

Talking Math

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MWP Mini-Grant establishes model program for math teachers

Last summer, after receiving both an e-mail and a letter from Barbara Bass, I spent much time contemplating the invitation from the Maryland Writing Project asking T-C's to submit mini-grant proposals for a project of interest. While I thought the initiative was very interesting and several ideas for projects came to mind, I had no experience writing grant proposals. Although the format seemed manageable, I hesitated until I spoke with my principal. He pointed out that I had nothing to lose by trying and everything to gain. Had I known how true his words were to become, I never would have hesitated. The project that I completed with the mini-grant money has proven to be virtually life-changing for many people—but, I am jumping way ahead of myself. Let me go back to the beginning...

After dabbling with journal article discussion groups the year before, I decided to invite ten teachers and my two administrators to join me for a math book club. The plan was to read two books about math communication—one about math talk and the other about writing in math. We would meet periodically to discuss the books and their implications on our daily instruction. The mini-grant money would be used to purchase the books and to pay a small stipend to each teacher. It was my goal to raise the

awareness about the importance of effective communication in math in order to improve both the quality of math instruction and level of student achievement. In preparation for the first session, the participants were to read a small section of the book and answer a few guide questions. We met in late October to discuss what we had read and written. As it was the first session, everyone was a bit unsure of what to expect or do, but we had a lively discussion, especially about “talk moves”—strategies teachers could use with students to encourage their thinking and talking about math. The group left eager to read the next section as well as to infuse some of the new strategies into their instruction.

While the first session went well, for the second meeting I decided to try to do more than just have the teachers chat about the responses they wrote to the reading guide questions. I focused the participants by doing partner discussions, some brief writing, and group sharing. They



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responded very enthusiastically and I was reminded, once again, that as professional development leaders, it is just as important to plan our sessions as carefully as we would plan a lesson for children. The second part of this meeting was dedicated to the planning of a school-wide professional development opportunity for the faculty in order to share our learning about math talk and the experiences we had using the strategies in the classroom. We decided to begin by focusing our session on the five math talk strategies outlined in the book; members of the group would briefly summarize them for the faculty and provide a hand-out. Then someone suggested that it would be wonderful if we could see a teacher and her class actually using the strategies. One teacher volunteered to be videotaped while she taught a math lesson. The participants thought we could show bits and snatches of the tape to the faculty to illustrate how the strategies were to be implemented as well as how the students reacted to them. Discussion of the video would follow.

Within a week the video was made and it was amazing! I picked out the most pertinent parts to show while the other members of the group prepared for the rest of the meeting. At a faculty meeting in February, our book club shared our strategies, our video and our discussion with about 15 other teachers. The response to the tape was overwhelming. The group watched as the teacher implemented the math talk strategies naturally within her lesson while the students responded with quality comments, questions and answers. I overheard comments such as, “This is so easy to do!” and “Look how those kids are responding.” The buy-in was immediate and intense. The teachers could not stop talking about what they had heard and seen in the video and in our discussion. They were eager to begin implementing the strategies in their math lessons the next day. As a group, we were proud of our work and energized by the responses we received. We could not wait to start reading the next book!

Before our next meeting, on March 1st, the area assistant to the superintendent and her assistant came to our school for their spring visit. When they came in the fall, my principal had shared my project with them and they were very interested in its implications. During the spring visit, they were able to walk around during several math lessons. According to the observations they shared with me afterward, the math talk strategies were evident in many lessons, but more importantly, the quality of oral

communication between the teachers and the students was significantly higher than they heard in the fall and in most other schools! We were just thrilled with their enthusiasm about their observations.

The book club had another wonderful session in March as we began to discuss the book about writing in math. I planned three writing activities to do during the session—an opening response to a focus question, a math autobiography and an acrostic poem about math. The participants were a bit reluctant at first to write and share their work, but, in true Writing Project fashion, they warmed to the task very quickly. They especially enjoyed sharing their math autobiographies. Hearing about each other’s successes and trials as both students and teachers of math was heartwarming and enlightening. The group decided that when we presented this book to the faculty in June we would make this one of our activities.

While Baltimore County has been stressing the importance of written communication in math for several years, especially in light of the requirements of the Maryland School Assessment, the club identified many new strategies that could be used to increase the quality of student explanations as well as other types of math writing—journaling, poetry, etc., and were excited to try these with their classes. Several of the teachers brought student work samples and shared them with the group. About halfway through a first grade teacher’s sharing of work, the fifth grade teacher interrupted her. She was literally dumbfounded with the quality of the writing that first graders were doing and compared it with that of her fifth graders. She said that many of her students were not giving her work that was much better, and because she had no way to know before that day what younger students were doing, knew she needed to raise the expectations for her students. The fourth grade teacher agreed. It was a moment of true learning for these teachers.

Our last book club session was held in May. We finished talking about the book and planned our professional development for the faculty. Based on the wonderful response we had gotten the last time, we knew we had to do just as well. We decided to have the faculty write math autobiographies and use these as a starting point for talking about the different ways writing could be used during math class. Because student work had been so powerful for our learning, we decided to share some with the teachers as well so that they could begin to think about their levels of expectation. Although the meeting was held in June when

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teachers' plates are quite full, they responded well to the activities and we had a fruitful discussion about expectations and rigor as demonstrated by the student work. We finished the meeting by offering up our books as summer reading so they could benefit by all of many suggestions we did not have time to discuss.

Rewind now to the beginning when I said this project has been life-changing for many people. While I already referred to the positive comments of the superintendent's staff and the positive reaction of the entire faculty, there is much more. I will begin with our MSA test results. While our fifth graders only showed a slight improvement in math, 88.4% of our third graders scored proficient or advanced, a 9.7% improvement, and 86.3% of our fourth graders scored advanced or proficient, a 32.5% increase. Obviously, no single strategy caused our scores to rise, but it is safe to say that with an observable increase in the quality of math talk and writing, the strategies the teachers learned and employed through our book club were a contributing factor. We were able to influence the daily instructional plans of the teachers who, in turn, affected the quality and level of student achievement in our school.

A few weeks after the Area Office visit, I was asked to share more about the books we used and our professional learning community. After reviewing this information, the Area Office asked me to make a presentation about my project to all of the administrators in the Southeast Area. Professional learning communities have been a focus in the county for a few years, and the area assistant Superintendent felt that what we did was an exemplary model for other schools. Needless to say that while I was honored to be asked to share, I wondered if what I had to say would really be of interest to administrators and how I would fill my hour—many of the same feelings I had when I did my first MWP presentation! I moved forward and created a presentation which I gave in early June. The information was extremely well-received and many of the participants asked to use my model during the next school year. In fact, some of them want to borrow the video we made for their schools.

Last, but certainly not least, the most personal of the life-changing events came in the midst of all of our work in May and June. During the last two years, I have been pursuing my Administrator I certification through Towson University. While I have not been certain that this was the direction I wanted to go, I enjoyed the coursework and the potential for new challenges. During our fall Area Office

visit, I was encouraged to apply to the Assistant Principal Pool. I did so in January and was placed in the pool. In March, I had interviews for AP positions in several schools. Before I went to the interviews, I was counseled to really sell myself by including specific information about things I have done in my job—like the MWP Mini-Grant Book Club. On May 9th, I was appointed Assistant Principal at Pleasant Plains Elementary and I cannot help but think that my book club project was a significant factor in my being promoted.

Looking back, it is very scary to think that I almost did not apply for a mini-grant. How different things might be—teachers would not have this new knowledge, students may not have achieved as well in math, other schools may not be forming professional learning communities about math talk and writing, I may not be an Assistant Principal! I have always thought the Maryland Writing Project to be a life-altering organization. After my STI in 1988, my teaching changed forever. Now, a mini-grant of \$1500 to buy some books and pay small stipends has affected the learning, teaching, and thinking of so many. Thank you, MWP, for making this mini-grant opportunity a possibility and I hope even more of these will become available in the future.



Silence

By Derek Siegel

There is a sweet silence in the room I am sitting in.

Well, not exactly silence. There is the quiet scratching of pens and pencils. The muffled ruffling of papers. The slight tapping of sandals on the soft tan floor. But also the sounds of thoughts racing through young minds. You can't hear the thoughts, but you know they are there.

Derek is in the eighth grade at Sudbrook Magnet Middle School in Baltimore County. He attended the 2006 Student Writers' Workshop.