Mathematics Teacher Leadership

Brian Twitchell

University of Maine at Farmington

Abstract

This paper will describe many of the characteristics and responsibilities of teacher leaders with a specific focus on teacher leaders in mathematics. We will look at both "formal" and "informal" teacher leaders, and will analyze the characteristics of teacher leadership possessed by the author. This paper will conclude with a discussion of future goals of the author in the area of teacher leadership in mathematics.

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INTRODUCTION

According to Charlotte Danielson, "Teaching is a flat profession." (Danielson, 2007).

Danielson goes on to describe how many professions allow for growth, promotion, and increased

responsibilities. Teaching, on the other hand, does not typically allow for that type of change

while remaining within the classroom. This however is slowly shifting as the notion of "Teacher

Leadership" becomes more commonplace.

The Teacher Leadership Exploratory Consortium defines Teacher Leadership as "the

process by which teachers...influence their colleagues, principals, and other members of the

school community to improve teaching and learning practices with the aim of increased student

learning and achievement." (Teacher Leadership Exploratory Consortium, 2008 p. 10). This

definition makes it clear that a teacher leader is going beyond instruction of their own students

and their own classroom, and influencing adults within the larger community of a department,

school, district, and beyond.

RESPONSIBILITIES OF FORMAL AND INFORMAL TEACHER LEADERS

There are many types and responsibilities of teacher leaders. The first categorization to

make is what Danielson refers to as "formal teacher leaders" and "informal teacher leaders."

(Danielson, 2007). Formal teacher leaders are those serving in specific roles, where they have

likely applied for a position and been chosen through some selection process. These roles would

include things like instructional coaches or department heads. Informal teacher leaders, on the

other hand, become recognized by their peers as leaders, primarily due to their efforts in

affecting change among schools beyond the scope of their classroom. In larger schools, these

may be people who are leaders in their grade level, while smaller schools may see them work as

leaders within their grade span, or even the school as a whole.

Informal teacher leaders, with their desire to help improve instructional practices, may be

called upon within a school or district to provide some level of professional development.

Whether it is to talk for a few minutes at a staff meeting about a new approach they are trying, or

to provide a workshop on a larger school-based or district-based level, they are still recognized

as a teacher with their own classroom. This combination is particularly valuable, as it provides a

high level of credibility to the teacher. Too often staff are presented information from

professional presenters and too often those presenters seem out of touch with a real classroom. A

teacher leader who is still in their own classroom often can be much more effective in changing

practices.

Formal teacher leaders such as instructional coaches or department chairs generally have

their own unique challenges. First, they may or may not still have a classroom of their own,

depending on the scope of their responsibilities. For those that do not have their own classroom,

one danger they face is being considered an administrator. Although they are usually not

administrators, formal teacher leaders reside in a somewhat nebulous area between classroom

teachers and administrators. They are not responsible for evaluations of teachers, as they are not

administrators, but their role can be perceived as such due to their efforts to help improve

teaching practices.

In *Learning to Lead/Leading to Learn*, Sheryl Stump (2013) describes a graduate class in

math leadership where the participants were NOT math coaches or formal math leaders. Rather,

the course was designed for classroom teachers, and provided skills and knowledge to help them

develop into informal math leaders in their schools. Teachers in this course were then able to

implement the things they learned by providing professional development opportunities or

classroom modeling to their colleagues in their school.

The teacher leader is also not just working with teachers. He or she may well be

modeling effective mathematics teaching practices to administrators such as principals. Mary

Stein and Barbara Nelson, in *Leadership Content Knowledge*, say "Mrs. West had hold of a very

important idea-- that teachers may never have had the experience of exploring mathematical

ideas and needed to experience it for themselves, as learners, in order to understand how it could

function in their students' learning." (Stein & Nelson, 2003 p. 430). The study *Investigating How*

to Support Principals as Instructional Leaders in Mathematics provides a framework and

describes professional development for principals to help train them in what high quality

mathematics classes look like. (Boston, Henrick, Gibbons, Berebitsky, & Colby, 2017). In both

cases, the teacher leaders are presenting information not to students, as they have always done,

but to their peers or even to their administrators.

CHARACTERISTICS OF TEACHER LEADERS

In *Teacher Leadership Competencies* (2014), the important point is made that "leadership

looks different for every teacher who pursues it" (National Board for Professional Teaching

Standards, 2014, p. 2). Additionally, the authors focus on different spheres of influence. These

are instructional leadership, policy leadership, and association leadership (p. 2). The focus for

this paper is on instructional leadership; we will leave policy and association (such as the NEA) leadership roles for others to discuss.

According to the *PRIME Leadership Framework* (NCSM 2008), teacher leaders progress through three stages of development. Stage 1 is leadership of self, where "the leader is respected for his or her own teaching and learning skills." Stage 2, leadership of others, is described as "the leader is respected for his or her interpersonal skills and commitment for leading change among teams of teachers and colleagues." Finally in stage 3, which is leadership in the extended community, "the leader is respected for his or her influence and engagement with an expanded community of educational stakeholders" (p. 6).

One of the most important things, for both formal and informal teacher leaders, is the establishment of relationships. In *Key Characteristics of Teacher Leaders in Schools*, Angela Lumpkin, Heather Claxton, and Amanda Wilson list three specific characteristics of teacher leaders that lead to increased student learning. These are empowerment, relationships, and collaboration (Lumpkin, Claxon, and Wilson, 2014 p. 60). In *Elementary Mathematics Leaders*, Francis Fennell, Beth Kobett, and Jonathan Wray also discuss in depth the importance of establishing relationships. (Fennel, Kobett, and Wray, 2013 p. 176-177).

Understanding adult learners is another important characteristic of a teacher leader. Teaching peers is not the same as teaching children. Adults are more likely, for example, to question WHY they need to learn what is being taught. And, according to Fennell, adults are more likely to want to learn new things when they can see that it is a solution to an immediate problem (Fennel, Kobett, and Wray, 2013 p. 175).

MY PERSONAL CHARACTERISTICS

I have been fortunate to have had a variety of opportunities over the years to explore and experience being a teacher leader. In 1999 I adopted the NSF-funded high school curriculum, Math Connections. The first year of implementation, I had received no training on how to teach any differently than I always had done. Following that first year, I received a week of training for teaching the first year of the program, as well as a separate week of training for year 2. The following summer (2001), I was invited to a "Train the Trainer" workshop in Massachusetts, where we spent a week learning how to present to adults, as well as learning effective teaching practices. Following that week, I first spent a Saturday with a mentor helping to provide training in a high school in Boston, and then was able to start providing training to various high schools around the country.

Over the years other opportunities arose, such as designing and presenting a 3 day workshop on the use of graphing calculators, as well as other types of presentations. More recently, with the change in my job from a high school teacher in one district to a math coach in a neighboring district, I was able to be part of the Maine Mathematics Coaching Project (MMCP). This experience was valuable enough that for each year after the completion of the project, I have asked that our district continue to be part of the MMCP for the benefits that are provided.

My own experience as a mathematics coach has reinforced the importance of relationships. I came into a new district after having spent 24 years teaching at the high school level. Even before I arrived in the district, I knew that I had to establish the idea with the elementary teachers in particular that I was there to support them. I was not a high school teacher

coming to their class to tell them what to do. By working to create a culture where I offered help with problems they were having, as well as making it clear that I was learning a lot about HOW to teach at the elementary level, I was able to establish a strong collegial relationship with the majority of the teachers that I work with. This has enabled me to be able to send off an email with a suggestion to try, and get a response back appreciating the suggestions and letting me know they would try it right off.

Part of this relationship hinges on the fact that I have clearly stated I am not an administrator. At the opening staff meeting at the different schools, I have made it very clear that the work I do with the teachers is between myself and the teacher. I have even made the statement (with the principal in the room) that if the principal comes to ask me how a teacher was doing, my response would be "Why don't you go observe them and see for yourself?"

As discussed earlier, establishing relationships with teachers was a high priority when I started this job, and is something that at which I have been successful. Additionally, the variety of experiences in training and providing professional development over the years has given me an effective skill set for understanding and working with adult learners. In my current job, I have also established a rapport with administration to the point where I am asked at times to provide them with some professional development in a variety of areas, not all of which are strictly math related. This includes helping to lead the high school towards Proficiency Based Education, working on the district evaluation team, and designing the specifications for the administrative team on how the newly added Student Learning Outcomes will be implemented into our evaluation plan. Finally, the superintendent and principals look to me for assistance in planning

professional development activities, establishing data teams, and modeling "vertical teams" in our district based on the work I have done with math teachers over the last 3 years.

At this point in my professional career, I have become very comfortable working one on one with teachers, working in grade level meetings to guide teachers towards the development of a common curriculum across the district, as well as presenting to district wide audiences, most recently a 3 hour data workshop with all K - 8 teachers and ed techs. I have also expanded my connections well beyond the district. I am serving on the Professional Development Sub Committee of the Western Maine Educational Consortium (WMEC) and helping to organize and plan what looks to be an annual Professional Development workshop day serving over 1000 teachers and ed techs. Based on the *PRIME Leadership Framework,* I would place myself fairly strongly at the stage 3 of leadership development.

FUTURE GOALS

As I look to the future, my immediate path is clear. I intend to stay in my role as a district math coach until I have worked myself out of a job. I do not have immediate plans to leave the job where I am currently. Down the road, I could envision seeing myself doing more work on a regional level, and eventually working at the state level in some capacity to continue to help improve math instruction. Although technically retirement for me could come as soon as 11 years from now, I can easily see myself continuing to work well past that point in time.

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