Mathematics and Equity:
Developing the Leadership of Experienced Teachers

Annual Meeting of the American Educational Research Association
Montreal, Quebec
April, 2005

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This research is funded by the National Science Foundation, Grant #ESI-0101995. Opinions expressed in this paper are those of the authors and do not necessarily reflect those of NSF.

Purpose

This study documents the developmental changes that teacher leaders in mathematics education experienced in a three-year period of intensive professional development that promoted leadership, mathematics learning, mathematics teaching, and equity. An abbreviated story of the evolution of teachers' roles as leaders in their schools and districts is told here.

Background

The goal of a five-year NSF-sponsored teacher retention and renewal project was to create and implement a viable model for retaining competent beginning and experienced K – 12 teachers in the teaching profession and at the same time increase their ability to effectively teach mathematics. In the project, two cohorts of approximately 30 teacher leaders each received intensive mathematics professional development over a three-year period; the first cohort started in 2001 and the second cohort in 2003. These teacher leaders developed and implemented strategies to mentor newer teachers in their districts. The teacher leaders conducted 21 hours of seminars for beginning teachers, visited classrooms, taught model lessons, and coached beginning teachers each year. In the project, leadership is developed by helping teachers find their voice, increasing their confidence, and deepening their understanding of equity and mathematics. We trust that teachers will use their knowledge and understanding for effectively supporting teachers new to mathematics teaching.

Theoretical Framework

In the project, *leadership* is defined as *taking responsibility for what matters to you* (Weissglass, 1994). For teacher leaders in this project it means moving beyond classroom responsibilities and taking an important role in shaping the future of the profession by supporting beginning teachers in teaching mathematics. Early definitions of leadership and research on leadership focus on the characteristics and qualities of individual leaders, usually those in formal administrative roles. However, more recent research provides alternative conceptions of leadership. Lambert (1998), for example, describes leadership that involves learning together in a community and constructing meaning collaboratively. And teacher leadership, particularly its role, function, and purpose, have been the focus of numerous studies in an effort to understand the challenges, contributions, and complexities of this form of leadership for educational reform (Hart, 1995; Little, 1995; Smylie, 1995). We draw on these and recent work in distributed leadership theory, as described by Spillane and Sherer (2004), to examine teacher leadership and the development of teacher leadership in this study.

Distributed leadership theory conceives of leadership beyond that of the school principal and acknowledges informal and formal leadership roles, including that of teacher leaders. Spillane and Sherer's view of distributed leadership focuses on the enactment of leadership – the activity of leadership- "stretched over the practice of two or more leaders, their followers, and their situation" (2004, p.6). This interplay or dynamic relationship between the leaders, the followers, and the context of the situation (i.e. tools, resources, language, culture) is both influenced by and determines the leadership practice

in a school setting. These ideas of distributed leadership in a school setting may also be applied to a leadership development process in a mathematics professional development program, where the interaction between and among teacher leaders, the beginning teachers, and the context in which they operate shapes the leadership activity. Spillane and Sherer (2004) describe three ways in which leaders interact and in which leadership activity takes place: collaborated, collective, and coordinated distributed leadership. In collaborated distribution of leadership, leaders work together and are dependent on each other's practice. Leaders working in collective distribution work separately, but interdependently, as they work for a common goal. Coordinated distribution is leadership that involves the completion of an ordered series of tasks that are dependent upon one another. In the project under study, leadership can be viewed as both collaboratively and collectively distributed. Teacher leaders' work is collaborative as teams work together to plan and conduct mathematics professional development sessions for beginning teachers. Teacher leaders' activity is collective as teacher leaders work on a one-to-one basis with beginning teachers toward a common goal of supporting new teachers in the profession. Distributed leadership that focuses on the actions and responsibilities of leadership, rather than on the leaders as individuals, are used in this paper to explore teacher leaders' views of their roles and responsibilities and their leadership development over time.

One specific role that teacher leaders often assume is that of *mentor* to teachers who are new to the teaching profession. The research literature has documented several conceptions of mentoring. Two conceptualizations proposed by Cochran-Smith and Paris (1995) split mentoring practices into a hierarchical expert-novice relationship as contrasted with a collaborative mentoring relationship that supports new teachers in challenging conventional ideas about teaching and schools. Feiman-Nemser and Parker (1993) compared two mentoring programs and found that, in one program, teacher leaders acted as *local guides* for novice teachers in explaining policies of the district, sharing materials, and good teaching practices. At another site, Feiman-Nemser and Parker found mentors who acted as *educational companions* or as co-learners in a long-term partnership or enterprise in supporting teachers as they developed new classroom strategies and sound teaching practices. Although no mentors in the study identified themselves as such, Feiman-Nemser and Parker delineated a third category of mentorship, that of mentors as *agents of change*. In this role, mentors encouraged collaboration and shared inquiry in order to socialize novice teachers to the norms of teaching standards and practices.

In a critical review of the literature on mentoring programs, Wang and Odell (2002) describe prevailing mentoring practices and the conflicts these practices can pose for learning to teach in a standards-based reform system. The assumptions underlying standards-based reform classrooms are often in opposition to mentors' expectations for novice teachers. Wang and Odell (2002) argue that further research in the content and process of mentoring that supports standards-based reform is needed. We agree and argue that in particular, further research is needed on the ways in which mentors learn to support novice teachers in the context of a reform movement that calls for teaching all students and promoting excellence for an increasingly diverse student population.

As described in the national reform document *Principles and Standards for School Mathematics* "the vision of equity in mathematics education challenges a pervasive societal belief in North America that only some students are capable of learning mathematics" (NCTM 2000, p. 12). Equity is the core element of this standards-based reform vision and thus a critical component of the development of teacher leaders in mathematics. Still, there is little in the literature that addresses leadership development in regard to educational equity. Boyer (1990) developed an eight-stage theory about individual ethnic growth, in which he outlines a person's progressively sophisticated multicultural view of self and society. These stages are generalized to the classroom environment and begin with *Non-existence* (a complete absence of cultural elements), followed by *Existence*, *Tolerance*, *Recognition*, *Acceptance*, *Respect*, *Appreciation*, and *Celebration*. However, missing from this eight-stage theory is an activist or critical lens that describes a stage where the "self" (teacher or learner) sees him or herself as a change agent. Weissglass (1998) proposes four stages that incorporate an activist lens in describing educators' development of leadership for educational equity. These stages are (1) Resistance or lack of awareness, (2) Awareness of the need to address equity, (3) Deeper understanding and commitment to address equity, and (4) Pursuing change through strategic action.

The design of the project under study incorporates opportunities for teacher leaders to collaboratively construct meaning of equity issues, particularly of how race, class, and gender bias affect mathematics teaching and learning. Previous studies indicated that when teachers work together with colleagues to improve their practice and reflect on their practice, they are better able to teach mathematics (Brown & Smith, 1997; Putnam & Borko, 2000). Teacher leaders can have an influence on building the pedagogical content knowledge of teachers, however, few research studies have explored the development of teacher leaders themselves as they promote mathematics reform efforts. And in particular, few have considered teacher leaders' conceptions of equity in their leadership development, despite the focus on equity and access in mathematics reform documents.

The research questions explored in this study are:

- *In what ways do the teacher leaders' views of themselves as leaders change during their participation in a mathematics leadership professional development program that also supports beginning teachers?*
- *What do teacher leaders view as their role in promoting equity in mathematics education?*

Methodology

In order to understand the process of developing leaders in mathematics education, we prepared and administered open-ended response questionnaires to the first cohort of leaders. The responses to the prompts were analyzed using the constant comparative method of analysis (Glaser & Strauss, 1967). This study uses a grounded theory approach to explore the development of leaders and the changes in understanding equity issues at the district level. The teachers' responses were coded and categorized and three stages of leadership emerged, which illustrated what the teachers saw as their developing role as mentors to beginning teachers. As the stages of leadership began to emerge, we analyzed

the large group discussions that took place during the professional development sessions related to leadership and equity. Further triangulation of the data was made during the semi-structured interviews with a subset of teachers in the first cohort. We were interested in finding out whether the teacher leaders in the second cohort would see their roles in supporting beginning teachers in similar ways; thus, we coded and categorized the responses from the second cohort of teachers.

Data Sources

The corpus of data collected for this study is comprised of open-ended responses from questionnaires, semi-structured interviews, and participant observations of professional development sessions.

1. Open-ended Responses. Each of the 29 participants in the first cohort provided written responses to a questionnaire administered at the beginning of the project and at the end of each of the three years of the project. Teachers were asked to respond to the following prompts: "How do you see your role in supporting beginning teachers to become more successful in teaching mathematics?" and "What do you think are some of the issues relating to equity and mathematics in your educational setting?" The teachers were given their written responses from previous years and asked to respond again to the same prompts. In the third year of the project, a second cohort of 32 teachers was administered questionnaires at the beginning and at the end of the first and second years.

2. Semi-structured Interviews. A purposefully selected subset of the teacher leader participants from four of the nine participating districts were interviewed in their first and second years of the project.

3. Participant Observation of Professional Development. Observation notes of 29 professional development sessions that the teacher leaders attended throughout the three years were analyzed. In addition, 16 professional development sessions that the teacher leaders conducted for beginning teachers were evaluated.

Results and Discussion

Research Question 1:

> *In what ways do the teacher leaders' views of themselves as leaders change during their participation in a mathematics leadership professional development program that also supports beginning teachers?*

During the analyses of teacher leaders' reflections on their role as leaders over a three-year period, three general categories for leadership emerged. As we reexamined the data after each data collection cycle, we found, generally, that teachers progressed through three distinct stages of leadership for teacher leaders, that of *Teacher Leader as a Resource*, as a *Builder of Relationships*, and as *Change Agents*. Further explanations of each stage and examples of teachers' reflections follow.

Stage 1: Teacher Leader as Resource

At the beginning of the project, teacher leaders envisioned their role as a provider of information and strategies for teaching, i.e., as a resource for beginning teachers. Analyses show that the teacher leaders entered the project with a number of different views of their leadership role. Teacher leaders mentioned that they saw themselves as a resource, as a friend, and as a good guide to mathematical practice. Teacher leaders generally saw their role in the beginning of the project as a resource for ideas, materials, mathematics knowledge, and pedagogy, and also as a sounding board. Overall, teacher leaders saw their role as a provider or resource for learning the teaching craft.

Examples of teacher leaders' written responses that indicate the teacher leaders' role as a resource include:

> "I would like to help them build their knowledge base" (Teacher leader 11)
> "I plan to help beginning teachers improve their mathematics ability." (TL 31)
> "I hope to model a variety of teaching styles." (TL16)
> "I am now able to offer techniques" (TL13)
> "…offer assistance" (TL14)
> "…share my lesson ideas" (TL18)
> "I see myself as a resource" (TL20)

Stage 2: Teacher Leader as Relationship Builder

Teacher leaders see the importance of building a trusting relationship with their beginning teachers. Teacher leaders suggested that such a relationship includes listening, creating a safe environment for mathematics learning, and allowing teachers to communicate openly about fears and successes in the classroom. Examples of Teacher leaders' written comments that illustrate the *Teacher Leader as a Relationship Builder* include the following:

> "I now understand that as a beginning teacher begins to trust me, they ask questions more freely and begin telling me about strategies they have tried and how they have succeeded or failed." (Teacher Leader 6)
>
> "I am now more concerned with listening to their needs, rather than providing activities." (TL10)
>
> "Building trust would be my first goal." (TL12)
>
> "I have a growing understanding that my relationships are the center and most useful part of the program to my beginning teachers." (TL26)

> "Now I am more aware of the need to not just have "math workshops," but to also provide the professional and emotional support needed to ensure they remain in the profession." (TL14)

Stage 3: Teacher Leader as Change Agent

During the third stage of leadership development, teacher leaders see themselves as 'Change Agents'. Here the term *change agent* refers to someone in an educational environment who takes responsibility for asking questions, introducing topics of equity and access, and bringing to the forefront issues that generally are ignored at the district, school, and classroom level. The analyses of the data show that as teacher leaders felt more confident in their role as a leader, they brought equity issues into focus as leaders. Teacher leaders at this stage recognize the importance of talking about equity in their seminars for beginning teachers. Examples of teacher leaders' responses that fit into this category are:

> "Also I need to bring the more humanitarianism issues up with them once a safe trusting relationship is established." (TL16)

> "I continue to be challenged by equity issues in the school setting. When I look at and compare the ethnicity of our honors math classes to the potential retention list it is obvious that institutional racism is still rampant. I must continue to bring up all types of inequity, sometimes gently nudging others to examine their practice. Other times I must not be so gentle!" (TL8)

> "I have always seen myself as a worker for justice, but I began this program seeing very little connection between equity and math. I now see increasing ways that equity affects student learning and student opportunities, especially in the areas that are unspoken. I see my role increasing in leading students to see themselves as strong and capable, not limited by gender or color or class. And I am more willing to question, to speak up, to stir up the comfortable acceptance of "the way things are."(TL26)

It should be noted that not all teacher leaders wrote about building relationships or taking on equity issues in their responses.

During the first year, teacher leaders, usually in groups of four from each district, developed and conducted 21 hours of professional development sessions for the beginning teachers in their district. They also had a responsibility to visit their beginning teachers' classrooms and/or teach model lessons in these classrooms. In addition, the teacher leaders attended six daylong professional development seminars during the year. At the end of the year, the teacher leaders' responses for the same prompts were analyzed and an evolving view of their roles emerged. After one year, many of the teacher leaders stated that the relationship between the teacher leader (i.e., experienced teacher) and beginning teacher was very important in order to establish trust. With this trust the teacher leaders believed that the beginning teachers would ask questions freely, and more

readily confide in the teacher leader about their successes and failures in the classroom. These responses indicate that teacher leaders came to learn and understand the importance of building relationships during their participation in this project.

After the second full year of participation in the project, teacher leaders' responses indicated that they felt more confident in their role as a leader and as their confidence grew, they brought equity issues into focus as leaders. Some of the teacher leaders voiced concerns that equity issues were not discussed and were not taking a prominent place on the agendas for their two to three hour professional development seminars, called, Mathematics Education Seminars, and thus, had vowed to spend more time on equity in the next year. Other teacher leaders noted inequities in their schools and districts and stated that they need to personally take up this challenge. In general, at the end of the second year, the teacher leaders' perspective of their leadership role shifted towards being an agent of change in their classrooms, schools, and districts.

To illustrate the leadership development of teacher leaders, the responses gathered for three consecutive years for one teacher leader are shown in Table 1. The progression from Resource, to Relationship Builder, to Change Agent is illustrated through responses from one teacher leader during a three-year period.

Table 1. *Three-Year Progression of Leadership Development for One Teacher leader (Experienced Teacher) in project under study.*

Beginning of First Year (Summer 2001) I hope to help teachers improve their own mathematics abilities and perhaps look at solving computational problems differently… *Teacher Leader as Resource*
End of First Year (Summer 2002) …However, I also see a need to work on developing trusting relationships so that the preceptees feel safe and ready to take risks… *Teacher Leader as Builder of Trusting Relationships*
End of Second Year (Summer 2003) I see my role as Teacher leader as multi-faceted. Teachers need to find ways to teach concepts that will help all students be successful.… I am particularly challenged personally about the equity of our school program. I consistently see the advanced math classes with fewer minority students than our population dictates. I see more minority students scoring below proficient on the state standards. I need to address these issues personally and share them with our Math Professional Seminars. *Teacher Leader as Change Agent*
End of Third Year (Summer 2004) The results of racism are becoming more and more apparent in my school. I am very concerned and have begun addressing the issue at the administrative level….In addition to looking at the whole school issue, I am advocating additional help for students at-risk. We have band-aids to help students when so

> much more is needed. I've asked to offer a second math class to students who are struggling. *Teacher Leader as Change Agent*

In order to draw a clearer picture of the leadership development of the teacher leaders in the project, an analysis was undertaken of the responses from the 29 teacher leaders from the first cohort of the Project. Figure 1 illustrates the percentage of teacher leaders who gave responses that were categorized as one of the three stages (i.e., Teacher Leader as Resource, Relationship Builder, or Change Agent). The early conception of the role of teacher leaders as they began the project, that of Teacher Leader as Resource, generally diminishes at the end of the first year. The importance of building relationships emerges at the end of the first year and continues to be important at the end of the second year. No teacher leaders spoke of being an agent of change in the first two data collection intervals, however at the end of the second year, issues of equity emerged as important to approximately one-third of the teacher leaders. At the end of the third year of the project, approximately two-thirds of the teacher leaders reported promoting equity in various ways.

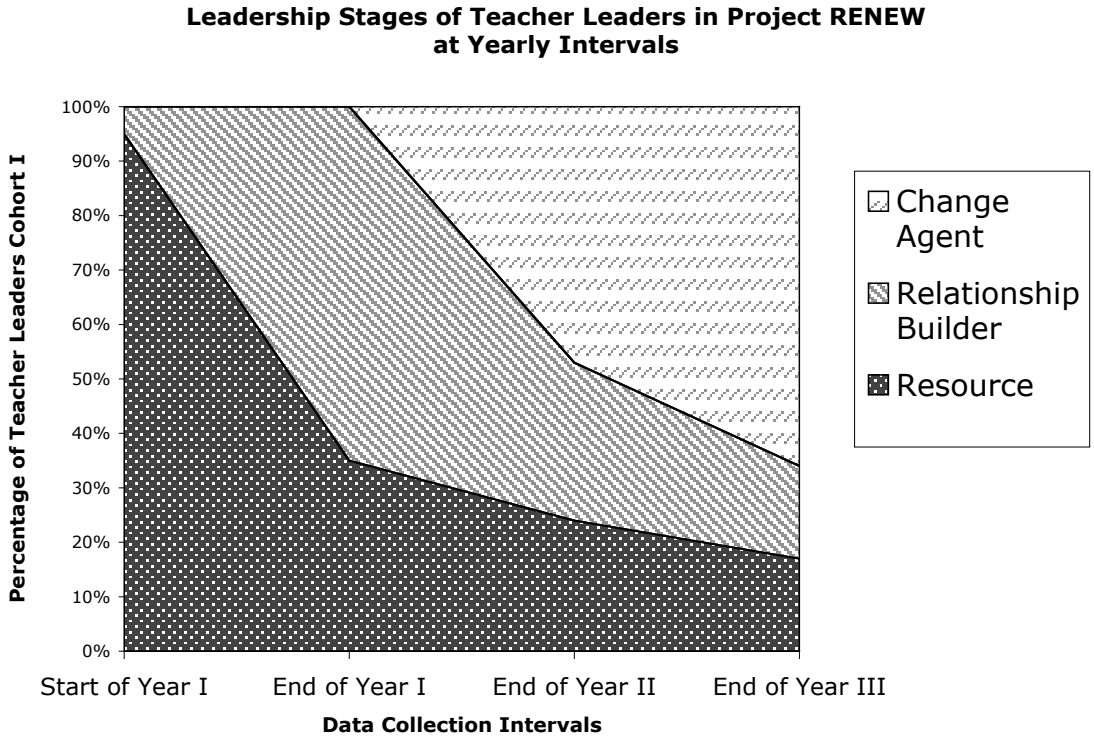

Figure 1. Percentage of Cohort I Teacher Leaders in each stage of leadership development at four data collection intervals.

Figure 2 represents the data from the second cohort of teacher leaders who began their first year of leadership during the third year of the project, concurrent with the third year

for the first cohort of teacher leaders. Figure 2 illustrates the striking similarity in the proportion of teacher leaders in the first and second cohort who held views about their roles as resource providers. At the end of the first year of leadership for Cohort II, 69% of the teacher leaders from the second cohort, saw their roles evolving to build relationships with their beginning teachers. These results are, again, similar to the first cohort of teacher leaders studied, when 65% of the leaders were classified as Relationship Builders. Such a finding, in a replication study, gives added weight to the reliability of the outcomes found in this study of leadership and the analyses of data from the first group of teacher leaders at the onset of the project.

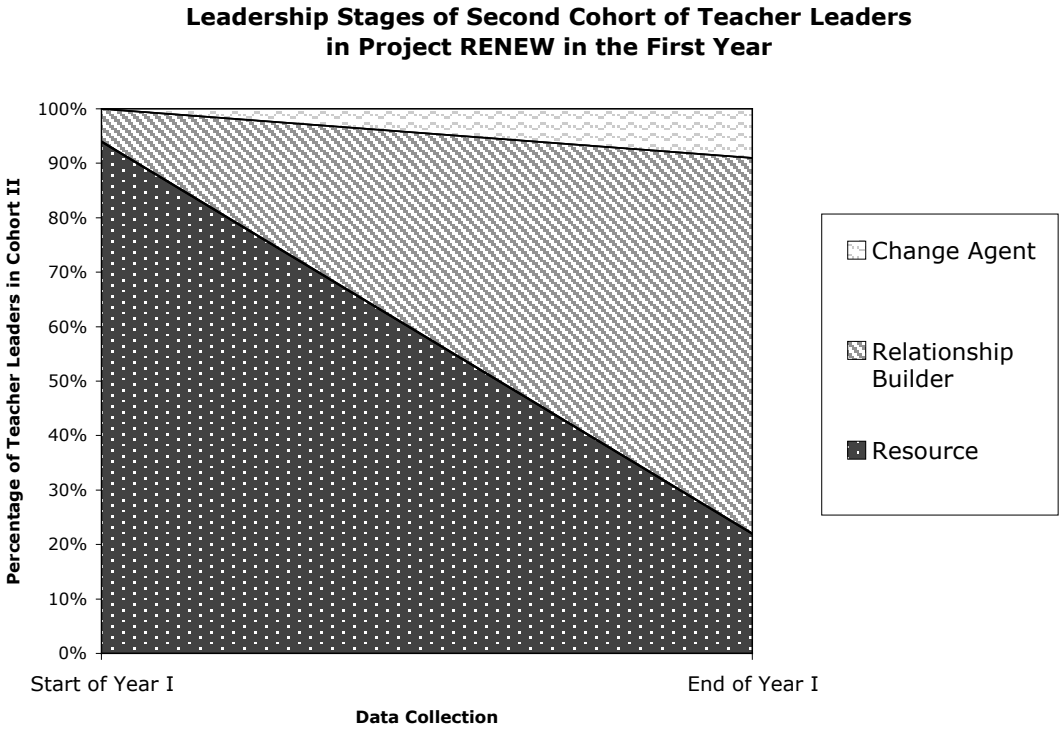

Figure 2. Leadership Stages in Cohort II: Percentage of Teacher Leaders from Cohort II in each stage of leadership development at two date collection intervals.

Research Question 2:

What do teacher leaders view as their role in promoting equity in mathematics education?

In analyzing the data from experienced teachers' questionnaire responses, interview data, and observations of professional development sessions through a grounded theory lens, we found three categories of *Teacher Leader as Resource*, *Teacher Leader as Relationship Builder*, and *Teacher Leader as Change Agent* emerging from the data. Further, in an analysis of the data for *Teacher Leader as Change Agent*, we found teacher leaders who were becoming more aware of equity issues, leaders who were helping

others to examine their practice, and others advocating for change in their school and districts. The term *change agent* has quickly taken on jargon status (e.g., more than twenty million entries on the internet include *change agent*), and thus, it is important to explore and explain what we mean for teacher leaders to become agents of change.

Some of the ways that experienced teachers in the project advocated for change are the following:

- Changing assessments to include more styles of mathematics learning
- Reducing or eliminating tracking according to mathematical ability in schools
- Using data to inform principals about unfair grouping practices
- Providing role models for culturally relevant pedagogy
- Offering Family Math Nights or Parent Nights
- Advocating for curricular change in mathematics
- Making accommodations for learning disabled students
- Speaking out about equity and access issues

The ways in which teachers took action are more readily categorized than the other more subtle ways that teachers promoted equity as individuals, in the classroom, at schools, and at the district level. The second research question called for further analysis of the ways that teachers promoted equity in their educational environment.

We documented and analyzed the types of ways that teacher leaders promoted equity during the three years as teacher leaders. The descriptions of the ways teacher leaders promoted equity are categorized according to the process that was taking place and the setting or realms where the equity issues were being considered. Some teacher leaders identified an awareness of equity issues, some leaders described equity issues that needed action, and others described ways in which they are currently taking action about equity. The realms in which the equity issues were described were generally the classroom, the school setting, or the district context. Tables 3 - 5 provide excerpts of Teacher Leaders' responses when talking about their roles as leaders and their role promoting equity in the classroom (Table 3), the school (Table 4), or the district realm (Table 5).

Table 3.
Promoting equity in mathematics education in the Classroom: Excerpts of Teacher Leaders' descriptions of their roles.

Awareness	Need for Action	Taking Action
"I know now that, more than ever, I must play an important role in making sure that my students feel safe and have a voice in my classroom." (Teacher Leader 20) "Because of the emphasis on testing taking this year, being a mathematical thinker was not fully developed." (TL2)	"I see my role as encouraging students to see themselves as strong and capable, not limited by gender or color or class." (TL26) "I am finding that English learners are falling through the cracks. Doing promotes equity. Children who are actively involved are learning- and that's what I want as their teacher, no matter how they have been labeled, sorted, or categorized. " (TL11)	I am making sure that all students have 'equal' opportunities for answering, learning, thinking, etc., but recognizing that 'equal' does not always mean fair." (TL2) " I am a more effective teacher when I see the individual in each student. Modifications that benefit one student can be adapted to benefit others. (TL9)

Table 4.
Promoting equity in mathematics education in the School Setting: Excerpts of Teacher Leaders' descriptions of their roles.

Awareness	Need for Action	Taking Action
"I've come to see that there are so many equity issues related to school. As well as racial and class and gender related, there are issues of disabilities, homophobia, and other differences. I am beginning to see some new ways of dealing with them with my fellow teachers." (Teacher Leader 26) "Some of the issues relating to equity and mathematics in my school are the background knowledge of the children coming into my classroom, home environments, availability of supplies, and parent involvement." (TL3)	Ability grouping in math is still an issue at my school. Although we are now discussing it, there is not open honest communication about the effect on our students." (TL10) "I think we need to look at the ethnic breakdown of our programs at my school- from Special Ed to Honors – and ask ourselves why we have the patterns we do and how we can change it." (TL20) "There is tracking in some grades, and I feel we need to speak out to ensure that some groups aren't denied opportunities." (TL26)	"My school has moved away from tracking somewhat in this past year, which has helped all student have more equal learning opportunities. We are also working with a variety of learning styles to make mathematics available to each child and to measure mathematical understanding in a variety of ways."(TL26) "I am promoting equity at my site by offering Family Math Nights and having teachers help in the activities. I let parents know how they can help their children at home become more mathematically powerful." (TL1)

Table 5.
Promoting equity in mathematics education in the District Context: Excerpts of Teacher Leaders' descriptions of their roles.

Awareness	Need for Action	Taking Action
"Students are tracked in middle school. … Interesting enough, when students reach high school, students have been weeded out of higher-level math courses." (Teacher Leader 12) "There are math materials that the district is providing to the English only classes which are not offered to the bilingual classes because they are not available in Spanish." (TL1)	"This project refreshes your resolve to make fellow educators, as well as yourself, sensitive to issues of race and gender in the classroom. We need to be bolder when we design our professional development for the beginning teachers. I need to be louder!!!" (TL37) "I consistently see the advanced math classes with fewer minority students than our population dictates. I need to address these issues personally and share them at our beginning teacher professional development seminars."(TL8)	"I have advocated for a mathematics program that has proven its success and effectiveness." (TL9) "I share what I learn from workshops not only with the beginning teachers I support but also with the whole school and friends in other schools." (TL1)

For the purposes of this study, the categories of *awareness*, *need for action*, and *taking action* are descriptive rather than sequential, although a trend was identified that the teacher leader descriptions of taking action tend to be discussed in later stages of their participation in the program. These were ways in which teacher leaders saw their roles in promoting equity.

Conclusion

According to the Glenn Commission (2000), over the next decade two-thirds of the teachers in U.S. schools will be replaced, either by retirement, attrition, or job change. In addition to a high attrition rate for new teachers, many veteran teachers report that they and their colleagues are experiencing "burn-out". It is imperative that researchers examine the dimensions of newly created professional development models that harness the leadership capacity of experienced teachers in order to renew and retain effective teachers in the profession. The ways in which teacher leaders' roles are conceptualized warrants attention, given the current efforts to implement standards-based reform in mathematics classrooms. Further, there is a critical need for teacher leaders who are knowledgeable about and who will take action for promoting change and challenging existing inequities in classrooms and schools. Thus, the development of teacher leadership that incorporates a focus on promoting equity should be examined.

In this study, teacher leaders' views of their roles as leaders were examined. In analyzing the data from experienced teachers' questionnaire responses, interview data, and observations of professional development sessions through a grounded theory lens, we found three categories emerging from the data. The first category, *Teacher Leader as*

Resource, often involved many aspects of educators' physical realities of learning to teach. Resources, such as teacher's editions of textbooks, materials for manipulatives, ideas for lessons, pedagogical 'tricks of the trade" and other guides to good mathematics teaching were noted in the interviews, responses and observations. The second category to emerge, *Teacher Leader as Relationship Builder*, often focused on the emotional needs of novice teachers. Experienced teachers talked about the importance of creating a safe environment, open communication, confidences, listening, and promoting a supportive environment for beginning teachers. A third category emerged from the data, *Teacher Leader as Change Agent*, which we define as one who takes responsibility for asking questions, introducing topics of equity and access, and bringing to the forefront issues that generally are ignored at the school, district, and classroom level.

In the data for *Teacher Leader as Change Agent*, leadership activity as described by the teacher leaders is discussed in the contexts of the classroom, the school, and the district and in terms of their processes of awareness, need for action, and taking action. Although mathematics education is the focus of this leadership development program, teacher leaders have extended their views of leadership activity for equity beyond the mathematics classroom. Given that these teacher leaders are from nine different districts with different student populations and are teaching in grade levels ranging from kindergarten through twelfth grades, the context in which they work and those with whom they work influence the ways in which their leadership activity is conceptualized and carried out.

Through this study we have developed a useful definition for *Change Agent* as applied to teacher leadership and have documented an evolution of teachers' views of themselves as leaders. We were able to observe and document their leadership growth and identify common characteristics of three stages of their development. A next step in this research is to examine the contributing factors to this development of teacher leaders. What specific leadership development experiences contributed towards their change in their views of themselves as leaders? What contributed toward their increasing identification of equity issues as important to address in mathematics education? In addition, how has this emphasis on equity issues in mathematics shaped the teacher leaders' work with beginning teachers? And, how does this work affect the mathematics learning experiences of students in the classrooms of the beginning teachers and of the teacher leaders?

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