

Rethinking Teacher Leader Development: A Study of Early Career Mathematics Teachers

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In the era of standards-based reforms, informal teacher leadership is a critical factor in realizing instructional improvement. In this paper, we report on data from a one-year study of four early career mathematics teachers engaging in professional development around Common Core mathematical practices and leadership. Our findings highlight how the professional development structure supported the development of early career teachers' leader identity. Through iterative opportunities to participate in two communities of practice (within the professional development setting and in school-based professional learning communities) early career teachers were able to engage in collegial conversations and imagine themselves taking on new roles and responsibilities in order to support the learning of the teachers with whom they worked.

Introduction

The Common Core State Standards for Mathematics (CCSSM) (Common Core State Standards Initiative, 2010) advance a vision of student-centered mathematics instruction that is significantly different than that seen in the majority of classrooms (Jacobs, et al., 2006; National Mathematics Advisory Panel, 2008). In contrast to traditional instruction focused on procedural skills, students are expected to engage in mathematical problem solving, construct mathematical arguments, and communicate their reasoning to others. Full implementation of CCSSM will demand substantial learning on the part of teachers and will require some teachers to take on new leadership roles and responsibilities (Marongelle, Sztajn, & Smith, 2013).

Given teachers' situated knowledge of mathematics and of mathematics teaching, they are the most likely candidates to lead these instructional improvement efforts (Harris & Muijs, 2005; Mangin & Stoelinga, 2010). Early career teachers are more accepting of change (Hargreaves, 2005) and in this case are more likely to have some familiarity with the specific changes (to both content and instructional practices) that CCSSM demands due to having recently come from teacher preparation programs that emphasize these new standards.

Although usually not afforded formal leadership roles, early career teacher leaders, those with five or fewer years of teaching experience (Raue & Gray, 2015), might be better positioned to lead toward the necessary curricular and instructional changes. However, little is known about how to assist teachers in conceiving of themselves as leaders and enacting leadership to support instructional improvement (Neumerski, 2013). This is especially true of early career teachers who are still forming their initial teacher identity (Van Zoest & Bohl, 2005). In this paper, we report on data from a yearlong exploratory study in which we situated ourselves within Wenger's (1998) theory of identity formation and teacher leader development (Huggins, Klar, Hammonds,

& Buskey, 2017; Katzenmeyer & Moller, 2001; Lambert, 2003a, 2003b; Lieberman & Friedrich) to examine the leader identity development of early career mathematics teachers. In particular, we sought to answer the question, what supports early career mathematics teachers in developing a leader identity?

Literature Review

Teacher Leadership

York-Barr and Duke (2004) define teacher leadership as a process through which teachers influence their colleagues (and other members of the school community) to improve teaching and ultimately increase student learning. Similarly, Katzenmeyer and Moller (2001) define teacher leaders as those who “lead within and beyond the classroom, identify with and contribute to a community of teacher learners and leaders, and influence others towards improved educational practice” (p. 17). Common across these definitions is the focus on instructional improvement and the purposeful inclusion of teachers who have no formalized leadership role, but instead advance the learning of others through more informal means.

Teacher leadership has been touted as a promising means to support school-wide instructional improvement (Harris & Muijs, 2005; Mangin & Stoelinga, 2008; York-Barr & Duke, 2004). Hopkins and colleagues (2013) demonstrated how a district’s intentional restructuring efforts around teacher leadership supported positive changes in mathematics instruction. Teacher leaders, including those in formalized coaching roles as well as informal leaders, were identified as central agents in shifting teachers’ beliefs and instructional practices toward inquiry approaches promoted within their new curriculum. Other studies specific to mathematics have also documented how teacher leaders bring specialized knowledge of teaching that can be leveraged to support peers around both content and pedagogy (Doyle, 2000; Manno & Firestone, 2008). In addition to content and pedagogical expertise, teacher leaders, especially informal teacher leaders who lack positional authority, are respected by their peers and have established trusting relationships; making them the opportune people to go to for instructional advice (Danielson, 2007; Hopkins et al., 2013). In our case, we were focused on early career teachers leading toward instructional improvements specific to promoting mathematical argumentation in the classroom.

Prominent in the teacher leadership literature are studies that report the benefits *to* teacher leaders, rather than (or sometimes in addition to) benefits *of* teacher leaders. In their literature review, York-Barr & Duke (2004) asserted that the strongest effect of teacher leadership is growth and learning among the teacher leaders themselves. Because they are exposed to new information and given opportunities for observation and interaction with colleagues around instructional practices, teacher leaders grow in leadership skills, feel empowered and often change their instructional practice (Barth, 2001; York-Barr & Duke, 2004). As such, teacher leadership might alleviate teacher burnout and attrition due to the lack of opportunities for advancement and continued growth within the teaching profession.

Despite these benefits, teacher leadership also brings with it additional responsibilities that may lead to stress or unintended tensions (Wenner & Campbell, 2017). Both teaching and leading are time-intensive activities. Teacher leaders must somehow balance their commitments to colleagues’ learning with time dedicated to their own classroom instruction (Doyle, 2000; York-Barr & Duke, 2004). A second tension within teacher leadership is that it disrupts the egalitarian nature of teacher community. This change from a horizontal to a more hierarchical

relationship with peers could diminish teachers desire to lead (Barth, 2001; York-Barr & Duke, 2004). This is a concern even in the case of informal leadership, as teachers might not be willing to stand out or assert their expertise; what Danielson (2007) refers to as the “tall poppy syndrome” (p. 19).

In sum, the literature on teacher leadership supports the idea that developing teacher leaders is a worthy endeavor. Not only is this an effective means of implementing instructional reforms, such as those being called for with new Common Core standards, but also as a way to attract, retain, and motivate teachers. As summarized by Goldstein (2014),

If we expect ambitious, intellectually engaged people to become teachers and remain in our public schools, we must offer them a career path that is exciting and varied over the long term, and which includes opportunities to lead among adults, not just children. (p. 269)

Teacher Leader Development

While teacher leaders are called upon to do the leadership work of developing individuals, teams, and organizations (York-Barr & Duke, 2004) toward instructional improvement (Mangin & Stoelinga, 2008), in order to do this work teachers must be developed as leaders. Yet, little research considers how teachers transition into new roles (Lieberman & Friedrich, 2010). For teachers to be developed as leaders, their learning of leadership needs to be seen as a developmental process (Huggins et al., 2017) where teachers increasingly develop their leadership understanding (Lotter, Yow, & Peters, 2014). Their overall teacher leader developmental process may not be linear depending upon leadership tasks and teachers’ capacity to engage in those tasks (Lambert, 2003a). However, in order to develop as leaders, intentionality concerning how teacher leader learning is facilitated must be considered (Katzenmyer & Moller, 2001). One promising approach to teacher leader development is through professional development and job-embedded collaboration (Hunziker, 2012; Yow & Lotter, 2016).

Teacher leader professional development. Formal professional development assists teachers in developing their understandings of leadership (Katzenmeyer & Moller, 2001). Despite an increased emphasis on providing professional development that can support the development of teachers as leaders, these opportunities are typically no different than what would be considered high quality professional development more generally (Hanuscin, Sinha, & Hall, 2016). Part of the leadership development of teachers requires posing questions that will expand a teacher’s focus from self as reflective practitioner to leading others (Lambert, 2003b). Additionally, teachers have to hold a “broader view” (Lieberman, 1987, p. 402) of the school as an organization. However, this professional learning concerning leadership and organizational understandings are often new conceptions for teachers to process. The transition from teacher to teacher leader may require making sense of these learnings within the context of a community (Howe & Stubbs, 2003) of teacher leaders from different schools (Edge & Mylopoulos, 2008). A community of teacher leader learners allows emerging teacher leaders to take risks (Yow, 2007) concerning leading other adults in their schools.

For teachers to be seen as leaders by their peers, they have to have some content-specific expertise (Yow, 2007). Tethering content-specific learning and leadership learning may hold promise for developing teachers as leaders for instructional improvement (Hunziker, 2012). While content-specific professional development in tandem with leadership professional development may be a part of how teachers learn to be leaders for instructional improvement, another part of the leadership learning process for teachers requires enacting leadership in context-specific ways (Collinson & Sherrill, 1997). Therefore, as teachers learn to lead they need opportunities to engage in leadership of other adults in their schools, since their success will be determined by other teachers supporting them (Katzenmeyer & Moller, 2001).

Theoretical Perspective

In order to understand how early career mathematics teachers develop a leader identity, Wenger's (1998) work around identity formation within communities of practice provided a useful framework. Wenger (1998) describes three modes of belonging through which identity development occurs: engagement, imagination, and alignment. Identity formation begins through mutual engagement in shared activities. These experiences provide opportunities for the negotiation of new meanings and the development of a shared repertoire as members work toward common goals. Imagination transcends engagement and occurs when one looks beyond the immediate activity to imagine new possibilities. Imagination requires active reflection on one's engagement to see oneself within the new meanings being developed and incorporate other perspectives into one's identity. Alignment involves coordinating local efforts and activities within broader systems. Alignment requires the ability to find common ground and communicate purposes and criteria to members both within and outside the community.

These three modes of belonging are neither linear nor mutually exclusive. Rather engagement, imagination and alignment occur through interwoven processes of participation and reification. We are interested in how early career teachers begin to develop a leader identity—a sense of belonging within the community of teacher leaders whose shared enterprise is to engage the teachers with whom they work in new forms of interaction that lead to improved mathematics instruction.

Methodology

Participants and Context

The primary participants in this study were four early career teachers from three different high schools in the same suburban school district in the northwestern U.S. Harry¹ was the least experienced with only one year of previous teaching experience and Sam was beginning his third year at the time of this study. Although both Abby and Scott had more than four years of teaching experience prior to our study, our choice to designate them as early career teachers is based on their circuitous paths to their respective positions. More importantly, both teachers identified themselves as novice mathematics teachers at the start of this study. Abby was just returning to teaching after a short break to stay at home with her children and took a position in a large suburban high school after working in a rural district in which she was one of only three high school mathematics teachers. As a special education teacher, most of Scott's previous

¹ All names are pseudonyms.

experience was with learning disabled students in self-contained settings. The school moved to a co-teach model the year before this study and Scott was assigned to an algebra class one period a day. The year of this study, Scott co-taught three algebra classes and became an official member of the algebra teachers' professional learning community (PLC). See Table 1 for a list of teacher leaders and their respective building level mathematics coaches and administrators.

Across the 2014-15 school year, these four teachers and their coaches engaged in eight days of professional development around mathematics instruction and leadership. Four of the eight days were district-wide professional development workshops designed to support implementation of a new CCSSM-aligned Algebra I curriculum. The other four days participants joined a team of algebra teachers in a neighboring district for Mathematics Studio cycles that were book-ended by additional leadership sessions.

Table 1.
Participants

Teacher Leaders	Years of experience prior to year of study	Mathematics Coach	Associate Principal
Harry	1	Bonnie	Hailey
Sam	2	Bonnie	Brent
Abby	4 ½ years; first year at this school	Sandra & Hannah	Penny
Scott	7 years in special education; first year joining math PLCs	Sandra & Hannah	Penny

Similar to lesson study (Perry & Lewis, 2009), Mathematics Studio is a classroom-embedded form of professional development that involves collaboratively planning, observing, and debriefing a mathematics lesson enacted in real time (Lesseig, 2016). The yearlong focus for the algebra team's Mathematics Studios was to learn more about mathematical justification and the instructional practices that support students to engage in argumentation practices. In addition to the core Mathematics Studio activities, the four teachers and coaches participated in further professional learning specific to leadership prior to and after each Studio. Discussions during the leadership sessions drew on a framework for mathematics leadership (National Council of Supervisors of Mathematics [NCSM], 2008) as well as the congenial and collegial aspects of PLCs (Nelson, Deuel, Slavit, & Kennedy, 2010).

The PRIME (PRinciples and Indicators for Mathematics Education Leaders) Framework (NCSM, 2008) outlines four principles or "anchors" of leadership responsibility (Equity, Teaching and Learning, Curriculum, Assessment) along with three indicators of leadership action within each principle. These indicators are aligned with stages of leader development (i.e., leadership of self, of others, and of the extended community) to provide a pathway for novice leaders. The leadership sessions surrounding each Mathematics Studio centered on the second principle, Teaching and Learning. As indicated in Table 2 below, indicators aligned with this principle were explicit objects of reflection during Mathematics Studios one and three.

Table 2.
Leadership focus for each Mathematics Studio cycle

Studio Session	Date	Frameworks introduced	Leadership focus during Studio
Studio 1	Oct 16, 2014	The PRIME Leadership Framework (NCSM, 2008)	What do the elements of Mathematics Studio afford in relation to Indicator 2?
Studio 2	Dec 11, 2014	Congenial vs. Collegial Talk (Nelson, Deuel, & Slavitt, 2010)	When were you engaged in collegial vs. congenial conversations? What prompted those interactions?
Studio 3	Feb 26, 2015	Review Congenial vs. Collegial Talk, moving from a “doing” to a “learning group”	Choose a Stage 2 indicator. How is this indicator related to facilitator moves & to the interactions among teachers during Studio?
Studio 4	April 30, 2015	Status in Groups (Cohen, 2014)	What role does status play when working with a group of teachers?

Data Collection and Analysis

Qualitative methods were employed to gain insight into how participation in joint activities and reification of ideas introduced in professional development contributed to identity formation. Data collected for this study included fieldnotes, video and artifacts from each of the eight professional development sessions; fieldnotes and artifacts from observations of teacher leaders’ classroom teaching and PLC meetings; and transcripts of interviews from the four teacher leaders as well as the mathematics coaches, building principals, and district mathematics specialist who supported them. Throughout the data collection process, fieldnotes were analyzed and discussed among the research team to surface our inferences and check our assumptions. Interactions with participants (e.g., classroom and PLC observations, informal conversations with district coaches and leaders throughout the school year) provided a robust opportunity for a holistic understanding of leader identity development.

To address our research question, we focused primarily on the interview data and video of the professional development that specifically related to leadership development. Teacher leader interviews focused on their learning from the professional development experiences, their interactions with mathematics coaches and building administrators, and the ways in which these influenced their leadership interactions with colleagues. Interviews with coaches and administrators focused on their conceptions of teacher leadership and their interactions with the teacher leaders, other administrators or coaches, and the district mathematics specialist.

Analyzing teacher leader interviews. To analyze the data, inductive and deductive qualitative methods were employed (Merriam, 2009). Two researchers (first and second authors) independently open coded (Glaser & Strauss, 1967) the interview transcripts and then met to discuss potential categories. After a second round of independent coding using the agreed upon categories that emerged from the first round of coding, the researchers met to re-categorize the data and discuss emergent themes that would specifically answer our research question concerning the supports that contributed to the early career mathematics teacher participants developing a leader identity. Categories from the deductive second round of coding were grouped and regrouped by both researchers together based upon Wenger's (1998) conceptualization of identity formation to name potential themes. Potential themes were discussed until the two researchers analyzing the interview data were in agreement. Within these themes, the researchers identified specific examples wherein participants discussed how they engaged, imagined, or aligned with new conceptions of leadership.

Analyzing professional development sessions. Studiocode © (Studiocode Business group, 2012), a qualitative video analysis software, was used to facilitate the coding of professional development video. Because our intent was to address questions about leader identity development, we first segmented the video by speaker turns to track individual contributions across the four Mathematics Studio cycles. Two researchers (second and third authors) independently coded each speaker unit according to community level and stance. Community level referred to whether the discussion was centered on supporting student, teacher, or leader learning. Stance referred to whether the speaker was taking on a classroom teacher or leader perspective. For example, a discussion about how the Mathematics Studio helped them understand how to plan for argumentation would be coded at the teacher community level with a teacher stance, whereas a discussion in which teacher leaders imagined how they might incorporate aspects of Studio into PLC meetings would also be coded at the teacher community level, but with a leader stance.

To help us identify the various supports participants used to make sense of leadership, we added codes to denote specific references to the PRIME Leadership Framework, congenial vs. collegial conversations, and school-based PLCs. Consensus in coding was reached through discussion and the coded timelines were combined into a single database. Studiocode features (e.g., coding matrices and Boolean searches) were then used to facilitate thematic analysis. For example, we were able to gather all speaker units coded as leader stance to look for patterns related to Studio events that led participants to shift from a teacher to a leader perspective. As with the interview analysis, researchers then identified specific examples to illustrate the themes and aspects of leader identity development for each participant.

After both teams had finished analysis, the entire research team met to reconcile any differences between the interview transcripts and video data themes while utilizing the fieldnotes and artifacts for triangulation purposes. Finally, we discussed what emerged from our collective analysis to construct the findings below.

Findings

Identity is a nexus of multi-memberships (Wenger, 1998) wherein individuals continually make sense of their various forms of participation. Our analysis illustrated how early career teachers developed a leader identity through iterative cycles of engagement, imagination, and alignment as they participated in two communities – one within the leadership sessions surrounding Mathematics Studio and the second within their school-based PLCs. Specifically, our findings show the importance of intentional leadership framing and attaching that framing to practice within professional development as well as the importance of being positioned as a leader and taking the opportunity to enact new practices.

Learning Teacher Leadership in Mathematics Studio

When investigating participants' interactions within the leadership sessions surrounding the Mathematics Studios, two dominant themes emerged. The first was the intentional framing of teacher leadership by Mathematics Studio facilitators and others in the community. The second theme, attaching framing to practice, refers to how early career teachers verbalized connections they were making between these new perspectives on teacher leadership and their ongoing work (or imagined work) within their school-based PLCs.

Intentional framing. Our analysis revealed three aspects related to the framing of teacher leadership were particularly important. This included providing an explicit definition of teacher leadership, recognizing the developmental aspects of leadership, and establishing a sense of community among the early career teachers. In the leadership session preceding the first Mathematics Studio, participants were provided with a definition of *leadership for learning* as an activity that occurs collectively and is purposefully designed to lead to instructional change (Lambert, 1998).

The PRIME Leadership framework (NCSM, 2008), also introduced during the first leadership session, more specifically defined teacher leadership in the context of improving mathematics instruction. PRIME Indicator 2 under the Teaching and Learning principle was used to frame the discussions in the leadership sessions surrounding the third Mathematics Studio (see Table 2). This indicator states that, "Every teacher implements research-informed best practices and uses effective instructional planning and teaching strategies." In this way, the PRIME framework not only promoted reflection, but also encouraged the early career teachers to imagine alternative ways in which leadership could be enacted and helped them to identify next steps related to their participation in future school-based work.

The construct of congenial vs. collegial conversations (Nelson et al., 2010), introduced during leadership sessions in Mathematics Studio 2, emerged as a key support for teacher leaders to re-imagine how a group of teachers might interact around mathematics instruction. These ideas were reified as participants identified places during Studio where they themselves had engaged in congenial or collegial conversations. During subsequent leadership sessions, the early career teachers reflected on what prompted congenial vs. collegial interactions and considered what each type of conversation afforded in terms of teacher learning.

From participants' reflections during the leadership sessions as well as subsequent interviews, it was apparent that this intentional framing of leadership was influential. For example, in her interview, Abby noted how the PRIME Leadership framework gave her a new perspective on leadership and an opening to begin seeing herself in that role.

I was definitely intrigued by the levels of leadership and the different concepts in each level. I thought that was very interesting. I didn't know that there were levels of leadership and that you could do different things to become a leader as a teacher. And it expanded my thinking of what you can do and how you can influence other teachers.

Similarly, Sam elaborated on his own leadership journey, saying how after two years of teaching he did not feel he had the “tools to be a leader.” Moreover, he described how prior to the year of the study he had “always wondered, what it takes to be a teacher leader, besides experience?” Sam’s statements highlighted how, prior to the leadership sessions, in the absence of any formal leadership training, he did not have a clear sense of what teacher leadership entailed. This ambiguity around the definition of teacher leadership left him unsure of his present or future role as a leader.

Also evidenced in Sam’s reflection is the recognition that leadership development occurs on individual timescales. In other words, teachers grow into leaders at their own pace as they gradually take on additional leadership roles. The idea of leadership as a developmental process is specifically embedded in the three stages of leadership outlined in the Prime Leadership framework. This developmental aspect became an explicit topic of conversation in the leadership session following Studio 1 when Sam qualified his intentions toward leadership saying, “after becoming a better teacher, how can I become a better leader...I'm thinking and internalizing all of this and how can I apply it to myself today and tomorrow and then eventually about how can I help those around me. I'm still not there, but I'm trying.” While Sam was unsure of how to become a better teacher simultaneously with becoming a better leader, the intentional framing allowed him to see the stages of leadership and recognize his own leadership developmental process.

Administrators also made statements about their role in providing teachers with appropriate leadership support and opportunities to “excel at their own rate.” For example, Abby and Scott’s principal, Penny, discussed how she considered it a part of her job to initiate conversations to raise teachers’ awareness of their leadership potential:

It’s my job then to support them through that. Sometimes it’s just pulling teeth to even have that conversation with teachers. And some teachers would say, ‘I never thought about it.’...And so I think sometimes just the awareness or starting with those kinds of crucial conversations about, ‘Here’s where I see [leadership]... Where do you see?’

Finally, it was apparent that discussing leadership within a community of mathematics teachers with similar or even contrasting experiences was critical to the acts of engaging and imagining new possibilities for leadership. The definition of leadership for learning and the PRIME Leadership Framework allowed participants to engage in discussion and develop shared meanings of what leading for instructional improvement might entail. This in turn enabled the early career teachers to identify ways in which they already engaged in leadership actions or imagine how they might do so. Reflecting on experiences within their own school-based PLCs and listening to colleagues’ stories further supported a shared vision around leadership.

Attaching framing to practice. The early career teachers in our study were able to apply the concept of congenial and collegial interactions directly to the PLCs in which they participated within their respective schools. Between Mathematics Studios, the teacher leaders attached the concept of congenial and collegial interactions to specific instances in their school-based PLCs. Attaching the framing to their PLCs allowed them to change their perspective about the nature of the interactions between the members in their PLCs as well as the nature of their own participation within them. Gradually, over time, the early career teachers either imagined themselves interacting with their colleagues differently or actually engaged with their colleagues differently in their efforts to focus their PLC discussions on improving instruction.

Harry discussed how he had previously assumed that “an agreeing PLC was a working PLC,” as it appeared more efficient. Harry further discussed how two members of his PLC rarely attended because of what Harry perceived as a “butt heads” conversation between the other two more veteran PLC members. Through the framing of collegial vs. congenial conversations, Harry was able to see that these were not meant to be contentious discussions, but rather attempts by his more experienced colleagues to have richer conversations about “are we really going in the right direction?” in terms of curriculum and instruction. Harry credits the leadership sessions with giving him “that bigger idea behind that you’re actually growing in some way through the argument.” For him, he needed to be explicitly told that collegial conversations are necessary to improve instruction.

At the end of the year, Scott, a more experienced teacher, but new to the mathematics PLCs, continued to grapple with how to “not be combative, not point fingers, but just dig deep into things and get the other person engaged as well.” While he clearly valued these types of conversations, he was still unclear about how to make them happen. Scott believed that the common goal established in Mathematics Studio (i.e., designing lessons to foster, and looking for evidence of, student engagement in mathematical argumentation) allowed for the teacher conversations to be more collegial than congenial. He thought that if his school-based PLC could have a common goal that they would be more likely to engage in collegial vs. congenial conversations as well.

For Abby, engaging in collegial conversations was all about her level of knowledge. As a new teacher in her school but not new to the teaching profession, Abby discussed how her first collegial conversation was about a homework policy she had incorporated in another district that she offered to her colleagues as a viable alternative to the one implemented in her current school. However, her ability to engage in collegial conversations evolved concurrently with her knowledge. “I started off at the beginning (of the year) being much more congenial and then I switched to be more collegial as I’ve become more comfortable with the curriculum.” To Abby, being collegial was about speaking up about what was important based upon the experience and knowledge one had about a given topic. Since she was not familiar with the curriculum at her new school, she felt ill-prepared to engage in conversations in her PLC that might challenge the perspectives of others.

While Abby needed knowledge to engage in collegial conversations, Sam needed experiences such as those gained in Mathematics Studio. “If somebody would have forced me to have those conversations, I wouldn’t have had the heart to do it. But now that I’ve experienced it, I appreciate it more, and I’m able to have them.” Sam added that just telling someone to engage in collegial conversations instead of congenial conversations would not be beneficial. He firmly believed people needed to experience these collegial conversations in order to enact them.

In the leadership activities that book-ended the Mathematics Studio work, teacher leaders received consistent messages that leading for instructional improvement necessitates the transformation of PLCs into learning groups in which teachers collaboratively investigate mathematics teaching and learning and challenge traditional practices. This intentional framing of teacher leadership, together with opportunities to attach this framing to practice, supported the early career teachers in developing a leader identity. As discussed next, complementary supports within their school communities further enhanced participants' ability to engage in leadership and imagine new possibilities for their own leadership role.

Exploring Teacher Leadership in School-based PLCs

Our analysis revealed several ways in which leader identity development was supported within each participant's school setting. This included being positioned as a teacher leader as well as engaging in new practices within PLCs based on their re-framing of teacher leadership. It was through reflecting on that re-framing and engagement that the early career teachers began to see themselves as teacher leaders.

Being positioned as a teacher leader. While not in formalized teacher leader roles, all of the early career teachers in our study had been tapped to be teacher leaders by being asked to be a part of the Mathematics Studios and leadership sessions surrounding them. Being identified as a teacher leader by administrators, mathematics coaches, and colleagues was a relatively new understanding for these early career teachers. Yet, each of them discussed how they felt about others recognizing their competence and supporting them in their leadership development.

Harry thought it was an "odd thing" to think of himself as a leader since he had only been teaching for two years and mentioned how he did not initially realize that attending the Studios was in part about developing him as a leader. "When I started doing leadership studio, I don't know why it didn't click right away. But eventually, it clicked for me that, 'Oh, this is so that I can be a leader,' and at some point, be in either a better position or even from the position I'm in, like these are some things I could do." Harry went on to admit, "I guess I've never really thought about filling that role before. I felt too young."

For Abby, her disposition, not her age, prevented her from seeing herself as becoming a leader. She said, "It's surprising to me but others have been telling me that they see me as a leader. It's surprising. I'm just like, 'Okay.' Because I know myself that I'm a little bit more quiet and a little bit more reserved on some of my beliefs."

While conceptualizing themselves as leaders and being told that they were leaders were both important aspects of identity development, seeing their ideas as valued was even more pivotal. Sam said he felt like a leader "when my input is...it's taken and considered in the PLC...when I have something to offer that it's considered and listened to and considered again." Sam determined that leadership came when others valued his ideas enough to truly consider them. Harry agreed. He discussed how one of his colleagues truly empowered him to be a leader. "I felt like a leader when (Andy and I) worked together because he's very good at drawing ideas out of people. And, he puts a lot of value in other people's thinking. I felt like I could really contribute when I was working with Andy. As far as the curriculum went, he really supported my ideas. I felt like I had this opportunity to...we could go back and forth."

The valuing of the early career teachers' ideas by their colleagues assisted them in feeling like leaders. However, support from coaches and administrators allowed them to truly want to develop their leadership skills and assisted them in having ideas to offer to their colleagues.

Harry explained that his coach provided “opportunities to grow.” He realized that he would have been in a very different situation had his coach not made such opportunities available. “I could have very easily been in a position where I’m not learning new things about Common Core and not learning new things about our curriculum and not being in a position to offer ideas at all. So, I think that because of the value that other people have put in me this year, I’ve had a chance to grow.”

Abby also mentioned the support she received from one of her coaches. “Sandra encourages me as a person to be in more of a leadership role...She’s talked about that, saying that I’m a good teacher and that I do well with the kids and that I do have leadership qualities that she wants to bring out and use.” Abby’s administrator, Penny, did not have a specific formal leadership role for her, but knew that the district math specialist had identified Abby early on as a teacher she “wanted to groom” for leadership. Penny also knew that Abby was unaware of the way others saw her and mentioned that there would need to be a “crucial conversation” about the leadership potential she saw in Abby and how that might be developed.

Scott’s coach acknowledged that she saw expertise in him and relied on that expertise in her work. She admitted, even though she had been teaching for many more years than Scott, that he “knows far more than I do about differentiation...He’s good at it...he’s really good at it.” For Sam, support came through being given a formal leadership role by his administrator. “Brent has told me to be that teacher leader. He’s a big support. Having a role in a PLC as a facilitator has given me that support...without a leader giving me that role, I don’t think I would have been there.”

Importantly, administrators recognized that positioning teachers as leaders without subsequent support was not adequate. Penny in particular spoke specifically about the pitfalls associated with the common practice of simply taking someone out of the classroom because they are a “really good” teacher and “throwing them into a ‘go DO coaching’ role and hopefully you’ve got some leadership skills.” Instead, teachers must have opportunities to develop skills specific to leadership (e.g., engaging adults in critical conversations, tending to the learning of adults).

Enacting new practices. Once positioned as teacher leaders and supported to develop their leadership skills, each of the early career teachers chose to engage in new practices based on what they had learned in the leadership sessions. Mainly, these new practices occurred in their PLCs as they interacted with colleagues. Since the leadership concepts were new to these early career teachers, they were cautious in the ways in which they attempted to engage in these new practices. These practices expanded and developed as participants had more experience engaging in collegial conversations during the Studio leadership sessions and imagining how they might engage in similar conversations within their school-based PLCs.

Abby mentioned how this occurred for her. “I noticed as (my leadership) evolved, and Studio evolved, I became more like, ‘Okay. So we’re doing this next unit. I’m going to check it out ahead of time. And then, I would become more informed about the content a little more and go to the PLCs with more of a leader attitude and a collegial attitude of, ‘I’m going to participate in this, and I’m going to have an opinion about it, even though it’s my first year here with the content and the curriculum.’” Abby changed her practices of asking others for help concerning the curriculum to learning the curriculum on her own in order to contribute to her PLC with a “leader attitude.”

Harry knew the curriculum but did not feel like he could contribute much in this regard given the expertise of his two veteran teacher PLC members. However, his experience in the leadership sessions allowed him to have knowledge about the Common Core that his PLC colleagues did not. He explained, “I can interject ideas, and they’re totally okay with it. And, they want to hear it. So, that’s one thing that’s changed. And, just that feeling of being in an uncomfortable conversation because you don’t all see things eye-to-eye. Even just practice with that.” The Studio conversations allowed Harry to realize the potential collegial interactions have for teacher learning and to practice being a part of uncomfortable conversations.

Even though he was only a third year teacher, Sam had actually been the formalized facilitator of his PLC two years prior to being a part of the leadership sessions (those positions had subsequently been taken away due to budget cuts). Sam had been frustrated by his PLC’s constant focus on assessment over instruction. “There wasn’t an instructional topic that came up in PLC. It was always assessment, rubric, and all these other things...” He discussed how, as a result of his engagement in the leadership sessions, he decided to take a new approach and question his PLC colleagues about particular instructional practices. As an example, Sam encouraged his PLC colleagues to try different forms of assessments and was successful in getting them to implement projects and use posters as evidence of student learning.

He explained how the leadership sessions had changed him and his approach to his PLC conversations. “This year, I’m not afraid to speak my mind and say, ‘Well, this is what I’ve learned, and I’m going to try it.’...But at least we’re having those conversations rather than just avoiding them...Now, we can actually talk about that. So, it’s working.” After being in the same PLC for three years, with a year of formal teacher leader designation, and one year of leadership sessions, Sam was at a place in his understanding of himself as a professional to enact leadership without feeling uncomfortable about collegial conversations concerning improving instruction. In fact, he truly saw himself as someone who was supposed to engage others in conversations about instructional practices.

I think that that’s probably where my role is now. And, I think they (PLC members) know that by now, that that’s kind of what I’m going to do. I’m going to ask them about why they’re doing what they’re doing ...their homework strategies and what they’re doing for assignments...compared to before when it was, ‘Don’t ask, and then that won’t create...’ because some teachers will take offense.... But, I’m comfortable with them now.

Learning teacher leadership with other early career teachers during leadership sessions and engaging in and reflecting on new practices within the mathematics communities at their respective schools were mutualistic activities. Through iterative opportunities to negotiate new meanings of leadership within these two communities of practice, the early career teachers were able to further develop their identity as teacher leaders. In the final section, we review evidence that reveals how Harry and Sam in particular talked about themselves as leaders.

Seeing Oneself as a Teacher Leader

Due to engaging in new practices and experiencing the responses of their colleagues as they engaged in these new practices, as well as their own reflection on their experiences with these new practices, these early career teachers came to see themselves as teacher leaders. Harry explained how this realization occurred for him during the year as he started paying less attention to the mathematical content that was being shared during professional development sessions he attended and realized, “the way that they (teachers) share it is actually a more interesting thing to watch. So seeing the group be facilitated, and how conversations from the Studio were facilitated was an interesting thing to look at.” Harry’s newfound interest in watching the facilitator did not only occur in the Mathematics Studio but in the district-wide curriculum workshops as well. He explained,

I finally picked up on that earlier in the year with Linda (the workshop facilitator). Like I think it was this year near the beginning where it’s like, ‘Oh, I am paying attention to the wrong thing this whole time.’ I’ve been watching puppets dance in front instead of watching the puppeteer do all the work in the background, and that’s a much more interesting thing to me. And, I think I’ve learned a lot more from that side of it.

Since Harry started to see himself as a teacher leader, he changed the focus of his attention from his learning as a classroom teacher to the learning of other teachers from a leader viewpoint.

Harry’s identity evolved as he gained a new perspective on his leadership role. This new perspective is what each of the coaches wanted for their early career teachers and why they chose them to attend the leadership sessions. All of the coaches wanted the early career teachers to start to see themselves as teacher leaders and feel, as Hannah stated, “more confident in their practice that they will also be the ones who would be willing to step up and present various things that they are doing.”

For Sam, this kind of confidence had come through the interactions in which he had intentionally engaged differently. “And now, I feel confident that after a couple of conversations, it’s okay that they (PLC members) don’t agree with me. But, I want to tell them why I do things this way. And so, I feel like next year, it’s just going to get easier and easier to have those (difficult) conversations.” After practicing trying to redirect his colleagues’ focus from assessment to instructional practices during the PLC time, Sam had decided that he was going to have conversations in his PLC that were more collegial than congenial. He realized that his colleagues may not agree with him, but he still felt it was his responsibility to discuss his ideas concerning instruction, especially since he had been given the opportunity to receive a substantial amount of training. This statement illustrates this shift from Stage 1 to Stage 2 leadership within the PRIME Leadership Framework (NCSM, 2008):

I go to a lot of workshops and when I take those back, usually I would try it out and not tell anybody. And now, I’m taking it, and I’m going to tell people what we’re doing. And, it’s something that I kind of took on as it’s kind of my responsibility to share that information, because if I don’t, then nobody is going to tell me what they learned. And so if we all want to be better, I have to tell people rather than just internalize it.

Seeing leadership concerning instruction as his responsibility, Sam decided that he needed to be the one to share his learning with colleagues in hopes that they would share their learning with him in order for reciprocal opportunities to exist for them to grow professionally. By the end of the year, Sam truly saw himself as ready to lead for instructional improvement. He discussed, “I think my principals think that I’m ready for that new role. But, I never thought that that was part of my role until this year. And then after the Studio, I figured that this is my third year, and I have to take another step. I can’t just be the follower for the next—because eventually, it’s got to change.” Sam further explained how not only his perspective on his role had changed, but also his understanding and definition of leadership. “Now that I’ve experienced Studio, (leadership) is to challenge people to try something new that maybe is not comfortable. But maybe, it works.”

Discussion and Implications

Leadership development must occur for teachers who may not see themselves as leaders, but who may be best positioned to lead important instructional improvements based upon reforms like CCSSM. That is, leadership may be needed concerning instructional improvements from teachers who do not know how to engage in effective leadership practices. This study contributes to our understanding of teacher leader development, specifically as it pertains to early career teachers and those with no formalized leadership role. These insights into leader identity development have implications for teacher and teacher leader professional development.

Teacher Leader Identity Development

The early career teachers did not necessarily conceive of themselves as leaders at the onset of this study. However, through engagement in two communities of practices (i.e., opportunities to learn about leadership and engage in collegial conversations during Studio, coupled with time to reflect on these leadership practices and imagine new possibilities in the context of their school-based PLCs), participants each began to construct an identity as a leader.

Our study highlighted the key role leadership frameworks and intellectual tools (e.g., notions of collegial vs. congenial conversations) can play in providing teachers with new leadership understandings and resources to lead toward instructional improvement. Together with the recognition that there are stages of leadership (e.g., leadership of self, others, and community), this definition expanded these early career teachers’ thinking about leadership and allowed them to work toward leadership goals specific to their current levels of experience and future aspirations.

The specific leadership activities participants were able to engage in with their PLC colleagues were based upon their level of leader identity development. Both Abby and Scott were new members of their school-based PLC during the year of the study. Therefore, their engagement with their PLC colleagues was at such a nascent stage that to even imagine how they might interact differently was complex. At the end of the school year, Scott was still questioning how to have collegial conversations that were not “combative.” However, Harry had more experience with his school-based PLC and was attending to the “puppeteer’s” facilitation of conversations in order to consider how to engage adults in learning conversations. His level of leader identity development allowed him to attend to specific leadership practices he saw others enacting. Sam was even further along in developing a leadership identity and had more experience with his school-based PLC. While Sam still struggled to engage his PLC colleagues

in instructional conversations, he did find a way to get them to change one of their assessments. All of the participants will need further engagement with their school-based PLCs as a leader in order to continue to imagine new possibilities to work toward alignment, which requires moving toward common ground. Even Sam realized that he had to first acknowledge his colleagues' concerns about assessment before he could influence them to move to his concerns about instructional practices. Since none of our participants had formalized roles as teacher leaders, all of them were aware of how precarious their influence could be. Wanting to be respected and trusted in order to have the opportunity to move colleagues toward instructional improvement (Danielson, 2007; Hopkins et al., 2013) as they had imagined, each was thoughtful about what their next leadership practice should entail.

Leadership Development within Teacher Professional Development

Although positioning these early career teachers as informal leaders was an important step, we argue that this alone is insufficient. Effective teacher leadership necessitates some intentionality around leadership development. This begins by explicitly introducing leadership definitions and frameworks within teacher professional development. These tools can push teachers to imagine how their role in instructional improvement might move beyond their own classroom toward influencing instructional conversations with colleagues. Identity development takes time and is dependent upon social interactions (Wenger, 1998). Thus, leadership development within teacher professional development should be ongoing and remain wedded to the multiple professional communities within which leaders work. This occurred in our study through repeated opportunities for participants to engage and reimagine within both Mathematics Studios and school-based communities of practice.

In his final interview, Harry commented on how these intentional supports were critical in removing the doubt or fear that may accompany new responsibilities and made it possible for him to see himself as a leader.

...I've had similar situations with just responsibilities other places where when—from my experience when you don't have this prep for being in a leadership situation, if there is no prep then it's a scary thing. Whereas in this case I feel like I've learned so much about the geometry curriculum, I've learned about being a leader this year.

Unfortunately, the status quo in schools is to give teachers leadership responsibilities without leadership development and without even a clear definition of their leadership role (Margolis & Huggins, 2012). Professional learning opportunities for teachers are generally centered on learning mathematics content or pedagogy specific to improving instruction within their own classrooms. Rarely are teachers provided explicit training in how to support the learning of their colleagues. We contend that professional development providers need to recognize and explicitly attend to the multiple roles and responsibilities teacher leaders take on and the various contexts in which they work (Collinson & Sherill, 1997). Inherent tensions exist within teacher leadership (Wenner & Campbell, 2017), and those tensions are amplified in the case of early career teachers. Intentional leadership supports may assist early career teachers in taking risks (Yow, 2007) to engage more veteran colleagues in difficult conversations around instructional improvement.

Good teaching does not automatically translate into skills needed to lead others. Thus, we urge both administrators and professional development providers to take responsibility for leadership development. It is not enough for administrators to merely have those “crucial conversations” with teachers to plant those initial seeds of leadership. Administrators must also be intentional about supporting the development of leadership knowledge, skills, and dispositions (Klar, Huggins, Hammonds, & Buskey, 2015).

Conclusion

Our findings bring to question typical assumptions about when teachers might be ready to take on leadership roles and responsibilities and provide insights into specific supports that can advance the leadership potential of early career teachers. Such teacher leader development is imperative if instructional reforms such as those called for under Common Core are to be realized. Our study was focused on understanding the supports that were needed for four early career mathematics teachers to develop a leader identity. While the findings add to the growing body of scholarship on teacher leader development, more longitudinal research is needed concerning how teachers develop as leaders over time to influence instructional improvement and the supports they are provided to do that work.

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