Chapter 5
Sustaining a Teacher Professional Learning Community in China Through Technology

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ABSTRACT

This study explores the evolution of a professional learning community (PLC) of Chinese teachers over a multi-year period. A group of 16 teachers participated in a three-semester PLC over the 2008-2009 school years to develop master mathematics teachers in a school district in Beijing, China. The goal of the PLC, as identified by the teachers, was to improve instruction for greater student autonomy, creativity, and problem solving as they developed their master capacity building skills and networked relationships. This paper explores what has happened to these 16 teachers six years later, specifically considering how they may have used technology to further their development as master teachers. This study shows the potential of a PLC for self-adaptive, emergent behaviors and understandings that are instructional for transforming teaching practices, sustaining changes in teaching practices and preparing students for 21st century engagements.

INTRODUCTION

China initiated a mathematics curriculum reform movement in K-12 schools nationwide in 2005 to focus on strategies to improve teaching to support greater student autonomy, creativity, and problem solving in mathematics (Yang, 2009). The reform movement was prompted by concerns expressed throughout the global mathematics education and policy communities that students need to be able to use mathematical
knowledge to creatively solve problems to engage in 21st century global economies. One of the strategies used in China has been to create local lead teacher learning communities (Hairon & Dimmock, 2012; Yang, 2009). Lead teacher development in China follows a layered approach of expertise and support, often including university-teacher educators and researchers who work with classroom teachers over a long period of time. Lead teachers then assume responsibilities within their schools and districts to model PLC strategies (DuFour, 2004) for other teachers.

China first began using the Lead Teacher approach in the early 1950s when the Chinese Ministry of Education focused on improving the quality of teaching overall. Implementation of a Lead Teacher strategy includes grouping classroom teachers by subject area and having lead teachers model ideal lessons for their peers. Regular meetings provide opportunities for discussion of model lessons and shared approaches to lesson design. Recent approaches to the Lead Teacher Development initiative have focused on preparing teachers to support their students’ development as 21st century learners. The concern, in mathematics, has been that students are taught to perform well in mathematics but do not know how to apply their knowledge creatively (Huang, Li, Zhang, & Li, 2011; Yang & Leung, 2013), requiring more opportunities for students to develop 21st century problem solving and innovation skills.

This study extends research on the cultivation of middle school lead mathematics teachers and the lead teacher learning community created through a PLC project in a school district located in Beijing, China (Fleener, Lu, & Dun, 2016). The previous study examined the lead teacher development process of the PLC through a Communities of the Future (COTF) framework for developing Master Capacity Builders (MCBs), a key component of future forward thinking and teaching that is missing in many PLC approaches to school transformation.

The COTF framework for developing MCB considers the following as key attributes for MCBs (See Smyre & Richardson, 2016):

- Open to New Ideas
- Willing to Take Appropriate Risks
- Patience
- Passion for Learning
- Ability to Share Thoughts and Emotions
- Listen for Value in What Others Say
- Help Each Other Succeed
- Look for Connections Among Disparate Ideas and Factors
- “And/Both” Connective Thinking
- Ability to Identify Future Trends and Weak Signals
- Know How to Lay Seeds for Long Term Transformation
- Ability to Ask Appropriate Questions
- Maturity in Thinking and Acting
- A Balance of Human, Moral, Ethical, Spiritual, and Economic Values
- Concern for Others

Developing MCBs includes strategies such as: