

Teacher Leaders: Teaching, Learning and Leading

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Introduction

The adoption of standards-based curricula in the mathematics classroom presents unique challenges to schools and teachers. In particular, standards-based curricula alter the goals of the mathematics classroom – from procedural-driven objectives and toward problem solving and conceptual understanding. As part of the reform process, many teachers are adopting new and exciting roles as *teacher leaders*. In general, teacher leaders are extended professionals that have upgraded their knowledge and skills through workshops and/or courses on leadership, facilitation, and curriculum development. As schools adopt standards-based curricula, teacher leaders work collaboratively with colleagues and other staff to promote the needed paradigms shifts within their building or district.

In 2002, a Mathematics Science Partnership funded by the National Science Foundation, the Indiana University-Indiana Mathematics Initiative (NSF-HER 0227269), began providing comprehensive professional development for teachers in nine urban school districts in Northern and Central Indiana. The professional development component of IMI was designed to support the implementation of standards-based mathematics curricula and practices in each of the nine districts. Although the project promoted the use of reform curricula in middle grades classrooms and context-rich modeling activities in secondary schools, its principle success occurred at the elementary (PreK-5) level. In particular, elementary schools in eight of the nine districts adopted a common reform curriculum: *Everyday Mathematics* (UCMSP, 2002). Professional development at the elementary level, therefore, focused on *Everyday Mathematics* (EM) and providing teachers with the knowledge and skills needed to effectively implement the *EM* curriculum. Over the course of the IMI project, there have been three cohorts of elementary teachers: Cohort I (grades 2 and 5), Cohort II (grades 3 and 4), and Cohort III (grades PreK, K, and 1). In general, the timing of the professional development sessions mirrored the implementation of the curriculum. The professional development that Cohort II received, for instance, coincided with the implementation of *EM* in grades 2 and 5.

Research suggests that teacher-to-teacher professional development, with teacher leaders working directly with others in their school or district, can effectively promote and support curricular reform (Viadero, 2007). One of the principle objectives of IMI professional development for elementary teachers, therefore, was the identification of potential teacher leaders in the eight IMI districts that adopted EM. In theory, these teacher leaders would support the implementation of EM in their building and district. Once identified, members of the *Select Cadre* received training to prepare them for their challenging, complex and multifaceted roles as teacher leaders.

With over six years of experience, the IMI project has learned many lessons about the identification and effective use of teacher leader. This article includes reflections on the role of teacher leaders in the IMI project and offers specific insights about the following questions:

- (1) Who are the IMI teacher leaders?
- (2) How are teacher leaders identified?
- (3) What are the preparation and support needs of teacher leaders?
- (4) How do teacher leaders support and sustain student achievement?

By reflecting on the preparation and use of teacher leaders in the IMI project, the IMI project model may provide some guidelines and offer insights that perhaps others will find useful as they adopt teacher-leader models of professional development and curricular reform. There is evidence that support and professional development activities, including work on content knowledge, are major contributors to the success of teacher leaders.

Who are Teacher Leaders?

Teachers have long been serving in leadership positions, as departmental chairs and team leaders. Today's teacher leaders, however, are not teachers who complete schedules, place supply orders, and maintain an inventory of textbooks. Rather, teacher leaders are teachers *and* learners, integral agents of change, and facilitators, contributing to the improvement of teaching, learning, and student achievement in their schools and districts. Teacher leaders have special insights into the teaching and learning process, and willingly share their insights with others. Teacher leaders are adept at engaging students, displaying and modeling the reasoning strategies that students should learn.

It is not their skill as teachers, however, that distinguishes teacher leaders from effective classroom teachers. The primary distinguishing characteristic of teacher leaders is their commitment to school improvement. That is, teacher leaders do not define success in terms of what happens in their own classroom, but in terms of school-wide success and the development of their teaching colleagues. As compared to others, teacher leaders can clearly articulate the mission of the school and its exemplary programs and curriculum. Teacher leaders are passionate about supporting curricula change and school priorities, and willingly devote their time to promote *collective* professional growth in content and pedagogy.

Identification Model of Teacher Leaders

The IMI staff included a representative from each of the participating districts. Typically, these staff members were administrators, curriculum coordinators, or retired teachers. Working with others in the district, the IMI district representatives identified and recruited well-respected teachers to serve as teacher-leaders at each grade level. Over the course of the IMI project, over 60 teachers served as members of the Select Cadre.

Members of the Select Cadre varied widely in terms of background, experience, and skills. Personal characteristics exhibited by members of the Select Cadre included:

- The acknowledged respect and trust of colleagues
- Strong understanding of mathematics
- Effective organization skills
- An ability to instruct and lead groups
- Effective speaking and writing skills
- High level of commitment

- High expectations of self and others
- An ability to set and achieve goals
- An ability to work effectively with diverse individuals
- Willingness to model effective teaching strategies
- Knowledge of reform curricula
- High levels of energy and enthusiasm
- A vision and commitment to school and district improvement
- An ability to working collaboratively with others
- Receptive to the concerns of all administrators, teachers, parents and students.

While no one teacher leader possessed all of these characteristics, several of the characteristics were widely exhibited by members of the Select Cadre. These common characteristics can be thought of as the core skills of teacher leadership – and guiding conjectures for future research projects. Specifically, to what extent is each core skill related to one’s effectiveness as a teacher leader? The six core skills that appear common to all IMI teacher leaders include:

- A strong understanding of mathematics
- Possessing the trust and respect of one’s colleagues
- The ability to listen and communicate effectively
- An ability to effectively model teaching strategies
- A high level of commitment and enthusiasm
- Effective organizational skills

What Are the Needs and Preparation of Teacher Leaders?

Administrative support of teacher leaders is an essential ingredient of standards-based mathematics reform. To communicate effectively with classroom teachers, teacher leaders also need experience and training in the use of standards-based curricula. In particular, teacher leaders need a deep understanding of the pedagogical philosophy that is embedded in these curricula, including constructivist teaching and shifts in the instructional focus from procedures to processes (e.g., problem solving, reasoning). Naturally, teacher leaders cannot succeed without the support of classroom teachers and parents.

To provide teacher leaders with the training needed to promote and support curricular change, members of the Select Cadre participated in professional development activities that addressed “best” instructional strategies, the knowledge of mathematics needed to teach (i.e., pedagogical content knowledge), and leadership strategies. These professional development activities also focused on curriculum specific strategies, such as the use of “learning logs” to support teachers’ implementation efforts. In general, these sessions were designed by IMI staff members in conjunction with *Everyday Mathematics* consultants. The consultants then familiarized teacher-leaders with the design and intent of the *Everyday Mathematics* curriculum; modeled lessons; assisted leaders with the design and use of alternative assessments; and equipped leaders to conduct effective outreach to parents and the community.

A valuable component of professional development for Select Cadre teachers were site visits to schools in Michigan, in which the implementation of *Everyday Mathematics* had been highly successful. To support their implementation efforts, all teachers were required to use the learning logs to communicate regarding weekly lessons and express needs, barriers and challenges. These logs were read by experienced EM teachers, who were assigned to a group of

teachers and responded as needed, sharing instructional strategies and other relevant classroom ideas. Teachers received training in the use of the IMI Learning Log website to post comments or questions, new ideas and/or strategies used in their respective classroom. In our project, learning logs provide teacher leaders with valuable insights about teachers' struggles and successes.

How Do Teacher Leaders Support and Sustain Student Achievement?

In general, teacher leaders assist district curriculum coordinators and building principals with implementation of the standards-based curriculum, so that the curriculum is implemented as intended. Additionally, teacher leaders monitor the needs of their colleagues as they implement new curricula. Other roles assumed by IMI teacher leaders include:

- Encourage the participation of other teachers in their individual school and district
- Plan district level meetings (transfer of knowledge)
- Schedule opportunities for teachers to observe other EM classes
- Model lessons or co-teach lessons with other teachers
- Organize and hold parent meetings or Math Nights
- Facilitate the district's monthly meeting (sharing teaching strategies)
- Identify problems/concern for the district coordinators and building principals

In keeping with the philosophy of *Everyday Mathematics*, teacher leaders encourage teachers to seek alternatives to the transmission model of instruction. Teacher leaders participate actively in curriculum development, particularly the design of assessments, problem-solving activities, and new instructional strategies. By their very nature, it seems, teacher leader are committed to upgrading the skills and knowledge of their colleagues. Toward this end, they seek and openly share instructional strategies and resources that impact student achievement. Teacher leaders also play an important role in the affective school environment, offering excitement, enthusiasm, and encouragement. Principals and teacher leaders often work together to make decisions and address curricular or achievement issues. These professional interactions shape the overall direction of instructional improvement and student achievement in each building

Conclusion

Teacher leaders—teaching, learning, and leading in the IU-IMI project—had a tremendous impact on the implementation of the EM curriculum in participating districts. Teacher leaders are master teachers who design and facilitate professional learning, provide classroom-based support, and assist administrators in implementation of a standards-based mathematics curriculum. The challenges faced by teacher leaders varied in each district and each building. The professional development activities offered by IMI, administrative support, and collegial collaboration were key factors in preparing each leader for his/her role in the district or building.

Teacher leaders who work side-by-side with their teaching colleagues to enhance mathematics instruction seek to change classroom teaching, working to meet the challenge of improving students' conceptual understanding and achievement. The IU-IMI *Select Cadre Teacher Leaders* met this challenge in a way that echoes the powerful words of Peter Senge: *It takes courage to hold visions that are not in the social mainstream. But it is that courage to take a stand for one's vision that distinguishes people of high level of personal mastery.*

References

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