Co-teaching in the science classroom: The one teach/one assist model

by Natasha Hillsman Johnson and Larry Brumback

Are you planning to implement a co-teaching model in your classroom? Have you been placed in a co-teaching environment? Would you like to improve your collaborative relationship with a co-teacher? If you are currently working as an educator in a K-12 school environment, you probably answered yes to one of those questions.

Unfortunately, in many schools, co-teaching is defined by the physical presence of two teachers in a classroom, but that is not co-teaching. What, then, is co-teaching? According to Gately and Gately (2001), *co-teaching* is “the collaboration between general and special education teachers for all of the teaching responsibilities of all students assigned to a classroom” (p. 41). The use of two professional teachers in one classroom is gaining in popularity, and while co-teaching is an expensive undertaking, research indicates that it can be a very effective method to address the diverse learning needs of students. The goal of the inclusion co-teaching model is to improve the achievement and performance of students who are enrolled in general education content courses and currently being served by Individualized Education Programs (IEPs). This arrangement reduces teacher-student ratios and increases attention to individual students, allowing teachers to better facilitate the instructional modifications and accommodations required for student success. An effective co-teaching model requires that all aspects of the learning process be considered, from planning and physical space to instruction and assessment. Teachers assigned to work in collaborative environments must receive the necessary training and support in order for schools to fully realize all of the benefits to student learning.

Common co-teaching models include duet, parallel teaching, station teaching, and one teach/one assist (Friend and Cook 2003; Kluth and Straut 2003). (See Forbes and Billet 2012 for more information on co-teaching.) During my (first author) 10 years as a classroom teacher, I have had several co-teaching experiences. Some were moderately successful, while others were downright failures. My most negative co-teaching experiences stemmed from an expectation that the teaching responsibilities would be shared fully. Earlier in my career, limited knowledge and inadequate professional development on co-teaching models prevented me from understanding the full range of possibilities for implementing this practice in my classroom. According to Kluth and Straut (2003), in the duet model, both teachers take turns facilitating whole-class instruction and leading activities. While this model is generally associated with co-teaching, due to the limited content knowledge of many special education teachers, this model is not always possible in the science classroom.

As a result of my past experiences, my attitudes toward co-teaching ranged from indifference to skepticism. Then I met Ms. Crosby, a special educator who proved that under the right circumstances, co-teaching can, and in fact does, work. This experience was successful because we used a co-teaching arrangement, specifically the one teach/one assist model, that was appropriate for our teaching environment. In this model, one teacher acts as lead teacher and the other plays a supportive role by helping with administrative tasks, providing individual student assistance, and leading small-group activities (Kluth and Straut 2003).

Here is our story—a story about personal and professional growth. Together we moved from an awkward co-teaching relationship to almost seamless teaching. Through our work, we were able to make science more accessible to our physics students.

The journey begins: The early stages

It was a warm, August day, and I was working to prepare my classroom for the first day of school as I had many times before. Ms. Crosby, one of the school’s special education teachers, smiled as she informed me that we would be co-teaching two physical science courses that semester. Our relationship at that point was friendly, although we had never worked...
together formally. My initial reaction was a mixture of surprise and frustration. My surprise stemmed from not being given adequate notice of the co-teaching arrangement, and that the information was provided by my co-teacher rather than an administrator. My frustration was related to what I perceived as an increase to my already heavy workload, including meeting time, paperwork, and planning. Despite my initial reservations, I was determined to make Ms. Crosby feel comfortable and ensure that students had a positive and productive experience in the class.

When we had our initial planning meeting, Ms. Crosby shared that she had little to no experience in the sciences but a strong background in mathematics. We briefly shared our teaching philosophies, instructional approaches, and plans for the first unit. We parted ways to finish our individual preparations for the first day of school. To be perfectly honest, I was not expecting much out of my co-teaching experience. Until this point, my co-teaching experiences had been less than ideal, and there was little hope that this one would be any different.

On the first day of school, Ms. Crosby arrived early for our second-period class, equipped with her teacher bag and a red, spiral notebook. We started the semester off with introductions through a lively game of "Two Truths and a Lie." It was on this day that our co-teaching relationship began to blossom. Ms. Crosby's presence on the first day allowed her to become a member of the classroom community rather than a spectator. When I began the lesson, Ms. Crosby positioned herself between the whiteboard and the back of the classroom. When students were given their assignment, Ms. Crosby and I both responded to questions and checked on student progress. When the period was over, since we had common planning time, we chatted briefly about the events of the day. When she departed, as I reflected on the day, I realized how nice it was to have another teacher to assist in the management of the large class.

Challenges

- Although scheduling problems and staffing issues in many schools do not allow for co-teaching arrangements to be determined in advance of the school year, it is critical that special education teachers be present for the entire class on the first day of school to become part of the classroom community.

- General and special education teachers often feel vulnerable in co-teaching arrangements, as they force teachers to expose their teaching strengths and weaknesses (Buczynski and Sisserson 2008).

Benefits

- The presence of two teachers can serve as a professional development opportunity and allow both teachers to reflect and share instructional practices.

- As class sizes continue to increase, the presence of two teachers can offer great benefits for student supervision during direct instruction and laboratory activities.

Are we there yet? In the midst of co-teaching

As we settled into our new classes, we approached another milestone: our first laboratory experiment. Through the use of basic measurement skills, students were expected to calculate density to determine the identity of unknown substances. Following the pre-lab discussion and safety overview, students were divided into lab teams to begin work. Laboratory work often poses a significant challenge to science teachers due to time constraints and the need to effectively supervise students. As a result, I had physically and mentally prepared myself for the organized chaos that would ensue.

To my surprise, Ms. Crosby immediately positioned herself with a group as students began to work through their procedures. She circulated around the room and answered questions related to the use of a ruler and triple-beam balance, although both skills had been demonstrated and discussed during the pre-lab. When students reached the Archimedes-principle section of the lab, Ms. Crosby came to me with a clarifying question. Many students did not understand how to obtain the volume for an irregular solid. I explained to the class that the volume of the displaced water is the volume of the object. Ms. Crosby quickly pulled out her red, spiral notebook and opened it. As I watched, she jotted down some notes about the Archimedes principle. Glancing down at her notebook, I realized that she had been taking her own class notes. No wonder she was able to provide so much assistance to students—she was not at all intimidated by the science content. She was prepared to work hard to increase her...
content knowledge and help not only the special needs students, but all students. In that instant, Ms. Crosby had earned my respect and our relationship changed. I became committed to helping her learn the content and ensuring that we had a great year together.

**Challenges**

- Special education teachers who are placed in advanced science courses, such as physics and chemistry, may feel intimidated by the math and science content. Administrators should offer the necessary support from general education teachers, online modules, or even formal course work.
- Special education teachers may feel uncomfortable admitting when they don’t understand content, but this creates a valuable learning opportunity for them and allows general education teachers to reflect on the clarity of their instructional delivery.

**Benefits**

- Special education teachers who have collaborated with teachers in a science classroom are better equipped to assist in similar courses in the future. Administrators should dedicate special education teachers to specific content, such as Earth science and biology, so they do not have to constantly learn new content.
- Regular education teachers who have worked in a collaborative model may be better equipped or more motivated to seek special education endorsement, creating a larger pool of candidates for co-teaching assignments.

**The home stretch: Onward to collaborative**

As the semester continued, our relationship and collaboration strengthened. Ms. Crosby continued to be actively engaged every day, taking notes, asking questions, and helping students. We worked together during our planning period to discuss lessons, plan activities, and grade papers. During formal assessments, Ms. Crosby would always take a group of special and general education students to another classroom to work (we worked hard not to distinguish the two groups). Ms. Crosby even began to attend the after school tutorials in my classroom.

One morning I was sharing with Ms. Crosby my frustration over the performance of a particular student, and desperately searching for a strategy that would work for him. Ms. Crosby recommended that I allow the student to become a group leader. I was hesitant because the student had already demonstrated so many behavioral issues. I agreed, but I was fully expecting the student to initiate more off-task behavior with his peers. After a few days, I realized that Ms. Crosby had been right. The student thrived under his new leadership role, showing improvement in both his behavior and academic performance. In that moment, I realized that Ms. Crosby could also help me, an experienced teacher. According to Murawski and Dieker (2004), “One of the major benefits of co-teaching is that teachers bring different areas of expertise” (p. 55). Although I was able to offer content expertise, she was extremely knowledgeable about teaching strategies and student behaviors.

In April, all of the collaborative teachers were asked to attend a meeting facilitated by the coordinator of the special education program. We discussed barriers to co-teaching and strategies to promote successful learning environments. It was a venue to voice concerns and suggestions for improving the program. After listening to the problems of other teachers, Ms. Crosby and I invited teachers to observe our classroom. The coordinator accepted our offer and visited a few weeks later. She informed us that we were a great model of successful co-teaching and that she had learned a great deal during her visit. According to her, she found the lesson so easy to follow and engaging that she actually wanted to raise her hand to answer a question. As the ultimate compliment, she stated that the special and general education teacher were indistinguishable as she watched our interactions with students.

**Challenges**

- It can be difficult to find the time for common planning, IEP meetings, special education meetings, and additional paperwork. Administrators can allow adequate time for planning through the use of leave time, early release, etc.
- Many teachers never have an opportunity to observe models of successful co-teaching. Administrators and facilitators must encourage and create such opportunities within and outside the school building.
Benefits

- Co-teachers can benefit from formal and informal observations as a tool to evaluate instruction and classroom culture.
- The perspectives of a general and special education can lead to innovative and effective solutions to problems with classroom management and student learning.

Final destination: Reflections on co-teaching

As the year drew to a close, preparations began for the next school year. Ms. Crosby and I were scheduled to co-teach again during the next year. Over the course of the school year, Ms. Crosby and I had developed trust, mutual respect, a productive relationship, and a wonderful friendship. I will admit it was not always perfect. Ms. Crosby was often treated as a teaching assistant by some students because I performed all of the formal instruction. Our personalities and teaching styles were quite different. There was a great deal of paperwork and meetings toward the end of the IEP cycle. But in retrospect, I would not trade the experience for anything in the world. I would urge any teacher who is entering a co-teaching experience to keep an open mind. When problems do arise, teachers should be honest and work to resolve issues. In the case of philosophical differences and personality clashes, teachers must feel comfortable requesting a change in teaching assignments. The most important factor in any teaching arrangement, co-teaching or otherwise, is student achievement.

When I entered the co-teaching arrangement, it was not from a research perspective. The academic benefits to students in terms of letter grades and test scores were not measured and cannot be quantified with any degree of certainty. What I can be certain of is that both teachers and all of my students benefited as a result of this co-teaching arrangement. For Ms. Crosby, the benefits included the confidence she gained by learning and effectively teaching science content to students and the knowledge that her presence added a tremendous value to students' experience. For my students, benefits included the opportunity to receive more teacher time and the attention necessary to learn science content, as well as the model of two adults working collaboratively to accomplish a common goal.

Research indicates that science classrooms are an ideal environment for inclusive models because of hands-on laboratory activities and group work. Through dedication and hard work on the part of the general education teacher, special education teacher, and school administration, co-teaching can prove to be a very valuable and enjoyable experience. How did I benefit from my co-teaching experience? As I closed out my grades, cleaned my classroom, and prepared for my summer vacation, there was a sense of pride in knowing that perhaps for the first time in my teaching career, IEPs were executed to a greater extent than I was capable of on an individual basis and that my special education students had received the necessary support to maximize their learning experience. For the moment, there was a level of satisfaction in knowing that I had (with the help of Ms. Crosby) accomplished my goal of making science accessible to all students.

References


Natasha Hillsman Johnson (yjohnson@uga.edu) is a doctoral student at the University of Georgia in Athens, Georgia, and a teacher in the Atlanta, Georgia, public school system. Larry Brumback (brumback@uga.edu) is a doctoral student at the University of Georgia and a teacher in the Rockdale County, Georgia, school system.