Navigating Teacher Leaders' Complex Relationships Using a Distributed Leadership Framework

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Abstract

This article presents findings from a multi-year, qualitative study of K-12 science teacher fellows involved in a grant-funded professional development program. This research hones in on Year 2 where we examine the actions our fellows have taken in their districts as science teacher leaders and their sense of agency. The following main themes emerged in the data: how science teacher leaders see personal/organizational change as a process; the importance of differentiated mentoring and support; the fellows' acceptance of roadblocks as part of the growth process; and finally, the value of reflection as a means to sustain leadership efforts beyond the fellowship. We explore the implications for professional development programs in districts, and in particular, those that address the need to cultivate teacher leadership.

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Introduction

> The pressures of the PARCC [Partnership for Assessment of Readiness for College and Careers] on my participating teachers seem to be becoming much more real. Although they would never say it and have been nothing but accommodating . . . getting them to devote serious time toward science is the last thing on their mind. However, I believe they want to teach science better and more but are put under pressure from administration and others to produce test scores. The second grade teacher that I had asked to participate spoke to me and apologized that she has not been able to meet with me or work on the science at all in her class. Of course getting her to teach science is not the goal of what I am trying to do . . . getting her to teach science better is the goal. (Montclair State University Wipro SEF Fellow)

Teacher leadership happens amid a complex context of policy, content, students, peers, and administrators, and its enactment remains far messier than the literature has revealed. Despite a call by York-Barr and Duke (2004) for more theory-driven, empirical research, teacher leadership remains a largely undertheorized field (Wenner & Campbell, 2017), and there is still a need to understand the supports necessary to enact teacher leadership. For one, most professional development programs do little to support teacher leadership or to prepare teachers to spread their innovative practices beyond their own classrooms. Teachers are often driven by district and policy agendas and led by so-called outside experts who may not understand the classroom context (Cochran-Smith & Lytle, 2009; Lieberman & Miller, 2011). In addition to professional development programs' misalignment between purpose and delivery, the largely hierarchical school structure impedes teachers' potential for leadership. Professional development and school culture are intrinsically linked; a clearer understanding of the complexities of the contexts affecting teacher leadership can inform professional development programs that prepare teacher leaders.

This article illuminates the relationships and contexts that serve as key factors in teacher leaders' work. It presents findings from Year 2 of a multiyear, qualitative study of K–12 science teachers (fellows) involved in a grant-funded program. The Wipro Science Education Fellowship (SEF) program was developed by the University of Massachusetts, Boston (Center of Science and Mathematics in Context, 2017) and aimed to foster sustainable change in districts by supporting emergent teacher leadership as fellows analyzed their teaching (in Year 1) and developed teacher leadership plans (in Year 2). The fellows participated in the program for up to 3 years and were supported by university-based directors of the program and school district coordinators. In Year 1, fellows' activities were largely determined by the program's structured protocols; in Year 2, fellows worked independently and delved deeply into their inquiries and expanded their spheres of influence as they pursued a teacher leadership project and led professional development workshops. In doing so, they encountered the realities of engaging in work with multiple stakeholders and navigating those relationships in a thorny policy context.

We sought to understand how the fellows enacted their teacher leadership plans

in the context of complex situations in schools and districts,[1] using distributed leadership as a theoretical framework.

We asked the following:

● How does district context influence how teachers engage in teacher leadership?

● In what ways does a university-based teacher leadership program support teacher leaders as they interact with multiple stakeholders in complex contexts?

Despite a growing literature on teacher leadership, there is a need to analyze the complexities of teacher leadership. These complexities might result from interactions among different stakeholders with varying and sometimes contradictory visions, and the various policy contexts that are the reality in the work of teacher leaders. Through a fine-grained analysis of the various factors at stake, our research aimed to address the gap in the teacher leadership literature related to teacher leadership's enactment.

We begin by situating our work within the relevant literature on teacher leadership, particularly as it has spoken to the relationships among participants, noting where our work adds to that literature. Next, we establish the importance and relevance of distributed leadership as a theoretical framework for our study and justify the use of case study methodology to help us understand the lived realities of teacher leaders. The findings section organizes these cases under three themes that we identified in our analysis: participants' definitions of teacher leadership, the complex context of players and policy that influenced how fellows enacted their teacher leadership plans, and how the university mentor did or did not support the fellows' work. Finally, we discuss findings across cases as well as our findings' implications for, and contribution to, the field of teacher leadership.

Conceptualizing Teacher Leadership

Most of the literature on teacher leadership has described the kinds of actions teacher leaders take and the challenges teacher leaders face as they engage in their work. As Wenner and Campbell (2017) have suggested, research in the field has moved little beyond self-reported studies and remains conceptually limited. We situate our work within the following gaps in the literature:

1. Teacher leadership literature often provides a weak theoretical lens, if one is provided at all. We draw on a strong and relevant theoretical framework for teacher leadership.

2. There is little attention paid to how different stakeholders interact with concomitant minimal analysis of those interactions. We focus on the nature of interactions among different stakeholders.

3. In addition to how stakeholders interact with teacher leaders, research often fails to describe how teacher leaders react to the specific policies that are often filtered through subject-specific contexts. We examine how teacher leaders react within specific (often subject-specific) contexts.

4. Unlike much of the teacher leadership literature, we examine the potential for university mentors to provide support beyond traditional professional development and master's-level course work.

The teacher leadership literature has emphasized the actions of teacher leaders. Their actions can be broadly defined as those related to the improvement of teaching or to school-level decision making and leadership (Barth, 1990; Danielson, 2006; Hargreaves, Earl, Moore, & Manning, 2001; Lieberman & Miller, 2004; Richardson, 2003; Sergiovanni, 2005; Stone & Cuper, 2006). Improvements can be of one's own or to a peer's teaching, resulting from the teacher leader organizing and leading peer reviews of school practice, leading professional learning experiences, deepening content knowledge, and facilitating curricular changes. School-level decision making and leadership can include starting and sustaining initiatives for students and teachers and spearheading changes to school structures.

Adding a dimension to these goals, York-Barr and Duke (2004) emphasized collaboration and suggested that teacher leadership is the process by which teachers, individually or collectively, influence their colleagues, principals, and other members of the school community to improve teaching and learning. These teachers come to view leadership as part of their professional role, learning to share and enhance professional learning within their school setting. Furthermore, they generate new knowledge for themselves that emerges from action (Reason & Bradbury, 2008). These efforts lead to new initiatives that can effect change in their classrooms, schools, and communities (Onore, Goeke, Taylor, & Klein, 2009; Taylor, Goeke, Klein, Onore, & Geist, 2011). Viewed from this perspective, "teachers who are leaders 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" (Katzenmeyer & Moller, 2001, p. 5). Teachers, as they become teacher leaders, transition from the relatively autonomous setting of the classroom to one that includes and supports colleagues. Thus teacher leadership is intrinsically tied to opportunities to form relationships and the supports that are necessary for these relationships to be sustained.

In addition to its emphasis on teacher actions, teacher leadership research has focused on impact. Wenner and Campbell (2017) delineated four themes around impact: "the stresses/difficulties, changing relationships with peer and administration, increased positive feelings and professional growth, and increased leadership capacity" (p. 162). Despite this understanding, much of the teacher leadership research is descriptive and fails to explore the interactions that influence how teachers are able to make an impact. Wenner and Campbell (2017) noted that when principals support

teacher leadership, teacher leaders seem to have more positive associations and feel more effective. *Support* in the research is ill defined, however, and the authors wrote that "supporting teacher leaders also requires some attention to the power structures that are bound up in the relationships between teacher leaders and teachers" (p. 163). We delve more deeply into these supports and address this gap in the literature with attention to the structures, policies, and relationships that influence how teacher leaders enact their leadership work. Additionally, we seek a deeper understanding of the factors that influence whether administrators provide support and the kinds of internal and external constraints that influence the effectiveness of their support.

Teacher Leader Relationships

The teacher leadership literature has highlighted the need to shift the teacher leadership structure to one where teachers are part of a collective team (Donaldson, 2007; Robinson, 2008; Smylie, 2010). Leadership is not an individual action; rather, it requires a relationship among the teacher leaders themselves and with members of their schools to influence curricular and pedagogical change (Donaldson, 2007). The literature has suggested the need for teacher leaders to serve as bridges between multiple subgroups within the larger educational system rather than being isolated while straddling groups (Angelle & Schmid, 2007; Mangin, 2007; Margolis, 2012; Margolis & Huggins, 2012; Portin, Russell, Samuelson, & Knapp, 2013). Despite the agreement among researchers about the importance of relationships in teacher leadership, few researchers have explored the nuances of the supports that need to be in place for these relationships, and thus teacher leadership, to flourish, with barely any attention paid to how gender (and the mismatch of administrators, who tend to be men, interacting with teachers, who tend to be women), field of study, race, and years of teaching may also add to the complexity of this work. Additionally, the teacher leadership literature has largely left out the possibility of the university mentor as a support, except when the mentor acts as an "instructor" or "leader" of professional development or course work (Wenner & Campbell, 2017; Whitney, 2013). University mentors may have an influence on how administrators and teachers distribute leadership in a particular school context and on how teacher leaders interact with administrators.

As Margolis and Huggins (2012) revealed in their study of teacher leaders in a distributed leadership setting, teacher leaders' interactions with colleagues are "helter skelter" (p. 976) because of the lack of administrator communication. Teacher leaders often find themselves positioned in complex ways between their own pedagogical beliefs and the instructional initiatives of administrators and other teachers (Feeney, 2009; Firestone & Martinez, 2007; Hunzicker, 2013; Mangin, 2007; Margolis, 2012; Margolis & Deuel, 2009; Muijs & Harris, 2006; Raffanti, 2008). The ill-defined nature of their role diminishes teacher leaders' experiences, resulting in their isolation. The majority of teacher leaders work alongside principals

as members of an administrative leadership team, positioning them as part of a school's hierarchical structure (Portin et al., 2013). This positioning, along with the fact that the selection of teachers for leadership roles often lacks transparency and fails to be democratic, contributes to tensions among school community members. We sought to learn more about teacher leadership as it unfolded in a naturally occurring environment (the school) and where teacher leaders were given structure and support by an external university program that provided mentoring within the context of the teacher leaders' school districts.

Examining Teacher Leadership From a Distributed Leadership Lens

Aware of the previously mentioned tensions within teacher leadership, we looked for a model of distributed leadership focused on the collaborative work of teachers, teacher leaders, administrators, and others working together to support sustainable school change. Distributed leadership represents how leadership practice is enacted by multiple stakeholders rather than merely by those in official leadership roles. Spillane, Halverson, and Diamond (2001) argued that leadership happens in a variety of ways throughout the school and is centered on interactions between people: "Depending on the particular leadership task, school leaders' knowledge and expertise may be best explored at the group or collective level rather than at the individual leader's level" (p. 25). Distributed leadership shifts the focus from individuals involved in leadership practice to interactions between these individuals to investigate the situation in which leadership is enacted (Gronn, 2000; Harris, 2010; Muijs & Harris, 2007; Spillane, 2006). Enacting distributed leadership involves recognizing how others beyond administrators—colleagues, for example—contribute to leadership (Spillane, 2006). When research on teacher leadership uses a theoretical framework, it is most likely distributed leadership (Wenner & Campbell, 2017), yet even within that frame, how this framework is used varies widely. We argue that distributed leadership is most valuable as a framework when it considers teacher leadership activities as situated and examines the social processes at the intersection of leaders, followers, and the situation or context.

Distributed leadership provides a way of understanding "the activities of multiple groups of individuals in a school who work at guiding staff in the instructional change process" (Spillane, 2006, p. 20), as opposed to the lone teacher leader. It emphasizes the social component where leadership is dispersed among interacting individuals trying to accomplish a set task. Finally, it implies interdependency, rather than dependency, embracing how various leaders in different roles share responsibility (Spillane, 2006). Teacher leadership has the potential for success when it is integrated into the larger vision of the school (Weiner, 2011) and when leadership is seen as an event, rather than as a role or set of actions directed by a single individual and carried out by others answerable to the leader. This in turn emphasizes the need to adopt a model of distributed leadership in an educational

context that focuses on the work of teachers, teacher leaders, administrators, and others to support teacher leadership models (Gronn, 2000; Harris, 2008, 2010; Harris, Leithwood, Day, Sammons, & Hopkins, 2007; Spillane, Halverson, & Diamond, 2004; Spillane & Orlina, 2005). One critique of the distributed leadership model, particularly in schools, is that it "takes insufficient consideration of the dynamics of power and influence in which it is situated. Within schools . . . while leadership may be 'distributed,' power often is not" (Bolden, 2011, p. 260). We deliberately explore how distributed leadership actually happens in school contexts. In particular, we were interested in the internal and external constraints that hinder its enactment, seeking a better understanding of what it means to have "administrative support," and the kinds of tensions that might influence "support." Additionally, we look at the specific—and relatively unexplored—role of university mentors in supporting or disrupting the enactment of distributed leadership. We recognize that not all university involvement might be positive and that, in fact, universities often privilege their academic ways of knowing, which may differ from district agendas. We are mindful of this as we seek to contribute to the limited literature on how university mentors can (or cannot) support teacher leadership in schools.

Methods

We used phenomenological, qualitative research methods (Merriam, 2009) to explore the dynamic and complex work of teacher leaders. Phenomenological methods are useful in understanding participants' beliefs and actions related to teacher leadership, the context for their actions, and how interactions shape their work and understandings of teacher leadership. The methodological frame was particularly well suited, as we tried to make sense of the complex relationships among various influences. Given that we were seeking to understand the multilayered actions that constituted distributed leadership, we relied on data collection tools like interviews and observations to help us understand the why and the how.

We constructed case studies as a means of presenting our findings because this best suited the data's emerging themes. In that they are a useful vehicle for understanding holistic kinds of situations and events (Yin, 1994), case studies allowed us to capture the multilayered complexities of the narratives of an individual teacher leader, highlighting the various stakeholders and particular contexts. Of the number of purposes that case studies serve (Yin, 1994), two were particularly relevant to our study:

1. Case studies provide a means of explaining complex links in real life events.

2. Case studies help describe the authentic context where the study occurred.

In a separate article (Taylor et al., 2017), we presented themes that emerged from the data of all program participants over the course of three years. However, in

analyzing the data from Year 2, case studies seemed to help illustrate our identified themes in the context of our fellows' leadership activities. This article highlights four cases that represent a broad range of complex interactions that occurred during the study. These cases, while representative of the whole, best illustrate the challenges and opportunities afforded to all teachers through fellowship work and how that work was situated in local contexts. For example, the majority (although not all) of our participants identified university supports and interactions as important in helping them navigate their local contexts. Focusing on participants who described our findings in a typical, but also illuminating, manner helped us unwrap the dynamics of interactions among participants. Despite finding little disconfirming evidence in any of the cases, not every participant experienced all of the identified themes. Although no single case represents the entirety of issues that emerged from our research, taken as a whole, the cases represent the major themes that emerged from our data.

Participants

Eight out of 20 members of Cohort 1 agreed to participate in the study. Three doctoral assistants were charged with soliciting participants and collecting data; the three faculty researchers did not know who was participating in the study until after the fellows had completed the program. Participants comprised four high school teachers and four middle school teachers from four out of five of the participating districts. Participants were between the ages of 25 and 55 years, with 3–30 years of teaching experience; both men and women were represented. Of the eight participants, we chose to present four (two men and two women) who best represented the challenges and complexities of the group.

Additionally, all five district coordinators participated in the study. Although district coordinators are more often likely to be women, three out of five of our coordinators were women. Similar to our participants, district coordinators represented a range of personal characteristics, professional experience, and district sizes.

Data Sources

In accordance with qualitative methods, we conducted interviews and collected artifacts. The use of multiple sources allowed us to triangulate the data (Bogdan & Biklen, 2003) to ensure reliability.

Interviews. Fellows were interviewed four times over the course of 2 years: at the beginning of the program, midway through the first year, after the first year of the program, and at the end of the second year. We drew on the data from the interviews before (June, Year 1) and at the end of (June, Year 2) the second year of the program. Semistructured interviews, lasting approximately 1 hour, were conducted and transcribed. District coordinators were interviewed once a year over the

course of 3 years. We asked fellows about their definitions of teacher leadership, their experiences in the program, and the kinds of teacher leadership actions in which they engaged throughout the program. Interviews of the district coordinators centered on their interactions with the fellows in their districts and their insights into teacher leadership.

Artifacts. Artifacts for the second year of study included (a) teacher leadership action plans, (b) monthly reflections, (c) final program evaluations, (d) poster presentations, (e) proposals for a third-year extension of action plans, and (f) reflections from university mentors about working with fellows.

Data Analysis

We used the constant comparative method of qualitative data analysis (Glaser & Strauss, 1967) to code, sort, and categorize data, first using larger preset codes that we derived from the distributed leadership framework and the gaps in the literature. For example, to begin to understand how distributed leadership was or was not being enacted, we realized that it would be useful to identify the key players in the participants' contexts. Similarly, we then coded for interactions with policies, peers, administrators, students, and school/district culture, initially looking at how to characterize those interactions. These became part of one overarching theme about the importance of context in distributed leadership. We also looked at university mentor interactions with teacher leaders, but we separated out these interactions into a separate theme as it involved a dynamic that was not a part of the teacher's typical workday. The coded data for these themes included data from interviews, monthly reflections, and interviews with district coordinators. We paid attention to instances of alignment or misalignment around how participants engaged in the work. Finally, we coded for how the participants defined teacher leadership and what kinds of actions they seemed to associate with leadership.

After one round of coding, we collectively reviewed codes and, through discussion, clarified and defined our codes. We then recoded the data in alignment with those collaboratively agreed-upon codes. For example, although we coded various data for "university mentor involvement," there was a great deal of differentiation within that involvement.

Our codes became the basis for our themes, which indicated the complexities of distributed leadership. We structured our case studies around the three major themes that composed these codes:

1. Interactions within the context impact distributed leadership. Within this theme, we identified the key interactions among players and policies that impact the enactment of distributed leadership.

2. Teachers' definitions of teacher leadership influenced how distributed leadership was realized.

3. University mentors can act as a means of disruption for the ways that distributed leadership do or do not play out.

Findings

We first considered how each of the players in the case understood and defined teacher leadership, allowing us to lay the foundation for various influences on teacher leaders' interactions. Next, we explored how interactions among the teacher leader, district personnel, the school (including students), and the policy context came together to impact how teachers' leadership plans were enacted. Finally, we examined the university faculty's role in these interactions and how the faculty were or were not able to mitigate the challenges participants faced. The cases highlight the most significant interactions among the players and help illuminate how the complex issues of teacher leadership interact with one another. In the discussion section, we present a cross-analysis of the four cases.

Abby

Teacher leadership. Abby is the least experienced of the first cohort. A middle school science teacher, she defined teacher leaders as "teachers . . . who are able to assist other science teachers with lessons or content or practices" (Year 1, June). Her understanding of her role as a teacher leader was focused on collaboratively supporting other teachers with pedagogical content knowledge and implementing innovative teaching practices. She saw her fellowship work as an opportunity to change science teaching in her school, not just in her classroom: "[It] enabled me to bring that back to my school to say, 'Look guys, I've got this cool set of stuff, and we can share it!'" (Year 2, June). Although her district coordinator, Mark, also saw her role as a means to make sustainable change in science instruction, his definition of teacher leadership was more individualistic and involved "teachers who don't wait . . . for me or somebody else in authority in the district to identify an issue and then come up with a possible plan of attack" (Year 2, September). Therefore an important piece of her context was that the administration situated teacher leaders as individuals who take the initiative to encourage change among other individuals. As well, both had a definition of teacher leadership that involved leading other peers, which became a limiting factor in how they understood Abby's teacher leadership project as well as its impact and expansion.

Interactions within the context: Teacher leader as lone actor. Abby's teacher leadership plan focused on developing a girls' science, technology, engineering, and mathematics (STEM) club, which encouraged participation of girls in STEM careers. She described her deep interest in this subject during her first interview, just prior to beginning in the Wipro SEF fellowship:

> Something that I feel strongly about is how to engage girls and then excite them about science or math or whatever it is. And from the people that I've talked to . . . in a science or math or engineering field . . . they all seem to have a very specific experience with that. (Year 2, September)

Her motivation for her project came from a felt need from her students and her disciplinary field. The context of her students was a significant one for her, one that perhaps was more important than her notion of teacher leadership as work with peers.

Although her teacher leadership plan did not directly meet the district-wide science agenda, her district coordinator supported her action plan. As Mark explained, "At the middle school . . . it's been more of an attempt to engage the students in activities, in the classroom and getting other teachers to invest in that. And also to have them involved in activities after school, before school, outside of the regular school day." Mark saw his role in the leadership activity as one of providing resources for fellows (in Abby's case, "K'Nex and Legos") so they could enact their objectives on their own or with other teachers. His flexibility and support allowed Abby to pursue something she felt passionately about but that was more unconventional in terms of innovative curriculum and teacher leadership. Networking with the university, she arranged joint meetings and activities for the girls' science club and a separate boys' science club. She invited female scientists to meet with students and share what they do and how they became interested in doing science.

However, neither her coordinator nor Abby saw her activities as teacher leadership work; rather, they saw her activities as an extension of her individual passion. Mark allowed her to do the work, even though he viewed it as outside the district agenda. And even with his tacit support, Abby questioned her role as a teacher leader. In her last interview, she admitted that she confided in her university mentor, "I'm just running a club after school, like how am I really being a leader?" (Year 2, June). With little support from the district for how her work might matter to the school or district as a whole, distributed leadership was limited in scope. Because her coordinator had a relatively narrow notion of teacher leadership, it did not occur to him to think about how the project might engage others inside and outside of the school.

University mentor. In many ways, Mark helped Abby navigate the structural barriers inherent in school and district organizations; he helped her find ways to negotiate with the principal (who insisted on offering a boys' STEM club) and another teacher who offered a science club, posing a potential conflict. Mark also provided her with resources necessary for her afterschool clubs. These were two important means of support, but they did not meet all of Abby's needs, as they considered her work as an isolated teacher engaging in a project that was not traditional teacher leadership. Instead, she acknowledged the emotional support of her university mentor about the project: "I called her and texted her and she would kind of remind me that we're doing good work here" (Year 2, June). She articulated that besides structural and material support, she appreciated emotional support,

which placed value on her progress and successes and encouraged her to persist. Her university mentor noted,

> Abby seemed to second-guess herself and undercut the enormous amount of leadership involved in running two STEM afterschool programs. Because her hard work and organization did not fall into the typical categories of teacher leadership, much of our communications centered around encouragement and validation, rather than providing resources or curriculum. (Year 2, June)

Her university mentor adapted her support to meet the fellow's need.

Despite the limitations of her own internal definitions of teacher leadership, as well as the limited way her district coordinator was able to help her spread her work, Abby came to realize the leadership opportunities involving her teacher leadership plan: "We did go to that conference at UPenn to share what the [teacher leadership plan] and the whole Wipro SEF program was about, so I did formally share what I was working on" (Year 2, June). She also recognized that she raised "awareness" within her "colleague/friend circle" about gender and STEM. The work she did with the girls' STEM club reached other educators beyond her. Part of her discomfort might have been with administration's notions of teacher leadership as implementing professional development, although by sharing her experiences informally with colleagues, she was influencing the other teachers' professional development. Her university advisor was able to help her think of ways that she might disseminate her STEM club model and view its impact as running beyond teacher professional development. And yet, as an enactment of distributed leadership, the mismatch between Abby's project, her and her administrator's beliefs about teacher leadership, and district priorities meant she was unable to maximize that impact and that the leadership was owned solely by her.

Roseanne

Teacher leadership. Roseanne is a ninth-grade high school science teacher. Prior to her participation, she perceived a teacher leader as "someone who is a role model in the department." Elaborating, she reflected, "I wanted to be someone who was a 'leader' in the department, but I didn't (and still don't) want to leave the classroom/become an administrator" (Year 1, June). Her definition aligned with how her district coordinator, George, envisioned teacher leaders—as those who assist with administrative tasks and particularly with professional development. He described teacher leaders as

> people who know their subject matter and are willing to . . . help point the way for those who are not as aware of the subject as they are. And also who have a good handle on . . . the methods of teaching science where the children will . . . understand it and are willing to share it will others. (Year 1, June)

He saw teacher leaders as those who "carry the torch and, you know, to continue

to help us with professional development" (Year 1, June). He expected that "the Wipro SEF fellows would certainly be a help to have around as we roll out the K–5 NGSS [Next Generation Science Standards]" and "help turn-key information about NGSS" (Year 2, December). We noted that his definition seems to suggest a notion of teacher leaders as implementers of policy, teachers of influence who can help support the agenda of the district, state, or nation. The emphasis is less on the agenda of the teacher leader and more on how others can be influenced by her work.

Interactions within the context: Internal and external constraints. From the beginning, policy context and district administrator beliefs became significant variables in how Roseanne's teacher leadership plan played out. All of the districts in the Wipro SEF program had been tasked with rolling out the NGSS K–12, and therefore all of our fellows were coming into their teacher leadership year at a time when this policy contributed to the pressures their administrators were facing. All of the administrators identified NGSS as a significant policy context and hoped that the Wipro SEF program could help them with it, as there was little district funding for professional development to support teachers in its implementation. Roseanne noted that her teacher leadership plan aimed "to create a learning community for the co-teachers in the science department to have a place where they could feel comfortable and receive support for their work in the classroom" (Year 2, September, teacher leadership plan). She hoped to develop a "professional learning community" to support science teachers' work with their special education inclusion partners. Her teacher leadership plan stemmed from observing that "teachers are not always given the tools or support needed to succeed in a co-teaching environment" (Year 2, September, teacher leadership plan) as well as her own experience with multiple and rotating support teachers with whom she never had time to plan. Through meetings with teachers and inclusion co-teachers, Roseanne isolated the significant issues facing inclusion and co-teaching in her school. In her December log (Year 2), she described some of the administrative issues that led to co-teaching problems. In particular, she discussed the lack of support from inclusion co-teachers during lab periods, "lack of a common prep time," and "scheduling inconsistencies." She knew these were structural stumbling blocks that must be overcome to improve co-teaching. Interestingly, though her plan aligned with her definition of teacher leadership, her district coordinator saw her work as outside of his agenda to support the new standards implementation. The policy context became a limiting factor in his own ability to support a teacher leader outside his priorities.

Roseanne's teacher leadership plan required assistance from school and district leaders but also required her own transformation. She explained, "I basically have always just kinda 'kept my head down and did my job,' and between that and the hugeness of the school, I don't really have a close relationship to either the principals or the vice principal" (Year 2, September). Though the school had a newly

created School Improvement Committee, the effectiveness of this committee in implementing change was uncertain. Roseanne relied on her district coordinator as the best means to support change, and yet George may not have envisioned such a role in the change process. He explained that while he was happy to do whatever was required of the program, he also felt bound by the structural roles within his district. For example, although he wanted to support Roseanne with her work with inclusive co-teachers, he felt he did not necessarily have the authority to do so, as Roseanne narrated in her Year 2, December log:

> [The district coordinator] mentioned that he had spoken to the special education supervisor at some point about the science inclusion teachers, and she had indicated that she didn't have much to work with regarding which inclusion teachers taught in the science classes. I still feel strongly that there has to be a better way, as our system as it stands is not functioning for either teachers or students.

Her administrative team seemed unable to provide the support she needed, and for her, both internal and external constraints inhibited the distribution of leadership.

University mentor. Despite her work to improve instruction in inclusive science classrooms, Roseanne realized that neither she nor her district coordinator had the power necessary to make systemic changes. In many instances, Roseanne reached out to her university mentor to support her in thinking about how to manage these structural roadblocks, and at different points, her university mentor went with her to meet with the district coordinator and special education coordinator, emphasizing the importance of engaging multiple players in her teacher leadership context. Through the widening social network afforded by the program, Roseanne was able to find mentorship for her teacher leadership outside her immediate community. However, the district coordinator's role was significant and highlights how the coordinators' notions of teacher leadership can inhibit or expand the realm of possibilities for participants. Roseanne applied for a third year of funding from the program and, with coaching from her university mentor, was finally able to achieve some structural changes at her school; inclusion teachers became paired with content teachers and were no longer spread across different subject areas. Roseanne's case suggests the potential for other relationships that might support teacher leadership and intervene with district and school culture in a positive way.

Oscar

Teacher leadership. Oscar is a high school inclusion science teacher. He initially viewed teacher leadership from a formal administrative perspective, assuming his work would involve coaching other teachers. He described his experience as follows:

> I had a district role that was a semi-administrative role and I was coaching some of the other teachers and I was doing a lot of trying to change what other teachers

> were doing by giving them correct information so it's like a lot of correction that I was trying to do. (Year 2, June)

He soon found out that this was not an effective way to bring about his hoped-for change.

After struggling with his initial view of teacher leadership, Oscar realized that a teacher leader was not a "quasi-administrator" or a "boss teacher." He needed to take a different approach: "I don't know the correct way to refer to it but it's like, leading through servitude." He also described it as providing access to materials he has developed and shared. He explained his vision:

> So I have an idea . . . and instead of saying you should do this because it could work what I've done a lot this time has been, I've put this together I've seen that it works and I'm making it freely available to you and you do what you want with it. . . . Even if you decide not to do anything with it I'm happy to give it to you and I've realized that for me that's been a little bit more effective—people are more receptive to working with it and it takes my ego out of it. (Year 1, June)

Oscar's internal definition was well matched with a distributed leadership approach— he was focused on building relationships with others, something fundamental to sharing activity with others.

Interactions within the context: When definitions of teacher leadership are well aligned. Similar to Oscar, his district coordinator, Anna, described the tension between being a formal teacher leader who plays an administrative role and an informal teacher leader working collaboratively with teachers. She initially likened it to her shift to becoming an administrator but then reflected that it was more about the collaborative and collective practice of sharing knowledge. She saw the role of her fellows as teacher leaders as

> not necessarily volunteering them for extra duties and things just because they're cooperative but somebody who, who is able to say to them, you know, "Have, have you ever thought about this?" or "Why are you doing certain things in the classroom?" (Year 2, December)

Their shared definitions supported the work of distributive leadership within Oscar's project and across the school.

Oscar designed his teacher leadership plan around creating videos based on science research. To do so, he interviewed scientists in Panama who described their research and then edited their interviews to insert questions about his students' course content. His goal was to create a series of videos by teachers "designed specifically for students using actual research" (Year 2, June). Similar to Abby, the context of his students was significant in how he thought about teacher leadership. He wanted to help his students learn how to do science research, because "students need to understand how research works." As he explained, his teacher leadership plan "taught me I need to develop more of a focus on teaching research as a practice and I need to

become better at getting other teachers to see that too cause I think we're so focused on content rather than applied content" (Year 2, June). Unlike Abby, his beliefs about teacher leadership led him to see a project based on student and classroom needs as something relevant to all teachers in the school. In doing so, he was able to engage others in the work in meaningful ways. His colleagues were also enthusiastic about his videos, offering to use them "in their classes and allowing their students to complete surveys for me so I actually had some solid data to see if these were actually working" (Year 2, June). What is noteworthy is not that his colleagues were helpful but that he found meaningful ways to engage them.

Anna, Oscar's district coordinator, noted that fellows have the potential to be successful if their schools' administrative cultures are supportive (Year 2, December). Anna was able to support the fellows with their initiatives despite that she viewed her district as in a "kind of upside down at the moment" (Year 2, December). She explained that they had an interim superintendent with no assistant superintendent or director of curriculum. These structural gaps made it challenging to move initiatives beyond the school building, as it was difficult to get approval. Thus the context of the teacher leadership actions—in Oscar's case, instability in the district administration—is important to understand.

University mentor. Oscar described the support he received from the fellowship program as a "sense of backing." He acknowledged that from the start, his superintendent and immediate supervisor supported the work, and therefore, as he reflected,

> They know that if I'm doing something that maybe strays from the direct curriculum a little bit, could be a little bit risky, it might not work, I'm not afraid of things not working because I know that they know that I'm doing this for a good cause . . . and I know that that good cause is being represented by Wipro SEF [fellowship program]. (Year 2, June)

Oscar received a great deal of support for his project, and as a result of his experience in the program, he gained confidence in his role as a teacher leader. Initially, he struggled to find an area of leadership he was passionate about, but with continued support from his university mentor, he was able to find a focus. He realized that developing the teacher leadership plan was a learning process. He described his work with his mentor: "She was instrumental in getting me to realize that I could do more, more than what I was actually going to do for my [teacher leadership plan] earlier on" (Year 2, June). Again, we note the university mentor's role as a secondary influencer in helping teacher leaders' work and actions. An expanding network of resources who may provide different resources than the district coordinator is part of what we noted in looking at the program's influence.

David

Teacher leadership. David is a middle school science teacher working in a K–8 school. He defined a teacher leader as someone who is a go-to person for other teachers. For him, this meant sharing his passions for teaching science and science content knowledge with his fellow teachers. Melissa, his district coordinator, similarly defined a teacher leader, based on actions "either that help to improve the situation that they're in, in a school situation either for the, for their colleagues, for their students, or for themselves" (Year 2, December). Thus their visions were well aligned.

David's teacher leadership plan was motivated by the idea that "teachers were not able to or they didn't want to teach science at the elementary level" (Year 1, June) for a number of reasons, including lack of content knowledge, time, and interest. He wanted to strengthen his colleagues' content knowledge and improve their science teaching by incorporating the NGSS and focusing on the practice of modeling. In his own words, his goal was to "improve their ability and the willingness just to teach science" by becoming a mentor to them (Year 1, June). He reflected that by "using the NGSS and the scientific practice of modeling I was able to help teachers design unit plans that we hoped would improve student learning but more importantly improve teachers' attitudes toward teaching science" (Year 2, June). He wanted to increase active student engagement so that "it's not just learning by doing it's learning by data and it's not about getting it right or wrong it's about how the whole process is important" (Year 2, September). Central to David's successful work in his teacher leadership project was how well aligned his work was with the policy context the district and school faced: implementing the NGSS.

Interactions within the context: Promoting the agenda of the district. David's approach was to impact his colleagues in his elementary school through first influencing his district. He reflected that the large size of the district impacted teacher leader success at the local level, which seemed to resonate with the ways that Melissa, his district coordinator, envisioned teacher leadership. She realized that she was only "one person dealing with 17 schools. . . . So just helping to build that capacity for leadership" was challenging (Year 2, December).

His school administration allowed him to "approach teachers and work together to improve science teaching" (Year 2, June), thus acting as a facilitator of leadership. As word of his work spread, other teachers expressed interest in working with him, and his network of influence began to grow. For him, the most meaningful outcomes from the project were the teachers' reactions. David felt he succeeded in helping the teachers feel they could teach science, but more important, the teachers realized that "when done right the benefits go above and beyond anything they could have imagined" (Year 2, June). By the end of his fellowship, David hoped that with support from his district coordinator, he might include more teachers in his project and continue to improve the science teaching practices in his district.

Melissa also saw David's teacher leader role as valuable, but her perspective was slightly different. She considered David a formal teacher leader for the district who could help to "turn-key a lot of the NGSS training," as fellows had already done a lot of professional development. She envisioned that part of the role of the Wipro SEF fellow was to fulfill the needs of the district. Again, we see a sense of teacher leaders as implementers of hierarchical needs and agendas as opposed to those agendas set and created by the teacher leaders themselves.

University mentor involvement. The Wipro SEF fellowship gave David a platform to put his plan in action, and he was able to approach teachers and confidently ask them to participate in his teacher leadership plan. David recalled, "If I was doing this on my own I would have come across as some crazy guy! I don't know how they would have interpreted it" (Year 2, June). In David's situation, we saw little mention of the university mentor as anyone more than an external support in clarifying ideas, creating structures, and helping to move the project forward through the teacher leadership structures. It suggests to us that when the district agenda is well aligned with the teacher leader agenda, there is little need for an outside mentor; rather, the structure of the program serves as a vehicle for providing impetus for the work.

Discussion

Our cases, considered as a whole, reveal the various ways in which the fellows developed as teacher leaders. We found that even when participants at multiple levels were willing, interested, and able to participate in a distributed leadership model, the reality of internal and external constraints hindered their enactment of distributed leadership. Some fellows focused on helping their colleagues by providing professional development to or sharing resources with their peers. Others focused on their pedagogical impact on students, creating innovative curriculum or developing students' understandings of science. Some started with a clear-cut plan, whereas others allowed their plans to emerge as the year went on. How these leadership plans unfolded was based on a complex interaction of players, beliefs, students, and policy context. Even with similar professional development, resources, and support from the university, the enactment of teacher leadership was highly differentiated. In some cases, university mentors were able to disrupt the constraining conditions of leadership enactment, but even in those cases, it sometimes meant that the complexity of the context limited potential impact.

Definitions of Teacher Leadership

Across the fellows and other participants, internal constraints—in terms of how participants defined teacher leadership and how well those definitions aligned with others'—had a significant impact on the scope of the work fellows did and on how

others perceived their work. David and Oscar both had district administrators whose definitions of teacher leadership were well aligned with theirs. Consequently, their projects were well received by their supervisors, and they were able to maximize their influence and impact with their peers. For Roseanne and Abby, however, this was more complicated. Abby, who believed that teacher leadership work should involve more than working with students (even though her work met an important societal need of supporting girls in STEM education), struggled to engage others and widen the impact. Although her supervisor gave her tacit support, it was not until we were able to make sense of how their shared definition of teacher leadership (of needing to work with other teachers) led to a more limited landscape for her work that her university mentor could step in to work with her concerns. Thus support alone is not sufficient for maximizing teacher leadership work. Similarly, Roseanne's understanding of teacher leadership also subtly misaligned with that of her supervisor. In this case, although both felt that teacher leadership involved work with others, her supervisor saw the Wipro SEF program as a means to get teacher leaders to implement policy initiatives. This slight nuance in his definition had significant implications for Roseanne's ability to bring about real change for her peers and students. The focus of our analysis was on the complexities that seemed inherent in (and emerge from) the interactions between teacher leaders and administrators. In particular, we were interested in uncovering how our teacher leaders navigated that complex terrain. We acknowledge that other factors could contribute to this complex relationship, namely, gender, race, age, and culture. An analysis through this lens would no doubt reveal further intricacies in teacher–administrator interactions.

Interactions Within the Context

Teacher leaders saw personal/organizational change as a process. They saw themselves as part of a network of teachers trying to enact change among a community of players, including administrators and other teachers. However, many district coordinators saw teacher leadership as a useful means to enact larger policy initiatives. In particular, there seemed to be a shared concern about the implementation of the NGSS; the district coordinators saw the teacher leaders as potentially having a key role in the dissemination of the changes associated with these new standards. While not problematic, such messages changed the *nature* of that leadership, and it became far less "distributed," as the teacher leadership did not arise from the fellow's own agenda. As the literature on distributed leadership has told us, leadership work involves interdependence among multiple players. It is not enough to say that teacher leadership is distributed and that administrative support is important; it is important to understand the factors and supports that can enhance work distribution.

For some of our teacher leaders, this was challenging. For instance, it took Abby

a full year of experience as well as the encouragement and validation of her university mentor to acknowledge that her organization of two STEM afterschool clubs was making a significant impact. In her third year of the leadership project, she began to invite other teachers to participate and examine the data that she collected from the students. She may have had more confidence to invite other teachers to collaborate with her earlier if she had initially believed that she was engaging in teacher leadership practices. In another context, Roseanne's need to get support for structural changes meant she was deeply dependent on others to enact her work. The task of building better and more opportunities for inclusion and subject area teachers to engage in effective collaboration meant that others had to support her in making space for those structures. Over the two years of the fellowship, she slowly gained traction around her initiative and, at the same time, brought teachers together to do what they could within existing structures. The leadership was interdependent—owned by the teachers, Roseanne, and the supervisors working with her.

We realized that one of the challenges we faced was helping to navigate the concerns and needs of district coordinators. Because our framework (and experience) suggests that teacher leadership is likely most successful when the teacher leader's interests are aligned with the school's or district's vision, we may need to rethink how we prepare both teachers and other school/district members (e.g., principals and coordinators) for teacher leadership work. The literature on distributed leadership has told us that maybe we should move our focus to relationships rather than focusing on individuals and that this would have implications for how we might think about situating a university-based teacher leadership program, or any program that supports teacher leadership.

University Mentors

The program and external support from university mentors allowed fellows to try new actions and become more confident about their teaching and leadership abilities. We became aware of how the structures of formal, university-endorsed professional development can give validity to the work of teacher leaders and support them in taking risks learning from unsuccessful attempts. For David, university validity was particularly helpful, as it enabled him to have a "story" that went with his appeal to other teachers. Because leadership involves many people, finding ways to include others and making change collaboratively are significant tasks. He knew that building collective capacity was essential for enacting his leadership work. The program also expanded networking opportunities for emerging teacher leaders. In instances where district coordinators or others were not supporting teacher leadership fully, the fellows were able to turn to their university mentors for support.

In thinking about the role of university mentoring, we were aware of how important differentiating our support was for our fellows. Helping fellows obtain relevant resources was sufficient support for some of our participants, while others

needed guidance in providing professional development sessions. Such a finding is important for thinking about how best to develop teacher leaders; like students, teacher leadership professional development experiences must be differentiated. As our framework emphasizes, "leaders' practice (both as thinking and activity) is distributed across the situation of leadership, that is, it emerges through interaction with other people and the environment" (Spillane et al., 2004, p. 8). Thus the university mentor must consider the local context of each district. For example, the university mentor working with Roseanne knew that face-to-face meetings were essential to making change in her district but underestimated the power the district coordinator had to support her in her work. It took multiple meetings to figure out who might be the best support as she moved forward. Additionally, it was important to scaffold these kinds of conversations for Roseanne, who had never individually sought out a conversation with somebody she perceived to be a person with authority. To help Roseanne do her work, she needed someone to model those conversations. By the third year, Roseanne began to have some of these meetings on her own, despite some anxiety. Oscar had little need for this kind of support. He had other needs that were specific to his district and context. The program enabled him to build resources (the videos) as part of his leadership work with other teachers. Leadership support in Oscar's case involved corralling resources to help him enact his work.

Conclusion

Enacting teacher leadership in schools is both highly complex and undertheorized in the literature. This article explores how the district context—teachers, administrators, students, and policy—influence teacher leadership when the participants are additionally supported by university mentors. Using the distributed leadership framework helped us pay attention to the nuances in how participants interacted within a series of relationships. We discovered that, rather than paying attention to the individual engaging in teacher leadership, it is essential to understand teacher leadership as a series of interacting relationships taking place in linked contexts. This has important implications for how we construct professional learning around teacher leadership; rather than focusing on the individual, the context of the work needs to move to the forefront, and university mentors need to understand the forces at play among participants. Engaging in teacher leadership support in the context where it happens is an important implication of using a distributed leadership lens.

For one, while the literature on teacher leadership has described the importance of administrative support, we found that a number of factors influenced administrators who professed support for fellows in the program. The policy context provided a particularly salient layer of pressure on administrators, who were less likely to support work that was not directly connected to the task of implementing the NGSS. Another

key finding was that participants' own definitions of teacher leadership both helped and hindered them in how they viewed their work, who they brought in to work with them, and how they asked for support. When teacher leaders had clearly defined notions of teacher leadership, the projects were more easily developed and enacted, and participants found more support for their work. One implication of this finding might be that emerging teacher leaders need time to explore how they define teacher leadership and opportunities to unpack those definitions so they can better understand how they might influence teacher leadership work. Finally, we found that university mentors can play an important role in coaching within the context and providing an additional role beyond what has been noted in the literature on teacher leadership (e.g., providing course work and professional development). Through both formal and informal interactions, when fellows faced challenges, the university mentors were able to think about how to help the teacher leaders and the district administrators better navigate a complex environment.

This study has helped us to think about how we can more strategically address the needs of our fellows in their development as teacher leaders. More broadly, our work has implications for how universities and professional development programs can foster teacher leadership and address some of the complexities of this work in schools. The focus on specific actions and supports that teacher leaders need in a highly complex policy context has led us to think about how to promote sustainable change through teacher leadership. Year 2 of the program made clear that this work requires a multipronged approach where work is conducted not only with teachers but also with school administrators. We are now preparing to invite school principals into our fellowship program so that they can collaborate with the fellows and strategize the best ways to harness their synergy, lending more insight and transparency to the role of teacher leadership in the district. We are also developing a collective notion of change, recognizing that teacher leaders cannot work alone to make change. Our findings remind us that we need to pay attention to encouraging school cultures that embrace and recognize a continuum of formal and informal teacher leadership.

Acknowledgments

Note

[1] Although the group consisted only of science teachers, our analysis did not find that the content specifically affected the way that teacher leadership was enacted in their schools and districts; content was not a particularly salient point identified by the teacher leaders or noticed by the researchers.

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