



Building Pedagogical Content Knowledge within Professional Learning Communities: An approach to counteracting regional education inequality



Guanglun Michael Mu ^a, Wei Liang ^b, Litao Lu ^{b, *}, Dongfang Huang ^c

^a Queensland University of Technology, Victoria Park Road, Kelvin Grove, 4059, Australia

^b Beijing Normal University, 19 Xijiekouwai Street, Haidian, Beijing, 100875, China

^c Beijing Academy of Educational Science, 3 Nanlishilutoutiao, Xicheng, Beijing, 100045, China

HIGHLIGHTS

- Developing pathways to Pedagogical Content Knowledge in Professional Learning Communities.
- Providing preliminary evidence on counteracting regional education inequality.
- Introducing the Chinese Teaching and Research System to international reader.
- Performing path analysis on a large-scale dataset.

ARTICLE INFO

Article history:

Received 1 October 2017

Received in revised form

8 March 2018

Accepted 13 March 2018

Keywords:

Pedagogical Content Knowledge
Professional Learning Community
Teaching and Research System
China
Path analysis

ABSTRACT

Pedagogical Content Knowledge (PCK) and Professional Learning Community (PLC) are key notions to help understand teacher development for the benefit of student learning. Less understood is the contribution of PLC to PCK. This paper considers the Teaching and Research System in China to be a nationally institutionalised PLC for in-service teacher education. Building on quantitative analysis of a sample of 10,202 teachers, the paper concludes that participation in teaching and research activities within PLCs benefits teachers' PCK. The paper also concludes that building PCK through the Teaching and Research System has potential to counteract regional education inequality.

© 2018 Elsevier Ltd. All rights reserved.

1. Introduction

Waves of education reforms have increasingly complicated and challenged the profession of teaching. To stay abreast of ever-evolving policies, implement new curriculum in classrooms, and meet diverse needs of students, teachers are expected to continuously strengthen their knowledge about teaching and learning. To understand specialised teacher knowledge, Shulman (1986) coined the notion of Pedagogical Content Knowledge (PCK), and considered it to be an important indicator of teaching quality and student learning (Shulman, 1987). To enhance teaching quality for the sake

of student learning, Hord (1997, 2004) pioneered seminal work on Professional Learning Communities (PLCs) in educational contexts. Recently, the Organisation for Economic Co-operation and Development (OECD, 2013) reported that PLCs have important associations with teaching quality and student learning across all participating countries in the Teaching and Learning International Survey. As both teachers' PCK and their PLCs have a positive impact on teaching and learning (Baumert et al., 2010; Vescio, Ross, & Adams, 2008), we frame our study on the grounds of these two notions, namely PCK and PLC.

In the Chinese context, the notions of PLC and PCK are becoming increasingly integrated into the lexicon of education policy and practice. Against this backdrop, our paper wades into PCK building within PLCs. We develop the paper in several stages. First, we conceptualise PCK and PLC, and review the emerging evidence on

* Corresponding author.

E-mail address: taolilu2010@126.com (L. Lu).

the relationship between the two notions. This review establishes the conceptual framework of our study. The review suggests that extant studies of PCK and PLC are largely concerned with teaching and learning of science and mathematics. This prompts us to focus on the PCK and PLC of teachers of different subjects. Second, we set the scene of our study by introducing the nationally institutionalised Teaching and Research System. We understand the System as a PLC for in-service teacher education in China. Next, we report on our quantitative study that investigates teachers' development of PCK through their participation in the PLCs institutionalised by the Teaching and Research System. We conclude the paper with implications for policy and practice, with a particular focus on counteracting regional education inequality through the Teaching and Research System.

It will soon become clear in the next section how our research questions emerge from extant knowledge and address the knowledge gaps. For the sake of the reader, we now provide our key research questions:

- Does teachers' participation in the PLCs institutionalised by the Teaching and Research System improve their PCK?
- Does the improvement of teachers' PCK through their participation in the PLCs counteract regional education inequality?

2. Conceptualising Pedagogical Content Knowledge and Professional Learning Community

Pedagogical Content Knowledge (PCK) is a “special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding” (Shulman, 1987, p. 8). PCK integrates the content knowledge of a specific subject and the pedagogical knowledge for teaching that subject. It therefore breaks the dichotomy of the two bodies of teacher knowledge, and transforms teacher knowledge into “an understanding of how particular topics, problems, or issues are organised, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction” (Shulman, 1987, p. 8). In other words, PCK is a sense of understanding of how to represent and formulate a specific subject, what makes the learning of specific topics in the subject easy or difficult, and how to communicate these topics to students (Shulman, 1987). PCK empowers teachers with a sense of knowing the ways to get specific subject topics across in a teaching situation (Shulman, 1986) and the ways to facilitate student learning of these topics (Shulman, 1992). It bestows knowledge of content and teaching, and knowledge of content and student upon teachers (Ball, Thames, & Phelps, 2008). In teaching practice, PCK can be reified in knowing “the most regularly taught topics in one's subject area, the most useful forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations” (Shulman, 1986, p. 9).

PCK is a key feature of expert teachers (Guerrero, 2013), and hence is “most likely to distinguish the understanding of the content specialist from that of the pedagogue” (Shulman, 1987, p. 8). Within a pedagogical space, PCK allows teachers to support student learning (Shulman, 1986, 1987). Shulman's theorem has been justified by empirical studies. For example, PCK enables mathematics teachers to have a substantial positive effect on student learning gains (Baumert et al., 2010). In countries with top-performing students in PISA and TIMSS, teachers tend to have more opportunities to learn content, pedagogical content, and general pedagogy (Guerrero, 2013). Although PCK helps improve educational quality in terms of teacher development and student learning, many colleagues problematise Shulman's

conceptualisation of the notion. According to Depaepe, Verschaffel, and Kelchtermans (2013), these problems include: (1) PCK cannot be construed as a separate body of teacher knowledge and cannot be conceptually and empirically distinguished from content knowledge; rather, teaching requires a systematic integration of different knowledge bodies. (2) PCK cannot be limited to knowledge of instructional strategies and representations or knowledge of students' (mis)conceptions; rather, PCK should also encompass curriculum knowledge, beliefs, and emotions. (3) PCK is not context-free; rather, it is a culture-, policy-, and curriculum-specific notion. This very last point is highly pertinent to the Chinese context where PCK can have different meanings for rural and urban teachers. Rural teachers were found to draw on examination-focused pedagogy to implement the examination-driven curriculum and help students survive high-stakes standardised testing; in stark contrast, urban teachers worked diligently to echo the call for all-round education and endow their students with the capacities valued by mainstream society (Yin, 2018). These diametrical pedagogies between rural and urban teachers prompt Yin (2018) to develop 'Localised Pedagogical Capital' to complement the traditional notion of PCK.

Despite strident debates about how to better conceptualise PCK, there is consensus that PCK-focused teaching practice may have better outcomes when teachers work collaboratively, as Fullan (2007, p. 97) noted:

Since interaction with others influences what one does, relationships with other teachers is a critical variable ... New meanings, new behaviours, new skills, and new beliefs depend significantly on whether teachers are working as isolated individuals or are exchanging ideas, support, and positive feelings about their work.

Here Fullan (2007) seems to suggest that innovative teaching is likely to occur when teachers develop robust connections to their colleagues within an enabling community. Such a community can be understood through the notion of Professional Learning Community (PLC). At the school level, PLC refers to a social space that facilitates continuous inquiry and improvement of teaching practices by engaging teachers in systematic, creative, and collaborative activities of professional development (Hord, 1997). Building on a literature review, Hord (1997) enumerates the outcomes of PLC, which include, but are not limited to: (1) powerful learning that defines good teaching and classroom practice, and that creates new knowledge and beliefs about teaching and learners; (2) increased meaning and understanding of the content that teachers teach and the roles that they play in helping all students achieve expectations; and (3) significant advances into making teaching adaptations for students. In another review, Vescio et al. (2008) conclude that PLC is grounded in two assumptions. First, teacher knowledge is situated in teachers' everyday lived experiences and best understood through critical reflections with peers. Second, actively engaging teachers in PLC not only increases their knowledge about subject content and teaching context, but also enhances student learning.

The reviews by Hord (1997) and Vescio et al. (2008) implicitly point to the relationship between PCK and PLC in that both notions highlight collective development of teacher knowledge about content and pedagogy for the benefit of student learning. A more recent review by Dogan, Pringle, and Mesa (2016) infers the positive effect of science teachers' participation in PLCs on their PCK, although most studies included in the review did not explicitly examine PCK. In line with these reviews, some colleagues recommend the development of PCK-driven PLCs to promote student learning. For example, Bausmith and Barry (2011) suggest without

Download English Version:

<https://daneshyari.com/en/article/6849893>

Download Persian Version:

<https://daneshyari.com/article/6849893>

[Daneshyari.com](https://daneshyari.com)