

## THE COLLABORATION OF A PRINCIPAL AND A MATHEMATICS SPECIALIST

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### **Abstract**

This article describes the importance of the collaboration between the principal, Patty Granada, and the Mathematics Specialist, Susan Garthwaite, in fostering a highly functioning mathematics program. While many aspects of the collaboration as facilitators for a mathematics program are logical, the “messy” aspects provide greater challenges. Through continued collaboration, they have come to embrace the “messiness” which has contributed to an awareness of similar belief systems in their roles. These beliefs include openness to learning and a sincere commitment to bringing out the best in students and teachers. The principal and the Mathematics Specialist share their continued journey in this collaborative relationship that is essential to the success of the mathematics program.

### **The Logical Start**

Developing a strong mathematics program is both logical and messy. The logical part started before the beginning of the school year when Patty Granada (the principal) and Susan Garthwaite (the Mathematics Specialist) met to establish roles and clarify the vision for the mathematics program. Scheduling a regular weekly meeting to check in about the mathematics program was logical. Deciding what Susan does and what Patty does was logical [1]. Logical, simple, almost easy.

The vision for the mathematics collaboration was clear. They trusted the professional literature about the role of the Mathematics Specialist to support teachers in their continued learning, and the necessary support of the administrator in the success of the mathematics program. Susan’s responsibilities were to facilitate and attend meetings, plan and co-teach lessons, and manage the details of coordinating a mathematics program. Patty’s responsibilities were to oversee the bigger picture of how the mathematics program fit into the school, communicate a vision and expectations regarding the mathematics program, and coach Susan [2, 3].

Yes, this seemed so logical. The meetings that Susan would facilitate and the classrooms where she would provide the most support were prioritized. The School Improvement Plan was

reviewed and a common understanding about the school's student achievement goals was reached. A weekly meeting time for the two to meet was set. In these meetings, Susan would come prepared with a list of items and questions. These generally fell into three categories: 1) conducting administrative tasks, such as ordering materials; 2) coordinating the mathematics program, such as facilitating meetings and teacher visits; and, 3) sharing perspectives related to best practices in mathematics instruction.

Instructionally, the schoolwide focus was to strengthen the mathematics program by continuing to take the following actions: engage students in meaningful, challenging experiences that developed their critical thinking skills; develop students' capacity to solve problems in real-world contexts; and, support the role of the teacher as facilitator of student learning.

Yes, it was all so clear and logical. It was going to be an easy year.

### **The Messiness Begins**

The school year began. The students arrived, and mathematics instruction was underway. As time progressed, Susan was increasingly noticing the challenges students were having with solving mathematics word problems. This seemed to be a common concern in dialogue with teachers, too. At the same time, in every classroom, Susan noticed anchor charts and posters related to reading strategies. She initiated informal dialogue with the reading specialists, teachers, and teams about these strategies in the reading program. What were these strategies? How were they used to support student thinking? If they could help student thinking in reading, what might be their application to mathematics?

Susan gradually came to understand that these reading strategies had the potential to be helpful if applied to mathematics problems. This was a sentiment shared by several teachers. Together, Susan, a reading specialist, and classroom teachers from different grade levels created and co-taught lessons to help students make those same connections. They reflected on their work with students around this topic, and how to continue to help students gain a heightened understanding of how reading connected to mathematics and how thinking strategies could be applied in mathematics. At the next school leadership team meeting with representatives from every grade level, the teachers involved shared their continued learning about the powerful connections between reading and mathematics, and how student learning was being impacted.

As the months went by, teachers and teams gained an increased awareness of thinking strategies that apply to both reading and mathematics. The teachers and teams continue to embed thinking strategies to support students in becoming more proficient problem solvers.

During this process of reflection and learning about how to apply thinking strategies to both reading and mathematics, Patty had a supportive leadership role. She coached Susan and the reading specialist throughout the process. She asked questions and helped them clarify their thinking, plans, and goals. She directly and indirectly communicated her support for this learning, acknowledging that this learning process takes time.

This collaboration around these mathematics-reading thinking learning strategies is reflective of a key principle outlined in *All Systems Go*: “The solution is not a program; it is a small set of common principles and practices relentlessly pursued. Focused practitioners, not programs, drive success” [4]. Their collaboration also aligned with Cwikla’s descriptions of teaching professionals actions when facilitating change [5]. Cwikla used the following criteria:

- Focus on students’ thinking and learning.
- Participate in productive collaboration.
- Engage in gradual but steady improvements.
- Conduct classroom experiments.

Reflection on the learning and practices related to mathematics reading thinking strategies led to the realization of the lack of a plan or following logical steps. This process of supporting students’ critical thinking in mathematics has been, and will continue to be, quite messy. Furthermore, it demonstrated, as working in complex systems often does, that just one question—“How can we apply ‘thinking’ strategies to mathematics?”—can lead to deeper, more profound questions:

- How do students think in mathematics?
- What do they do that demonstrates their thinking?
- Are their misconceptions related to mathematics concerns or reading concerns, and how can we make that distinction?

**Are We the Problem Solvers?**

In conducting continuous dialogue about the mathematics program at the weekly meetings, the driving question is always this: how best to support the mathematics program that engages students in challenging, real-world problems to solve? Sometimes the focused dialogue allows insights that would not have occurred otherwise. This, too, lends messiness to the collaboration.

For example, a few months ago, Susan shared her perception of a pattern beginning to emerge with several grade levels. When students were asked to solve problems, part of their challenge appeared to be in reading and following directions on the paper. Students seemed too dependent upon teachers for clarification in order to begin independent work. Patty and Susan identified the problem: Students could not understand directions. Check.

The next logical step was to begin to generate a solution to this problem. Susan would meet with teachers, introduce direction reading as a genre, and collaborate with the reading specialist to provide modeling and instruction to teachers on how students could become independent readers of directions. Patty and Susan solved the problem: Teachers were going to get trained. Check.

Fortunately for Patty and Susan (as well as the rest of the staff and 700+ students), as they were solving the problem, they stepped outside of their dialogue. Patty and Susan realized that this problem solving they had gotten caught up in was not going to work. It seemed like they were riding on some train, and they began to question where it was heading, who was driving it, and if it was really the right train in the first place. While reflecting on the problem solving, they realized that they had been making assumptions about whether there was a large-scale problem with reading directions in the first place. They were jumping to solve a problem of their own making, and weren't including the teachers in the process.

By the end of their meeting, they were both completely clear that, while reading directions might be a topic of future exploration, it was certainly not one that was an immediate priority. Teachers were still growing in their learning about the connections between reading and mathematics, and believed in the benefit of those connections. Teachers did not believe direction following to be a key issue in mathematics, and therefore, adding that on as another instructional change would detract from the bigger focus of thinking skills.

A conversation that had started with the question, “How are we going to support student understanding in mathematics?” had ended with the more significant question, “If we are not problem solvers, what is our role as we support this mathematics program?” This was definitely a messy question to answer.

### **We Are the Facilitators of Learning**

This led to a significant insight about decision making in their school. When Susan meets with anybody—Patty or teachers—Susan is the content expert. If asked questions about mathematics, she could have a lot of answers. Therefore, if her role were logical, perhaps she would simply answer questions and solve problems. Yet she has come to understand that she is more a facilitator of teachers’ learning; as such, she supports teachers in constructing their own learning and is a guide along the way. Similarly, when Patty meets with Susan, Patty’s role is to facilitate Susan’s thinking, not to give Susan steps to follow. Steps to follow might seem logical, but if Patty determined these for Susan, it certainly would not honor her as a learning professional.

Through collaboration, Patty has come to a greater understanding of her role in supporting the mathematics program. As a principal, Patty makes decisions about the mathematics program, and one key decision she has made is this: The teachers make their decisions about their teaching and learning focus. The teachers are the deciders and the implementers. Therefore, when Susan and Patty collaborate, it is with the understanding that both are facilitating a process of learning that empowers the teachers. In their collaborations and throughout the building, Patty and Susan are facilitators, liaisons, coaches, and resource-developers. They have become clear that all the aspects of their roles, both the logical and messy, are in developing the resourcefulness of the teachers because it is the teachers who are developing the most important resource—the students [6, 7].

### **Common Beliefs Are Essential to Collaboration**

The progress in their collaboration is attributed to commonly held beliefs. They have come to understand that these beliefs are the essential element of the mathematics program’s success.

Students Are the Primary Focus — Their work is guided primarily by the students. The students are the reason for collaborating, their learning is the goal, and they are the first consideration and

the bottom line. Patty and Susan believe that the students' learning in mathematics will provide them the skills and capabilities that are preparing them for a future of limitless possibilities.

We Are Learners — Every meeting is an opportunity for Patty and Susan to grapple with questions about how to support teachers and students, and are open to new ideas. This “disequilibrium” is an essential part of the relationship and growth. For example, when Patty noticed that teachers were frustrated with students struggling with multiplication facts, she asked Susan for help in understanding the underlying issue and options to address it. In the ensuing dialogue, Susan opened Patty's eyes to a new way of thinking about multiplication facts.

Susan, who stays current with research and literature about best practices in mathematics instruction, enjoys her learning with teachers. She enjoys grappling with how to make research-based practices relevant in a class full of twenty-nine students. She enjoys the collaborative team meetings, where surprising ideas can unfold, whether it is insights related to student assessment data or ideas about using hand signals in mathematics class.

When meeting, their identity as learners takes precedence, and more down-to-earth notions about their work together where learning is the core is adopted. This can potentially be a challenge for a principal and Specialist to navigate. According to Tschannen-Moran, “Because of the hierarchical nature of the relationships within schools, it is the responsibility of the person with greater power to take the initiative to build and sustain trusting relationships” [8]. Patty accepts responsibility for her important part in developing and fostering that trust.

While Susan and Patty may have clearly established roles when they first began working together, they did not begin immediately with a high level of trust. Yet trust began to build through every interaction and meeting. Their dialogues about learning in the mathematics program have helped them continue to develop trust. Susan knows that when they meet, Patty wears a coach hat. Susan's trust in Patty as a coach allows her to share her thoughts freely and openly. Patty knows that when she is sharing a thought with Susan, it won't be interpreted as a decree for which action is expected afterward. Patty, who will offer a variety of thoughts and suggestions, trusts in Susan's critical thinking skills to crystallize their thinking and elevate the dialogue. Patty and Susan would both agree that when they meet, the center of the meeting is learning. Their learning invigorates them.

A Belief in Everyone's Potential — Patty and Susan firmly believe that all students can reach far and high, and that all teachers and teams have infinite possibilities within them. Everywhere they look, they see committed, dedicated students and staff members working together for student success. They believe that when everybody walks in the door, they are walking in with a mindset of possibilities. They believe that everybody wants to be their best and is trying to be their best. Patty and Susan are inspired by the learning community of which they are fortunate to be a part, and that makes them want to continue being their best.

### **Logical and Messy: Final Thoughts on Their Collaboration**

When Susan and Patty began working together, the collaboration initially seemed logical. In truth, many aspects are, indeed, quite logical. The mathematics program has clear instructional goals. Patty and Susan have clear roles to support these goals. There is a logical structure to their meetings, and they have a logical algorithm to the work. *Patty develops Susan, Susan develops teachers, and teachers develop students.* They have three simple, deeply held beliefs that are mirrored in their relationships with each other and with staff members.

The logic and structure of their communications are definite assets. It's how they navigate them together that can be messy. This messiness reflects the nature of working in a highly interdependent system. The messiness lies in the surprises that come when they really pay attention to what students and teachers are learning, and how they are learning. The messiness is evident when one simple question leads to several more questions, and they do not have simple answers. When we embrace our collaboration as learners, we accept that our learning will always transcend logical structures and processes. While messiness is a challenge, it is a joy worth the journey together.

**References**

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