveals that prior to the 1970s, this line of enquiry was primarily guided by the process-product conceptualization of teaching (Dunkin & Biddle, 1974). Couched within this paradigm, teaching was primarily viewed in the light of the outcomes it produced (Freeman, 2002). The central pursuit of teacher education research in such a context was simply "to detect those teaching behaviors that resulted in higher pupil achievement gain scores and, subsequently, to train teachers in these desirable behaviors, either in initial teacher education programs or by means of further professional development" (Verloop, Van Driel, & Meijer, 2001, p. 441). The assumption was that teachers would replicate, in their classroom, the behaviors assumed to be apparently conducive to learning outcomes in the students.

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This assumption has been taken up even in second language education contexts. As pointed out by Gatbonton (1999), formerly a major share of the theoretical basis informing L2 teacher education programs came from studies on classroom processes and classroom instruction. The focus was, in fact, mainly on what Burns, Freeman, and Edwards (2015) label the "public activity" in teaching which includes "classroom actions, routines, interactions, and behaviors, which are publicly accessible through observation" (p. 185). However, as pointed out by Freeman (2002) "the role of the teacher's thinking and her mental processes in such behaviors was notably absent" (p. 2). This line of reasoning came to be questioned because it "lost sight of the complexity and interdependency of teacher behavior as a whole" and yielded only a fragment of the whole picture of teaching and left out important aspects of teacher functioning (Verloop et al., 2001, p. 442).

An outgrowth of the dissatisfaction with this restricted conceptualization of teaching was a focus on teacher cognition, defined as "the unobservable cognitive dimension of teaching – what teachers know, believe and think" (Borg, 2003, p. 81). As an overarching construct, teacher cognition is assumed to encompass three major sub-constructs – beliefs, assumptions and knowledge (Woods, 1996) – each of which has been extensively investigated in the literature. The third of these sub-constructs, teacher knowledge, has secured a special place in research on teacher cognition. Interest in the topic began with Shulman's (1987) notion of "pedagogical content knowledge" characterized as the integration of content knowledge and pedagogical knowledge. Shulman also outlined other categories of teacher knowledge including knowledge of curriculum, knowledge of learners, knowledge of educational contexts, knowledge of educational ends, purposes, values and their philosophical and historical grounds, etc. which collectively represented a knowledge base a teacher draws upon while teaching.

Research on L2 teachers' knowledge also came to be inspired by this framework. Moreover, in the 1990s and early 2000s, it was recognized that there is a body of knowledge guiding L2 teachers' performance; therefore, research in L2 education also made urgent calls for the (re)conceptualization of the knowledge base of L2 teachers (Freeman, 2002). The call has been made with the aim of delineating L2 teachers' knowledge base and establishing more rigorous standards for the content specification of L2 teacher education programs (Karimi, 2011). As part of a coherent research agenda to discover how teachers think and work, one strand of research into L2 teacher cognition has been focused around probing L2 teachers' pedagogical knowledge base (PKB) (e.g. Akbari & Dadvand, 2011, 2014; Gatbonton. 1999, 2008; Karimi, 2011; Mullock, 2006) defined as "accumulated knowledge about the act of teaching, including the goals, procedures, and strategies which form the basis of what teachers do in the classroom" (Mullock, 2006, p. 48). However, this line of research, as with most research on teacher cognition, has not addressed the question of how cognition is developed in L2 teachers, although in Borg's (2003) words, it should be one of the key questions in teacher cognition research.

Borg (2003) posits that several factors including teacher experiences as learners, professional preparation, contextual factors and classroom practice are influential in shaping teacher cognitions including PKB of the teachers. Additionally, teacher reflection has also been cited as a factor affecting improvement in teacher cognition. Teachers' accumulated experiences have also been reported to play a role in introducing changes in teacher cognition (Gatbonton, 2008; Mok, 1994; Tsui, 2003). However, accumulating experience is a gradual process taking place over time. Enlisting more experienced teachers' help to share their accumulated experience with novice teachers would be a more economical way to help them realize their potential. This pairing of experienced and novice teachers is done through mentoring whereby a more experienced teacher "mediates expert knowledge for novices, helping that which is tacit become more explicit" (Dennen, 2004, p. 817).

Against this background, the present study aims to investigate how novice L2 teachers' PKB grows as a result of expert mentoring initiatives. Specifically, the study aims to address the following research questions:

1. How does mentoring affect the number of pedagogical thought units that novice L2 teachers produce?
2. How does mentoring affect the relative dominance of categories of pedagogical thought units that novice L2 teachers produce?

2. Literature review

As a result of a growing tendency towards cognitive/social views of teaching (Johnson, 2006) and a recognition that teachers' instructional practices are guided by a body of knowledge, the study of teachers' knowledge has gained increasing research attention (Akbari & Dadvand, 2011; Gatbonton, 2008; Karimi, 2011; Mullock, 2006; among others). Among the categories of knowledge proposed by Shulman (1987), pedagogical content knowledge maintains a prominent position

> because it identifies the distinctive bodies of knowledge for teaching. It represents the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented and adapted to the diverse interests and abilities of learners, and presented for instruction (p. 8).

Regarding the importance of the construct, Shulman (1986, 1987) argues that teachers' pedagogical content knowledge must be used as a main criterion for evaluating teaching expertise. In language education, the construct has come to be termed pedagogical knowledge base which refers to the collective thoughts, beliefs and theories underlying a language teacher's performance (Gatbonton, 1999). Similar to Shulman, professionals in language education (e.g. Akbari & Dadvand, 2014) stress the importance of PKB as a framework for teacher recruitment. Given such potential value of PKB, the construct has received a lot of attention from researchers and professionals in language education which have mostly tried to quantify thought units in search of broad patterns of thoughts underlying language teacher performance.