Chapter 62
The Role of Teacher Leadership for Promoting Professional Development Practices

Patricia Dickenson
National University, USA

Judith L. Montgomery
University of California Santa Cruz, USA

ABSTRACT

This chapter examines the status of teacher professional development in mathematics and explores the role of teacher leadership to promote innovative professional development strategies that sustain the growth and development of an organization. Survey data was collected from teacher leader participants of one mathematics professional development organization to understand how participants' growth and development as a teacher leader not only shaped their mathematics instructional practices, but influenced their choices in leadership roles. Further the authors share how the learning environment and pedagogical choices of the project director supported a teacher-driven professional development approach. Recommendations as well as a model for developing a teacher-driven professional development organization are provided for replication.

INTRODUCTION

The authors' of this chapter explore the development and growth of ten mathematics' teachers and one program director in a University-based mathematics professional development organization that has been established for over ten years in Northern California of the United States of America. Teacher leaders' profiles, motivations and beliefs about mathematics practices were examined to determine what elements of belonging to a professional mathematics development organization shaped their classroom practices and role as a teacher leader in a professional development organization. Interviews with the director of the organization were conducted to gain insight to the evolution and progression of the organization through social changes, political policies and reform efforts. The organization capitalizes on the idea of

"teachers-teaching-teachers" and the human desire of belonging, to grow and sustain teacher membership. The approach to a teacher-centered professional development is teacher-driven and created and rooted in a constructivist approach of learning whereby participants construct knowledge about how children best learn mathematics through active techniques such as applying approaches to their classroom practice and demonstrating practices and student work for feedback and replication. Further, participants share their ideas with colleagues in informal group meetings and demonstrate their best practices at professional development seminars to share with other teachers for investigation.

Traditional Professional Development Scenario

The last bell of the school day has rung, Ms. Myer scrambles around her fourth grade classroom to gather student workbooks to review while she attends staff development in the school cafeteria. Ms. Myer has been a teacher at Longview Elementary for the past few years, where every Wednesday the teachers listen to a presentation given by the school administration or guest speaker. Fresh baked cookies and coffee are located in the back of the room where the teachers sign in as they enter. Ms. Myer values the time to work with her grade level peers and share what she is doing in her classroom, but professional development at Longview Elementary does not leave much time for teachers to collaborate and share best practices. Before the presentation begins and whenever breaks occurs Ms. Myer shares a few ideas and hears what her colleagues are doing but rarely do they speak during the presentation.

Although this week's presentation is on problem solving in mathematics a topic Ms. Myer class is struggling with, she finds the presenter misses the mark when it comes to what can actually work in her classroom. The strategies that are shared may be appropriate for typical fourth graders but this year her class is struggling with reading and comprehension so she usually skips this section in the student textbook.

Ms. Myer feels a sense of relief as she closes the last of her student's workbooks and records their grades just before the presentation draws to a close, "time well spent" she thinks to herself. She asks her colleague for name of the presenter to place on the top of the form and quickly completes the evaluation consisting of questions where she has to rate the presenters' style and content, rather than reflect on her experience. When asked "What did you enjoy the most?" she writes "problem solving" but thinks silently "this won't work in my classroom". Yes it is not surprising to hear that while 90 percent of teachers reported participating in professional development, most of the teachers also reported it was totally useless (Darling-Hammond et al, 2009).

If student achievement is the desired result than teacher professional development must ensure that teacher participants are actively involved in the process and ideas are transferrable to the classroom. Much like the students who enter the K-12 classroom, teachers also bring their experiences, beliefs and views of learning into professional development. Shaping a teacher's beliefs and pedagogical practices takes time, commitment and support. Teacher professional development however is often presented through a traditional teaching lens where participants are passive receivers of information rather than active participants. This model of instruction is outdated and lacks impact to teachers' daily practice. As such in the case study of Ms. Myer teachers "check out" when the traditional professional development approach does not require participants to be actively involved in the process. It is necessary for professional development models take into account what Confucius has been credited in saying "I hear and I forget. I see and I remember. I do and I understand." Research has found traditional professional development fails to produce substantive or sustained change in teachers' practice (Cohen and HIll, 2001; Parsad et al., 2001; Porter et al., 2000). Traditional professional development usually consists of in-service days

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