

The Journal of Special Education Apprenticeship

Volume 2 | Number 2

Article 2

12-1-2013

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Recommended Citation

Isherwood, Robert S.; Barger-Anderson, Richael; and Erickson, Matthew (2013) "Examining Co-teaching through A Socio-Technical Systems Lens," *The Journal of Special Education Apprenticeship*: Vol. 2: No. 2, Article 2.
Available at: <http://scholarworks.lib.csusb.edu/josea/vol2/iss2/2>

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Examining Co-teaching through A Socio-Technical Systems Lens

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Qualitative research was conducted in a large suburban school district implementing co-teaching as a new service delivery model for special education. Researchers examined the changes that resulted from the new service delivery model using a socio-technical systems lens. This framework views schools as open systems that contain a structural, task, human, and technical subsystem. The intent of the study was to document the changes in each of these subsystems resulting from the implementation of co-teaching and to provide educators with strategies to implement co-teaching in a seamless and effective manner. Unanticipated challenges included scheduling, teacher work ethic, personality compatibility, classroom composition, and time.

The reauthorization of IDEA in 2004 stressed access to the general education curriculum for students with disabilities as well as accountability through high stakes testing (Isherwood & Barger-Anderson, 2007). This federal legislation along with various state requirements has mandated that all children have access to a free appropriate public education, and that every effort is made to ensure their academic success (Pickard, 2008). Because of this, the idea of special education as a parallel or separate system of education to that which is provided to the majority of children has been challenged by notions of inclusion where all children are a part of one education system. Florian (2010) contends that there is a growing recognition that traditional models of special education, based on forms of provisions that are “different from” or “additional to” that which is provided for others of similar age,

are unjust because they lead to segregation and perpetuate discrimination.

In the United States, over 80% of all students with disabilities receive the majority of their education in general education classrooms (U.S. Department of Education, 2011). Given the national trend to place students with disabilities in the general education classroom full time, it is not surprising that many school systems are changing their special education service delivery model to make them more inclusive (Walter-Thomas, 2004). One strategy school systems appear to utilize is the use of co-teaching partnerships between special and general education teachers (Isherwood & Barger-Anderson, 2007).

In this article, we describe changes that occurred across a school culture as a result of implementing inclusion and co-teaching as well as provide strategies for setting up an inclusive school that includes

co-teaching as the primary service delivery model for special education. These strategies are based on qualitative research that was conducted with special and general education teachers that had been co-teaching for one year in a suburban school district outside of Pittsburgh, Pennsylvania.

Inclusion

Ryan and Gottfried (2012) defined inclusion as “a philosophy that brings students, families, educators, and community members together to create schools based on acceptance, belonging, and community. Inclusionary schools welcome, acknowledge, affirm, and celebrate the value of all learners by educating them together in high quality, age appropriate general education classrooms in their neighborhood schools “(p. 563). Conceptually, inclusion refers to full time integration of all students—no matter what their difficulties are – in a general education environment corresponding to their age and located in a school in their home district (Belanger, 2004). McLeskey and Waldron (2007) contended the ultimate goal of inclusion is to make an increasingly wider range of differences ordinary in a general education classroom. Nguyen and Hughes (2012) posited that inclusion refers to the process of placing children with disabilities in the same classes as their typically developing peers and providing them with the necessary supports and services to ensure success. Although this may seem like an ideal vision for educating students with disabilities, this concept has historically been controversial.

Zigmond, Kloo, & Volonino (2009) contended that “where” students with disabilities are educated has always been at the center of debate concerning the educational needs of students with disabilities. So much so, the United States Congress requires an Annual Report to Congress as part of the federal special

education legislation that includes annual data on the number of students with disabilities served in each of the educational environments along the continuum of placement options ranging from the general education classroom to homebound/hospital placements. The LRE provision of the IDEA makes it clear that children with disabilities are to be educated as much as possible with their non-disabled peers (Fair, 2012).

As far back as 1968, Dunn posited that placement of students with disabilities into self-contained special education classrooms was unjustifiable. Dunn called for the education of exceptional children to take place in the general education environment with some special education teachers providing appropriate diagnostic prescriptive supplemental instruction in resource rooms and others guiding the work of the general educator in a consultative or team teaching role (Dunn, 1968). In 1986, Will suggested that the pull out approach, though well intended, had failed to meet the educational needs of exceptional students and may have created barriers to successful education. Lipsky and Gartner (1987) added that there was no compelling body of evidence that segregated special education programs benefitted students.

Pressure to reform special education increased during the 1990’s with the reauthorization of IDEA in 1997 which legislated that students with exceptionalities have access not only to their nondisabled peers but also to everything their non-disabled peers were learning (Zigmond et.al., 2009) Advocates of full inclusion during this decade began stressing a new service delivery model for special education that included co-teaching (a general and special educator sharing the same general classroom space to teach the same group of diverse students, some of whom had disabilities and were in need of special

education)(Skirtic, Harris & Shriner, 2005). Yet, inclusive education is an issue which is still consistently being debated; it is also an issue that is heavily reliant upon the positive support of teachers (Ryan & Gottfried, 2012).

The present day body of literature does not consistently state that teachers are generally in favor of inclusion, or not in favor of inclusion indicating that a divide still exists amongst educators on whether students with special needs should be included within the general education classroom (Ryan & Gottfried, 2012). Across the world, school leaders and teachers continue to indicate that they feel inadequately prepared to assume the responsibilities of educating diverse learners, particularly those with disabilities (Chopra, 2009). Smith and Tyler (2011) proclaimed an authentically inclusive school environment requires that teachers have the skills necessary to use effective practices—those validated through rigorous research—and that school leaders (e.g., principals) have the requisite tools to support teachers and students including those with disabilities. These findings imply that without support and proper training in inclusive practices, teachers may develop negative attitudes about inclusion. Gottfried (2007) contended that negative attitudes result in unsuccessful programs and an unsuccessful program results in strengthening negative attitudes.

It does appear that when teachers are supported and trained in inclusive school practices, inclusion can be a positive and effective experience for teachers and students alike. Kuyini and Desai (2007) found that teacher attitudes toward inclusion were generally positive when teachers felt supported by administrators. Positive attitudes were predictive of effective teaching in inclusive classrooms (Kuyini & Desai, 2007).

Walsh (2012) in a study of the Howard County Public Schools in Maryland found that a systemic and continuous professional development program known as the Designing Quality Inclusive Education (DQIE) program had a significant positive effect on creating inclusive school environments and improved student achievement for students with disabilities. In the program, teachers were provided professional development that modeled a variety of co-teaching approaches to use for different instructional purposes along with strategies for the differentiation of instruction essential for the diverse learners in inclusive classrooms (Walsh, 2012). Strategies for teachers to tier assignments and scaffold support for students with disabilities, along with activities and materials to promote increased student engagement, were demonstrated at professional development workshops on a regular basis. Longitudinal data from 2003 to 2009 revealed a 22% increase on state tests in reading and math in Grades 3 through 8 and a 10% increase in placement of students with disabilities in general education classrooms during the same period of time. Walsh (2012) concluded that professional development is truly an essential element to the continuous improvement of teachers and students in inclusive environments.

Leadership and collaboration also seem to be essential to creating an inclusive school environment. Guzman (1997) found in his study of six principals leading inclusive schools that the schools were characterized as successful by their faculty because administrators collaborated with their staff to develop an inclusive school philosophy, established a strong communication system that allowed staff to make judgments related to practice and change in the school, staff were actively involved in developing intervention strategies for at-risk

students and students with disabilities, communication was encouraged between staff and parents, and a professional development plan was implemented that focused on developing an inclusive school. Doyle's research (2002) of 18 school administrators in inclusive schools demonstrated that collaboration between general education teachers and special education teachers seems essential to creating an inclusive school culture but still remains a great challenge.

Finally, Isherwood, Barger-Anderson, Merhaut, Katsafanas, and Badgett (2010) found in their focus group research that teachers and administrators viewed the implementation of co-teaching and inclusion as a significant change in school culture that resulted in many unanticipated consequences. They recommended that school administrators and teachers interested in promoting inclusion through strategies such as co-teaching and differentiated instruction should review the existing research on inclusion and co-teaching and listen to the experiences of schools that have already implemented it.

Co-teaching: A Research Supported Practice

Today, very few educators can mention inclusion without also mentioning co-teaching. Across the United States, the preferred service delivery model for special education is full inclusion with co-teaching (Zigmond et al., 2009). The preferred content of special education is standards based instruction in the grade appropriate general education curriculum (Zigmond, et al., 2009). Co-teaching appears to be a strategy that can be used to bridge the divide between the general education curriculum and the learning challenges faced by many children with disabilities when included in the general education classroom.

Twenty years ago, Bauwens, Hourcade, and Friend (1989) first explained

co-teaching as an alternative educational approach in which general and special educators shared teaching responsibilities and provided differentiated instruction for academically and behaviorally diverse students in the least restrictive environment in the general education classroom. Since that time, co-teaching has been widely accepted as the philosophical and pragmatic merger of general and special education (Walsh, 2012). Murawski and Dieker (2008) described co-teaching as a service delivery option designed to meet the needs of students in an inclusive classroom by having a general education teacher and special service provider (e.g. special education teacher, speech pathologist, Title I teacher) teach together in the same classroom. Murawski and Dieker (2004) found that co-teaching is a method by which educators meet the needs of students with and without disabilities who struggle in general education classrooms. Isherwood, Barger-Anderson and Merhaut (2013) contended that co-teaching should result in at least one of the following four things; 1) pre-teaching, 2) re-teaching, 3) remediation, and/or 4) enrichment and should be used for all students in a classroom.

Zigmond and Magiera (2001) described at least five models of co-teaching and identified strengths and draw-backs of each of the models. The models included: 1) one teach/one assist, 2) team teaching, 3) stations teaching, 4) alternative teaching, and 5) parallel teaching. One teach/one assist occurs when one teacher takes the instructional lead while the other teacher simultaneously observes, monitors, or tutors individual students. Team teaching is planned so that both teachers are actively engaged in instruction to the entire class of students. Both teachers move in and out of instruction, answer questions, finish each other's words and clarify each other's comments. The stations teaching model

requires the teachers to divide the physical arrangement of the classroom into three distinct spaces. Two of the spaces are allocated for teacher directed instruction and the third is for independent work. Alternative teaching occurs when the class is divided into two unequal groups- a larger group that can be engaged in a review or extension activity and a smaller group that needs to have a concepts and/or skills re-taught, a lesson previewed, or a skill re-emphasized. Finally, parallel teaching is used when the class of students is divided into two heterogeneous groups of equal size (both containing some students with disabilities). Each teacher teaches the same content at the same time to half the students.

Isherwood, Barger-Anderson, and Merhaut (2013) characterized the approach to using the models of co-teaching in two ways; as either a *collaborative approach* or a *divide and conquer approach*. They contended that the team teaching model and one teach/one assist model are collaborative because both professionals are working together with all of the students in the class at one time in a large group. In contrast, the alternative teaching model, stations teaching model and parallel teaching model require the students in the class to be grouped in smaller numbers with teachers working with fewer numbers of students in separate spaces at any one time.

Gately and Gately (2001) contended that co-teaching is a developmental process that has three stages through which many co-teaching teams proceed: The beginning stage, the compromising stage, and the collaborative stage; and each stage is characterized by varying degrees of interaction and collaboration. Isherwood and Barger-Anderson (2007) found that interpersonal communication skills, administrative support, curriculum familiarity, classroom management, and classroom roles and responsibilities were important factors

in the development of co-teaching relationships. They concluded co-teaching relationships were stronger when these factors were discussed and planned out before implementation occurred. Silieo (2011) stated that in some instances co-teachers are placed together that have dissimilar personal and professional values and that they must identify, state, and combine in an effort to create positive academic and social climates for all students in their classrooms. He contended this may require teachers to discuss things like instructional delivery, grading, discipline and classroom management, and collaboration in communication with parents. Zigmond and Magiera (2001) insisted that teachers work to establish a common or at least compatible philosophy regarding their approach to co-teaching.

To date, much of the research on co-teaching has been qualitative in nature and focused on issues such as teacher attitudes and opinions of co-teaching and administrative support or lack thereof for co-teaching (Isherwood et. al., 2011). Scruggs, Mastropieri, and McDuffie (2007) endorsed qualitative research methods to examine co-teaching because such methods are generally appropriate to describe and provide insights about attitudes, perceptions, interactions, classroom structures and behaviors related to co-teaching. Because we were interested in examining how schools were using co-teaching as a strategy to help transition from a traditional "pull out service delivery model" for special education to a more "inclusive service delivery model" we felt a qualitative approach was most appropriate.

Methods

Purpose Statement

We conducted this study to examine how a school district used co-teaching as a strategy for transitioning from a traditional special education model that serviced students using mostly pull out instruction in resource classrooms to a more inclusive service delivery model that integrated students with disabilities with their nondisabled peers in general education classrooms. We also wanted to determine how the implementation of co-teaching and inclusion impacted the school culture. As this service delivery model continues to gain in popularity, it is critical that research be conducted to determine how effective implementation can occur (Isherwood & Barger-Anderson, 2007).

In this study, fifteen co-teaching teams were interviewed and observed in a suburban school district outside of Pittsburgh, Pennsylvania over a one year period. Teachers were asked to identify hardships encountered during this transition process and strategies for avoiding obstacles related to co-teaching and inclusive education. Because co-teaching appears to be gaining momentum as a national strategy that many schools are using to include children with disabilities, we felt providing school personnel with particular challenges encountered during the development and implementation of a co-teaching framework would be beneficial. We also wanted to report on the techniques and strategies teachers and school administrators used to overcome roadblocks to creating a successful inclusive school. Our intent was to examine co-teaching and inclusion using a socio-technical systems lens and focus our questions and observation on four subsystems found within a school. The subsystems include the technical, task, structural, and human subsystems. The research questions posed included: 1) What

obstacles might school district personnel encounter in the human, technical, task and structural subsystems when implementing co-teaching to create a more inclusive school?, and 2) What are the essential elements needed in a school environment to ensure successful co-teaching and inclusion?

Research Design

In an effort to study the implementation of co-teaching we chose qualitative research methods using a case study design. This approach is based on a naturalistic phenomenological philosophy that views reality as multilayered, interactive, and a shared social experience interpreted by individuals (McMillan & Schumacher, 1997). Case study design is employed when the intent of the researcher is to focus on one phenomenon and more specifically, in evaluation studies when the program or innovation must be systematically studied, the context of the event is important, and when the scope of the program evaluation is broad, including strengths, weaknesses, and side effects anticipated and unanticipated (McMillan & Schumacher, 1997). In this case, we were interested in understanding how co-teaching was implemented in a school district as a strategy used to become a more inclusive environment. Using this ethnographic design allowed us to conduct interviews, observe co-teaching, and do document analysis in a selected site for a sustained period of time. Our intent was not to establish a cause-effect relationship, but to offer an understanding of people's experiences and the concepts generated from the research.

Case

The bounded system we studied in this investigation was the George Washington School District (pseudonym) located approximately 40 miles from Pittsburgh, Pennsylvania. The district is large in comparison to surrounding school

systems with a high school, a middle school, and four elementary schools serving 3,334 students. The district enjoys a positive regional reputation with above average standardized test scores and modern facilities but has been engaged in several due process hearings over special education compliance issues during the past decade, from 2000 to 2010.

Recently, the school district underwent special education cyclical monitoring by the Pennsylvania Department of Education during 2009-2010 and was cited for compliance issues related to least restrictive environment procedures. In particular, the district was said to have a "culture of segregation" and was not exploring all possible supplemental aids and related services to help students with disabilities stay in the general education environment. As a result, the Pennsylvania Department of Education required the district to undergo inclusive education training with an emphasis on co-teaching with the expectation that the percentage of students with disabilities receiving instruction in the general education environment would increase. The district was forced to write and submit a plan of improvement to address the above mentioned issues. District staff and support personnel received co-teaching training on the models of co-teaching as well as differentiated instruction training on several professional development days during the 2010-2011 school year and began implementing co-teaching the same year.

Participants

A form of purposeful sampling known as *site selection* was used in this study as this method allows the researcher to choose a site engaged in a particular activity or event and focus on complex micro-processes. A clear definition of the criteria for site selection is essential (McMillan & Schumacher, 1997). In this case, the

criterion was a school site implementing co-teaching with pairs of teachers made up of a general education teacher and a special education teacher.

The study included 34 participants of which 30 were faculty members working together in 15 co-teaching teams. Fifteen faculty members were general education teachers and fifteen were special education teachers. Four participants were school principals. All participants in the study were in their second year of co-teaching or were administrators responsible for helping to develop or implement the co-teaching program.

Data Collection

Data collection included: (a) interviewing participants, (b) observing co-teaching in classrooms, and (c) examining documents related to co-teaching. Each co-teaching team was observed three times in their classroom over the course of one school year and a post observation interview was conducted after each observation. An interview log was maintained in which researchers summarized participant responses to a series of questions from a semi-structured interview guide. Researchers utilized a co-teaching observation form (available for purchase from Keystone Educational Consulting Group) to record practices related to co-teaching which included professionalism, instructional delivery, classroom management, and assessment. Anecdotal information was recorded on the observation guide and the content was reviewed at the post observation interview. A total of 45 observations and interviews were completed.

Data Analysis

Content analysis was the primary method of analyzing the data. Interviews, field-notes, observation forms, and other documents related to co-teaching were coded and placed into pre-established categories. McMillan and Schumacher

(1997) advocate for the use of pre-established categories in qualitative research when the categories are related to the research question or sub-questions. The pre-established categories included the four subsystems found in any socio-technical system. The subsystems include: 1) technical, 2) task, 3) structural, and 4) human. We did this because the premise of the research was to examine co-teaching using a socio-technical systems lens. The coding included creating note cards with interesting, consistent, and poignant findings related to the data and placing them into one of the four pre-established categories. Once all data was coded, we went back into each category and challenged our initial interpretations looking for any possible alternative explanation related to the data. We then engaged in a form of pattern seeking in which we quantified the number of times a topic was identified in each category. This helped us to establish the major themes in each category.

In order to ensure validity and reliability we utilized a number of strategies and techniques. First, qualitative research done by multiple researchers is one method to enhance validity. In this case, four researchers with extensive prior work in the field collected and analyzed the data. Second, members checks were done in which we showed excerpts of our interpretations to participants for their review. Third, we triangulated our data including interviews, observation forms, and documents to identify consistency in results. Finally, we shared our results with other experts in the field to determine accuracy and feasibility.

Results

Like any large socio-technical organization that plans and implements a major change in the way work is conducted, significant changes to the subsystems

occurred in the George Washington School District as a result of implementing a co-teaching program. Consistent themes emerged in each subsystem. The following themes were the most frequently cited factors that should be considered when implementing co-teaching.

Structural Subsystem

Master Schedule. Developing a master schedule that supports co-teaching is often one of the most difficult and challenging aspects of creating a successful co-teaching program. Too often, principals take the path of least resistance and want to develop school schedules that look very much like the schedule from the previous year (Barger-Anderson, Isherwood, & Merhaut, 2013). The thinking behind that tactic is the least amount of change imposed on the faculty and staff creates a balance and harmony from year to year resulting in a more satisfied workforce. This approach to scheduling creates major challenges when implementing a co-teaching program because co-teaching requires common planning time for general and special education teachers. Principal Smith expressed the challenges he faced when creating a master schedule that supported co-teaching in one of the elementary schools in the study:

I had a difficult time building the master schedule to support co-teaching. For years my teachers were used to having their planning time and lunch period at the same time every year. We operated on a business as usual approach when it came to scheduling. This year I had to turn this schedule upside down and inside out to get people common planning time. It is impossible to give the special education teachers common planning time with each general education teacher because their working with three or

sometimes four teachers in a day. Next year I am going to work on having teachers start the school day 20 to 30 minutes earlier and designate common planning time for the entire faculty at a particular time before each school day. I will have to work with the union on this of course but this is the only way I can think to give everyone the planning time they need. I will also try to limit the special education teachers to working with fewer than three general education teachers. I don't know if I will be able to do it, but that is my plan moving forward...

Common Planning Time. Teachers expressed their frustration with the lack of common planning time which prohibited them from using all of the models of co-teaching. Janet, a special education teacher in the Middle School expressed her concern the following way:

We were trained in the models of co-teaching at the beginning of the year, but without common planning time, it is almost impossible to use some of these models. We mostly use the one-teach one assist model of co-teaching because many times I walk into the class and find out what we are doing for the day two minutes before the bell rings. I see the value in all of the models, especially the ones that allow for small group instruction. But, I can't utilize those models without prep time with my colleagues. This has to be addressed if we are going to make this work.

Time of Day. Another roadblock to implementing co-teaching unique to the elementary buildings related to the time of day specific subjects were being taught, mainly language arts. A majority of the elementary teachers we interviewed wanted to teach language arts early during the

school day. Because of the limited number of special education teachers available to co-teach in the elementary schools this was not possible. The principal constructed a master schedule that staggered the language arts block in each grade level across the school day. Many general education teachers expressed dissatisfaction. Sharon, a primary general education teacher expressed her contempt the following way:

I teach second grade students and have for the past twenty-three years. This is the first time in my career I have been asked to teach language arts at 1:00 in the afternoon. I just don't like it. The most important subjects should be taught when the students are best able to learn and that is when they first arrive. I understand inclusion and co-teaching are a part of the equation today but I feel like we just put an entire class of students in an unproductive situation to accommodate a few students with special needs. If the school district wants to do this the right way, they should hire a special education teacher for each grade level then we wouldn't have this problem. I question whether this is best practice.

Classroom Composition. A final structural roadblock to implementing co-teaching that was repeatedly identified by the co-teaching teams related to classroom composition. Teachers at the high school level struggled with the number of students with disabilities that were placed in the co-teaching classrooms. Averages ranged from 40% of the class to as high as 85% of the class. The principal of the high school defended this practice the following way:

What teachers don't understand is I have to make some tough decisions about scheduling the students as well as the special education teachers. I only have so

many special education teachers to go around. If we want the students to be supported and have co-teaching available we have to cadre many students together with IEPs and move them around the school day together. This way, we can service them and address their needs better because I have two teachers available. If I separate the students and spread them out, there is a less likely chance they will get co-teaching. I was told there is nothing illegal or out of compliance with what we are doing.

At the elementary buildings, each grade level in the school identified a particular class and teacher that would be designated as the inclusion class. All students with an IEP in a given grade level were clustered in the class and supported with a co-teacher. Problems arose throughout the year when students from the other classes in the grade level were identified with a disability and given an IEP. This required the student to be uprooted and moved to the inclusion class. Periodically parents would protest this as would some of the teachers. It also created an uneven distribution of students across the classes in some of the grade levels.

Kelly, an intermediate elementary teacher, expressed her concerns:

I'm not really sure this practice is in the spirit of inclusion. I mean shouldn't we be spreading the students with disabilities out evenly so they all are integrated with their nondisabled peers? It seems as if we have simply created a resource room in each grade level and included some nondisabled students in it. I thought the idea behind inclusion was that the students with disabilities can learn and interact with their nondisabled peers. If I was a parent

of a general education student in the inclusion class, I might have a problem with this arrangement.

Technical Subsystem

The technical subsystem of an organization comprises the devices, tools, and techniques needed to maintain and/or enhance the performance of an organization. In a school system, the pedagogical practices of teachers and all of the components of instructional delivery and classroom management are a part of the technical subsystem. Implementing co-teaching had a significant change on the technical subsystem in all of the schools we studied. The following were the most frequently identified themes that emerged in this subsystem:

Instructional Delivery. According to Barger-Anderson, Isherwood, and Merhaut (2013) there are five models of co-teaching that provide teachers with a systematic approach for implementing shared instructional practice. All five models of co-teaching were observed and the majority of teachers interviewed expressed great satisfaction with co-teaching when they felt supported. They discussed the benefits of having two professionals in the classroom which included an increased intensity of instruction, reduced discipline referrals, and an ability to create lessons that were more multi-modal and student centered. Ronni, a middle school English teacher, shared her experience the following way:

Co-teaching is making me a better teacher. My partner Sheri is so creative. She brings so many unique ideas to the class and I learn so much from her. We use a lot of the models of co-teaching that require grouping students for instruction. Sometimes we group randomly and sometimes we group based on need. Either way, the lessons

are always student centered, hands-on, and the kids seem to really like having the two of us in the class. Co-teaching is working out great for us.

Classroom Management. A number of teachers implied during interviews that co-teaching improved classroom and behavior management. Tammi, a middle school math teacher described it this way:

We definitely have fewer behavior problems with the students as a result of two of us being in the classroom. It feels like we are able to prevent disruptions before they even begin. My partner is often moving through the classroom checking students for understanding and redirecting off task behavior. We also like to use the co-teaching models that reduce student to teacher ratio. These smaller, more intimate groups, seem to reduce student misbehavior. If I could tell you one thing I think we benefit from co-teaching it would be the reduction in behavior problems.

Human Subsystem

Teacher Autonomy- The Human Subsystem might best be defined as the people working in an organization and the complex relationships that exist between individuals and between groups of people working side by side. The Human Subsystem is influenced by workers' values, beliefs, communication, flexibility, job satisfaction, and commitment. Teaching has historically been an autonomous profession in which classroom teachers work in isolation in loosely coupled organizations interacting with colleagues on an infrequent basis most of the work day. The introduction of co-teaching was viewed by some as a radical departure from this autonomy. Jessica, a middle school social

studies teacher described her experience the following way:

I had to get used to someone being in my room with me three periods a day. I have been teaching for 12 years and this was the first time I ever shared a classroom space. At first I was nervous and felt like my co-teacher was going to judge me. But within a few weeks, the nervousness went away and I got more comfortable. Co-teaching is definitely making me a better teacher. We share ideas, laugh during the school day, and even spend time outside of school as a result of working together as co-teachers. I am becoming a better teacher because of co-teaching.

Work Ethic- Not everyone was as positive about co-teaching as Jessica. Frank a middle school science teacher with 32 years of teaching experience did not have a good experience with his co-teaching partner. He attributed it to different work ethics and a different philosophy about the classroom teacher's responsibilities related to curriculum. He struggled to professionally connect with his co-teacher because of different values. He summed it up the following way:

I am a science teacher! I have been for over 30 years. I was trained in the area of Life Science and I understand the curriculum. My partner is a special education teacher. She knows very little about science and doesn't seem to think it is important to learn it. She seems to think she can show up and "wing it" and it's alright to do this. If we are going to be equal partners in the class, she needs to learn the material and come prepared. I have yet to see that level of commitment and until I do, she is going to have a limited

role in this classroom. It's not my job to tell her that. She needs to be a professional and take responsibility for the curriculum. Our work ethic needs to be equal or this will never work!

Examples like this co-teaching partnership above were unable to realize the total benefits of co-teaching and were mostly observed using the one teach- one assist model. There was a sense of stratification in the classroom between the teachers, and the students were observed in many situations treating the special education teacher like a para-educator. In the dysfunctional co-teaching partnership the special educators described themselves as becoming de-professionalized and reported feeling a sense of frustration.

Task Subsystem

Owens and Steinhoff (1976) in their description of socio-technical systems described the task subsystem as organizational behaviors that include planning, organizing, decision making, clerical work, and other types of activities that effect process efficiency within an organization. The implementation of co-teaching had an effect on the task subsystem in several ways.

Special Education Paperwork- Compliance with IDEA and state special education guidelines requires special education teachers to manage various documents and processes. This includes writing Individual Education Plans, completing student re-evaluations, completing functional behavior assessments, writing positive behavior support plans, and conducting progress monitoring on IEP goals. The implementation of co-teaching reduced the flexibility of special education teachers' schedules and impacted their ability to complete these tasks. Sharon, a high school special education teacher described it this way:

Other than teaching, the most important task of a special education teacher is to manage the students' paperwork. This includes writing and changing IEPs, facilitating meetings, progress monitoring, and doing reevaluations. Before we started co-teaching, I could do these things in the resource room or on my planning period. Now, I have less time to manage the paperwork as I prepare for my co-teaching lessons or I plan with my co-teaching partner. I don't dare leave my co-teaching classes to do the paperwork. Our principal indicated this was unacceptable. The administration wants us teaching and is holding us accountable for being in the general education classrooms and teaching. This has caused me to fall behind a bit on the paperwork.

The majority of special education teachers interviewed in the study indicated this was the most significant change in the task subsystem. Many also indicated that professional differences would periodically arise between the special education teacher and the general education teacher over scheduling these compliance processes. Maddy, a high school math teacher shared her frustration with us:

I understand how important it is to have IEP meetings but my co-teacher continues to schedule all of her meetings during the last period of the day when she should be co-teaching with me. She has missed at least one class per week because of these meetings. How can we co-teach if she isn't going to be here? It definitely hurts her status in the classroom with the students. They don't see her as the "real teacher" because she isn't here as much as I am.

These sentiments were expressed by many of the general education teachers in the study.

Discussion

Few can argue that the 2004 reauthorization of the Individuals with Disabilities Education Act and the No Child Left Behind Act of 2001, and other special education laws and decisions specific to individual states and certain federal circuit courts are moving school districts toward a more inclusive environment for the education of all students (Werts, Culatta, & Tompkins, 2007). Because of increased inclusive practices and the evolving diverse composition of classrooms, a new paradigm is emerging for the delivery of special education services with co-teaching at the center of it. This change in the service delivery model can be challenging and can create many unplanned and unanticipated consequences in the school system as documented in this study. These changes can be both good and bad but almost always result in a new sense of tension created in the organization as each of the subsystems is impacted by the change and as members of the organization attempt to cope with the changes. In an effort to implement co-teaching and inclusive school practices, school administrators and faculty might do well to consider some of the following suggestions.

First, it seems imperative that a “business as usual” approach to scheduling be abandoned with co-teaching as a top priority in the schedule making process. Principals must do their best to limit the number of co-teaching partners that a special education teacher works with during the day to only a few and provide opportunities in the schedule for common planning time. Limiting the number of partners that a special education teacher works with will not only allow the co-teaching partners to

establish better rapport but it will make the quality of the co-teaching better. Possible ways to provide common planning time other than scheduling it during the day include bringing substitute teachers in once a month to relieve co-teachers of their classroom duties for planning, releasing co-teachers from morning or afternoon duties such as bus supervision, cafeteria duty, homeroom supervision, etc. and allow co-teachers to plan during these times or providing compensatory time for teachers who stay late or come early to school to co-plan together. Teachers might also utilize technology to co-plan such as internal networks, Skype, wiki spaces and email. While these digital tools cannot replace face to face planning time, they do give teachers the opportunity to communicate and plan lessons.

Also, principals must consider classroom composition as they are creating both the master schedule for teachers and students’ individual schedules. A plan for classroom composition that includes a manageable ratio of students with IEPs to students without disabilities is essential in any co-taught general education classroom. The literature on co-teaching and inclusion supports a ratio of three students without disabilities to every one student with an IEP as an ideal class makeup and an optimal environment (Villa, Thousand, & Nevin, 2008). Principals would do well to work with faculty members to create a strategy for cluster grouping students with disabilities so that students with the highest degree of need are serviced in classrooms with co-teachers. Cluster grouping should be more than just a random procedure completed by a computerized scheduling system; it must be a thoughtful decision that takes each student’s individual needs into consideration and is based on analysis of student data (Barger-Anderson, Isherwood & Merhaut, 2013).

Another suggestion for school administrators planning to implement co-teaching is to consider teacher personalities when developing the co-teaching teams. Gately and Gately (2001) state that personality type is a factor to be considered in order to promote successful collaborative efforts within a shared setting. Some pairs of co-teaching teams will naturally work well together from the minute they begin sharing a classroom. Others may take as long as three years to evolve into an effective co-teaching team. The Four Temperament Model proposed by Robert Rohm (2008) is a resource school administrators can use. This model offers four profile types to define a person's temperament or personality. The model can provide administrators with valuable information that will help them to establish co-teaching partnerships that will thrive.

School administrators should also plan for professional development in the area of inclusion and co-teaching with faculty and para-educators. For inclusion to be successful, it is essential that teachers receive training in the rationale behind inclusion and in the models of co-teaching. Teachers must be informed about why they are scheduled to co-teach and their questions, concerns, and fears must be addressed (Villa, Thousand & Nevin, 2004). The autonomous nature of teaching is changing which can be very stressful for teachers as they are asked to share classrooms with teachers and accept the responsibility of teaching students with disabilities in the general education classroom. A common source of concern is the lack of knowledge on the part of general education teachers about teaching students with disabilities (Cook, 2000), which can lead to negative attitudes toward inclusion (Silverman, 2007). If training is provided to teachers in the area of instructional strategies for students with disabilities and

the models of co-teaching, teachers may be more willing and more positive about inclusive and collaborative education.

Once professional development is provided and co-teaching teams have been established, the final step in the process of creating and sustaining inclusive schools is evaluating teacher effectiveness. This includes setting clear expectations, validating collaborative efforts through frequent observations, providing co-teachers with regular feedback to help them grow professionally, and evaluating co-teaching teams in a fair and consistent manner (Barger-Anderson, Isherwood & Merhaut, 2013). The power of co-teaching is in the use of models that create small groups and increase the intensity of instruction through a decreased student to teacher ratio. Bos and Vaughn (2002) suggest that the students with the most intensive instructional needs require more of their instruction to be delivered in small groups. Small group instruction increases students' opportunities to practice skills and receive feedback from teachers to enhance learning. Co-teachers who use the stations model, parallel model, and the alternative model tend to have students who are much more engaged in learning, participate more actively, and demonstrate less off-task behavior. School administrators should stress the use of these models in particular while also continuously providing training on all of the models of co-teaching.

Limitations and Future Research

This study attempted to document and describes a significant change in the special education delivery model in a large suburban school district with inclusion and co-teaching at the core of the change. We were also seeking to provide school administrators and teachers with suggestions for avoiding roadblocks to the successful implementation of co-teaching and inclusion. Although we were able to answer

the research questions posed, we do recommend caution when attempting to generalize the study results due to limitations in the research.

First, the George Washington School District is a large suburban school district with an abundance of resources and a higher than average number of special education personnel available for co-teaching. Smaller school districts may have much more difficulty creating a comprehensive co-teaching program due to the lack of available special education teachers. The ratio of special education teachers to students with disabilities is above the state average in this school district making the administrative task of developing a co-teaching schedule easier than it would be in a smaller school district with fewer available special education teachers.

Also, the George Washington School District was participating in the study during a time period in which the special education program was audited and the district received a less than flattering report from the Pennsylvania Department of education mandating training in inclusion and co-teaching. One cannot help but think the audit process and report created a sense of tension among the faculty which may have influenced the way the study participants responded to the questions posed by the researchers.

Finally, more quantitative research is needed in the area of co-teaching and inclusion to determine if co-teaching has a positive impact on student achievement for students with and without disabilities. There is some existing quantitative research supporting co-teaching as an effective instructional delivery model but the abundance of research is qualitative in nature and targets teacher responses to co-teaching. It would serve the field of special education well if more research was done in a quantitative nature since this service

delivery model has been a national phenomenon over the past ten years and instrumental for inclusion where all children are a part of one education system.

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