Innovative University-School Partnerships
Co-Teaching in Secondary Settings

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Introduction

In an era of standardized exams to support No Child Left Behind, the influence a teacher candidate has on a P-12 classroom can greatly impact the academic achievement of students. Yet, Bacharach, Heck, and Dahlberg (2010) note that institutions find great difficulty in finding high-quality placements due to the hesitancy of cooperating teachers to accept a teacher candidate into their classrooms. And when there are placements, student teachers are often isolated or inadequately supported (Bacharach, 2014). This is attributed to the insecurities of cooperating teachers to release their students to teacher candidates and risk unknown results on high stakes exams.

The National Council for Accreditation of Teacher Educators (NCATE) Blue Ribbon Panel Report (2010) suggested that teacher preparation programs and school districts need to view the preparation of teachers as the responsibility of both institutions. Current research in teacher education points to the co-teaching model in elementary classrooms developed by St. Cloud State University (MN) as one example of systemic change. St. Cloud authors Bacharach, Heck, and Dahlberg (2010) state that co-teaching "has

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the potential to unequivocally change the face of teacher preparation and student teaching as we know it today" (p. 13). The NCATE Blue Ribbon Panel acknowledged the potential strength of this model when they named it a "promising practice" in clinical preparation (NCATE, 2010).

Professional development, collaboration, and quality mentoring are critical practices that enhance a teacher candidate's experience (Tobin & Roth, 2004). Yet, it is rare for teacher preparation institutions to create and deliver P-12 professional development during the clinical practice experience for both teacher candidates and cooperating teachers. It is even more unusual to have this occur at the high school level. This article will share the findings of a unique three-year partnership between two high schools and a university teacher education program, using the co-teaching model as defined by St. Cloud State University, and combined with professional development workshops for all participants.

Background

While the complexities of the P-12 classroom have changed dramatically, the model of clinical practice, where the teacher candidate enters the room and the cooperating teacher leaves the room "has not changed significantly since the 1920's" (Bacharach et al., 2010, p. 3). This traditional "sink or swim" model does not educate students in the least restrictive environment or support all students in making adequate yearly progress. In this model, teacher candidates enter the classroom, spend the first few weeks as a silent observer, gradually take on small teaching tasks, and increase their teaching to full days for longer periods of time (Bacharach, Heck, & Dahlberg, 2010). As the teacher candidate's role increases, the cooperating teacher's role decreases, culminating in the teacher candidate's solo-teaching for extended periods of time. As the teacher candidate completes solo-teaching, it is common for the cooperating teacher to leave the room, taking the expertise with them.

Learners with disabilities and academic challenges are spending more time in general education classrooms, requiring general education teachers to alter their practice. With this emphasis, the role of the teacher candidate and the model in which they engage in clinical practice must be modified. State testing requirements often cause teachers and administrators to question whether or not teacher candidates in their classrooms are appropriate. Yet, according to the NCATE Blue Ribbon Panel Report (2010), teacher preparation must prepare teacher candidates to make informed decisions about student performance while evaluating their own practice under the guidance of a veteran teacher.

It is critical then, to examine a variety of teacher candidate practicum models in order to maximize effectiveness.

In 2003, St. Cloud State University redefined co-teaching for teacher education as two or more teachers delivering instruction to a diverse classroom of learners in one classroom or space. This model included the pairing of a general education teacher with a specialist, such as a special education teacher, literacy specialist, or speech/language therapist (Cook & Friend, 1995). Their goal was to better prepare teachers to meet the needs of diverse learners in P-12 settings, and develop their ability to collaborate with educational professionals in the building (Bacharach et al., 2010).

Co-teaching was found to be an effective model for student learning (Bacharach et al. (2010). Three-year cumulative student data revealed statistically significant improvement in reading and math when compared to students in non co-taught classrooms (Bacharach et al., 2010). Improvement included students who were eligible for free/reduced lunch, special education, and English language learners (Bacharach & Heck, 2011). Graziano and Navarrete (2012) explored co-teaching in an undergraduate teacher education program and found similar positive results. Their findings were consistent with Bacharach and Heck (2011) as they found co-teaching to be a way to increase academic growth while meeting diverse needs.

Bacharach, Heck, and Dahlberg (2008a) identified five specific areas as critical to the success of this model in K-12 settings: "planning, communication, relationship, classroom applications and co-teaching knowledge" (p. 46). During the *planning* process, *communication* between the pair is crucial as instructional decisions are made. As teaching responsibilities are negotiated, the *relationship* is strengthened, leading to collaborative *classroom application*. Strong lessons can be developed and implemented when the co-teaching pairs develop a common understanding of the *co-teaching cycle* and their role in it. When teams collaborate effectively, the cycle starts all over again.

The interconnected components of the co-teaching model equip the co-teaching pair to differentiate the lesson, meet diverse learning styles and goals of each student, and focus on identical learning objective(s) for all students (Conderman, 2011). With co-teachers planning, implementing the lesson, reflecting, and assessing together, student needs can be met more effectively. Two teachers actively involved in one classroom afford individualized attention for students in those classroom settings. "When done well, co-teaching may be the answer to motivating students, raising test scores, motivating teachers, and reducing behavior issues" (Bozella, 2010, para. 5).

Co-teaching as part of the process of preparing teacher candidates requires a strong relationship between the teacher preparation institution and P-12 schools. "The best school-university partnerships are two-way streets—offering not only deeper practical training for new teachers, but also ongoing professional development for seasoned classroom educators" (Allen, 2003, p. 1). Bacharach, Heck, and Dahlberg (2008b) discovered that cooperating teachers ranked university support as an important component to the success of the co-teaching model. This finding is consistent with Beare, Chiero, Torgerson, and Behrend (2009) who found that when "teacher candidates, P-12 teachers, and university faculty become members of the partnership learning community, traditional roles may be altered and expanded" (p. 1), which provides increased opportunities for personal and professional growth. When co-teaching is implemented as part of a school-university partnership, it is a winning combination.

Purpose of the Study

With accountability for student achievement on both P-12 teachers and teacher education programs, it is important to understand the effectiveness of a co-teaching model for both institutions. The data helped answer the following research question: How does a co-teaching partnership affect the classroom performance of teacher candidates, the classroom performance of cooperating teachers, and the classroom environment?

Methodology

The Master of Arts in Teaching (MAT) Program in which this study was conducted followed the traditional model of clinical practice practiced by most teacher education programs across the nation. There are lessons to be learned from teacher candidates, cooperating teachers, principals, and high school students who find themselves in the midst of a unique co-teaching school-university partnership. To this end, a design-based research theory was used to guide the study.

According to *The Design Based Research Collective* the methodology includes both researchers and educators working together seeking to enhance "theories of learning by designing, studying, and refining rich, theory-based innovations in realistic classroom environments" (Design-Based Research Collective, n.d.). Design-based research affords the researcher the ability to test and refine educational designs based on previous research (Collins, Joseph, & Bielaczyc, 2004). The theory

promotes innovative practices in educational settings by providing the researcher an opportunity to observe, question, and create practices that enrich the educational setting (Bell, 2004). The intervention is designed and then implemented in an authentic setting.

The Design-Based Research Collective (2003) outlines the following five characteristics of good design-based research:

- The goals to design and develop theories of learning are interconnected;
- The development and research includes a continuous cycle of creation, implementation, evaluation, and reshaping;
- The results of the research communicate relevant implications to educators who create the designs;
- The research explains how the design functions in the setting and how it shares successes and failures to help refine the design; and
- The research develops experiences that connect implementation to desired outcomes.

The above characteristics are evident in our design-based research study. St. Cloud State University's model of co-teaching served as the foundation for the creation of our own model. It created a continuous cycle for design, implementation, reflection/evaluation, and redesign that we could study. Professional development workshops encouraged collaborative study/discussion and analysis of the model, leading to refinements and scalability to accommodate growth.

Context and Participants

Our university prepares approximately 140 teacher candidates annually for a teaching license and a master's degree. The MAT students in this study were in our program for 11 months. Participants entered the four-month fulltime co-teaching partnership after an eight-week part-time practicum experience using a traditional model of student teaching. Having both experiences, teacher candidates were able to reflect on and compare the two models of student teaching.

This three-year study on co-teaching effectiveness took place with MAT students and two local high schools, and included institutional IRB approval. We chose two high schools located in close proximity to our university; both had limited experience with co-teaching between general educators and specialists. Between the two high school sites, participants included a total of 40 teacher candidates, 40 cooperating teachers, two university supervisors, two high school principals, and two

teacher educators. Seven of the teacher candidates were from historically under-represented minority groups; four were bilingual. Content teams represented math, science, social studies, language arts, chemistry, business, Spanish, drama, art, and band classrooms.

In addition to the participants identified above, we collected data from 284 high schools students out of over 480 with whom our teacher candidates worked. U.S. News and World Report (2013) provided demographic information on both high schools. One had approximately 1642 students in grades 9-12. Of those, 23% were of minority populations and 36% were identified as economically disadvantaged. The other high school had 1386 students; 14% were of minority populations and 18% were economically disadvantaged.

St. Cloud State University (2009) developed seven co-teaching strategies and examples. These include: (a) One teach, one observe [together they decide on a specific focus for the observation]; (b) One teach, one assist; (c) Station teaching; (d) Parallel teaching; (e) Supplemental teaching, (6) Alternative or differentiated teaching; and (7) Team teaching. All co-teaching strategies were used; however, the specific approaches and frequencies implemented were dependent on content area and student performance. Strategies highlighted most frequently were one teach, one assist, and team teaching. As a result, within a few days of beginning the placement, the teams were co-planning and the teacher candidate was teaching alongside the cooperating teacher. Other than the cooperating teacher taking the lead at the beginning and the teacher candidate taking the lead during their work sample, each teacher candidate/cooperating teacher team used the co-teaching model almost exclusively: co-planning, co-teaching, co-analyzing, and co-reflecting on their teaching and student performance.

Two university supervisors were assigned to the building. Their role included five or six formal evaluations as well as multiple drop-in visits. Beyond the evaluations they provided continuity and ongoing feedback for effective teaching, kept the topic of co-teaching in the forefront, and fostered an enhanced relationship with the teachers and administration. In addition, the supervisors brought their general observations to the professional development workshops to both encourage and influence effective co-teaching. Supervisors indirectly influenced veteran teachers' co-teaching instructional effectiveness through the evaluation of their teacher candidate's teaching practice.

One of the unique facets of our partnership was the professional development that occurred each month. Release time was given to the co-teaching pairs for these four half-day workshops. During these sessions, time was given to share successes and challenges, hear from

university supervisors on growth and challenges, introduce new co-teaching strategies, review current research in the area of co-teaching, enhance teaming/bonding, and plan future lessons. These activities were essential components in our design-based research.

Data Collection and Analysis

Five methods of data collection were utilized to triangulate the data and support the research questions: surveys, anecdotal comments, written reflections, classroom observations/supervisor field notes, and student teaching evaluations. Data were collected on a regular basis throughout the term and at the end of the teacher candidate practicum experiences. During each professional development workshop, we recorded comments made during times of intentional reflection and verbal sharing of experiences. Each participant also completed an open-ended exit slip at the end of each workshop. Participants shared their perceptions of the successes and challenges of co-teaching, strategies that were most and least effective for their content area, the impact co-teaching was having on teaching and learning in their classroom, and the effects co-teaching was having on teacher candidate and cooperating teacher performance.

At the end of the teacher candidate's student teaching experience, high school students in co-taught classrooms were surveyed. They were asked to describe what co-teaching was like for them and respond to three closed- and open-ended questions. Using a Likert scale, students assigned a value to each of three statements as to whether they believed they learned/did not learn the content/material, liked/did not like the co-teaching arrangement, wished/did not wish more classrooms would use co-teaching. They were then asked to explain each of their ratings. The survey also asked students to share their perception of the percentage of time their cooperating teacher and their teacher candidate each "taught" the course content.

Because we believe that both personal and collective narratives shape our perspectives, we approached data analysis using a narrative lens. We analyzed the extensive amount of qualitative data we had to determine the effectiveness of the co-teaching model on the performance of all involved. We created a template and recorded over 350 comments made by participants regarding their perceptions of the co-teaching experience. From this we examined the data to determine recurring topics, patterns, and categories that would shed light upon the perceptions of the participants (Berg, 2007; Creswell, 1994). Comments were coded, synthesized, and then re-examined for prominent and emergent themes.

Findings

The data describing participant viewpoints revealed valuable insight into co-teaching performance. Data were remarkably similar from all groups of participants and three themes easily emerged to answer our research question: (a) differentiation, (b) planning, lesson implementation, and assessment; and (c) classroom climate.

Differentiation

Teacher candidates perceived an increase in the quality of their teaching, especially in the area of differentiation. A cooperating teacher said, "The support of a co-teacher in the room has been invaluable to support student learning, to differentiate instruction and to meet student needs." A second cooperating teacher shared, "Struggling and accelerated learners are getting what they need in a meaningful way." And another said that those who learn more easily "can be challenged further." A teacher candidate summed up the co-teaching experience by saying, "We are able to differentiate, reflect, plan, and assess so much more effectively as a team of teachers."

The ability to differentiate and also engage more students was attributed to the smaller student-to-teacher ratio. A teacher candidate shared the benefits of this smaller ratio when he said:

> I had the opportunity to pull five students out in the last period class to take a practice test, go over answers, and work on the earlier targets they failed. As we went over the answers, the students were very engaged. They asked questions and tried very hard. These were students who are typically very quiet and reserved in a whole class setting. I am sure the small group atmosphere helped them feel safe and comfortable.

High school students recognized that a second teacher provided an opportunity to see course content from multiple perspectives. One student said, "With the second teacher [in the classroom], I sometimes see a different side of things I probably wouldn't have before."

Planning, Lesson Implementation, and Assessment

Lesson planning and implementation with the co-teaching model produced lessons with depth of content and promoted increased student engagement. Teachers said "Kids are more engaged," and believed that the quality of their teaching had been elevated as a result. A cooperating teacher shared that multiple perspectives on content and student needs had strengthened lesson planning. Another cooperating teacher echoed this, stating, "Co-teaching, while it takes more coordination and time at moments, ultimately pays off in the final product for the students."

A teacher candidate said, "The result was developed lessons that were fine-tuned" before being presented to the students. One co-teaching pair said, "We have developed a manner of working together that incorporates on-the-spot reflection of each lesson, period by period."

In the band classroom, co-teaching was particularly helpful as students prepared for an upcoming concert. It worked well for one teacher to direct the band while the other worked with individual instrument sections, moving from section to section or student to student, to assist with areas of difficulty. In all classes, teachers reported the ability to engage the class as a whole and work with small groups of students. A teacher candidate felt there were fewer interruptions when he said, "[Co-teaching] creates smoother transitions and less waiting time for students." A principal commented that "learning is dynamic, kids are engaged, and kids are benefitting." One student summed up her experience with co-teachers, saying, "When there are two teacher figures, they learn teaching techniques from each other, which in turn brings out the best methods for the class."

Classroom Climate

Participants identified support, classroom management, and relationships as characteristic of their co-teaching classroom. Together these created a positive classroom climate, which was enhanced through the co-teaching model. One student said, "Once we started learning from a student teacher, our work, grading, and classroom environment seemed to get more organized."

Support. Students in particular made comments that highlighted the overall classroom experience as positive. Data revealed that high school students in co-taught classrooms were glad the cooperating teacher did not have to leave the room when the teacher candidate took the lead. Students reported receiving additional support to clarify content, engaging lessons because of two teachers with differing personalities, and more timely feedback on lessons, assignments, and tests. One student commented, "Mrs. Stovall and Mr. Johnson work well together, and efficiently help the students. Having another teacher has made a huge difference." Another one said, "It has been a wonderful experience."

Students in co-taught classrooms found it easier to connect with one teacher over another—often the result of two styles of teaching. One student shared, "When one teacher was helping one student, another could be helping [someone else], and if a student didn't get the way one teacher described something, you always had the other teacher's definition to lean on. If more classes had this arrangement, I would have

an easier time learning." Another said, "Different teaching styles open new pathways to make connections with us as students." According to one cooperating teacher, the addition of these supports allowed for an increase in student scores. While nearly all student comments were positive, one student said that having two teachers in the classroom was distracting because of an additional conversation going on.

Classroom management. With two teachers to facilitate student learning in co-teaching classrooms, participants reported fewer behavioral problems. This was consistent with what university supervisors reported from their field notes. Teacher candidates conveyed their perceptions of increased self-confidence and fewer classroom management problems. One said, "It has been valuable to see how my CT handles situations differently than I would and to see the outcome." Science teachers perceived a great degree of assistance for procedures during lab classes. One said, "Students are safer with two teachers in a science lab."

Relationships. Cooperating teachers and teacher candidates commented on good working relationships, the strength of their collaboration, a healthy "give and take," and a strong trust level between them. They also appreciated the other's ability to stretch their thinking. One cooperating teacher said, "I appreciate having someone to bounce ideas around with, someone who challenges me, and asks questions. This feels like a true partnership, and we can see our students learning and growing because of our teamwork."

Bringing the co-teaching pairs and university supervisors together for professional development workshops fostered a community of support between all participants. Cooperating teachers stated appreciation for the time they were given with their teacher candidate to delve more deeply into co-teaching strategies. One said, "I found the workshops to be key in helping develop the partnering relationship that I shared with my student teacher. We were able to research and implement many different styles of co-teaching depending upon the lesson and the needs of my kids. The workshops were invaluable!"

Both a supervisor and a high school principal spoke of the isolation a typical teacher candidate feels in her or his placement. They each commented that a co-teaching partnership is a healthier and more supportive setting for a beginning teacher. The principal added, "Co-teaching forces you not to be territorial." She expressed the importance of cooperation and risk-taking skills for teacher candidates in her building. "I want teacher candidates that are collaborative and people who are willing to be vulnerable," she said.

The data revealed only a few challenges in the partnership. Dis-

satisfaction was expressed by a few cooperating teachers due to the misalignment of university and high school calendars; these comments influenced subsequent calendar structures. At the end of the student-teaching experience, a teacher candidate suggested the desire to have a cooperating teacher who had co-taught before, and also stated that co-teaching should be included when they learn how do lesson planning.

Discussion

This study used a design-based research method of investigation. We created this model to use a theory-based innovation (co-teaching) with an added professional development experience in our teacher preparation to see how theories of learning were interconnected. Our cycle of ongoing data collection helped us continually study the model's effectiveness in this setting and refine it with each workshop we led.

As mentioned previously, five specific areas were identified as critical to the success of this model: "planning, communication, relationship, classroom applications and co-teaching knowledge" (Bacharach, et al., 2008a, p. 46). These areas were incorporated into and supported in our study through the professional development workshops for co-teaching pairs. Murawski and Dieker (2004) warned that "teaching in the same classroom to the same students at the same time is often the component that is most disconcerting" (p. 56). For this reason, it was imperative in the workshops that the pairs had an opportunity to spend time together to build trust. As the co-teaching pairs worked together in their classrooms with students and in the workshops, their relationships developed, fostering true collaboration and connecting the components of co-teaching. The partnership also created the opportunity for professional growth for both partners. Cooperating teachers stated that they enjoyed renewed energy for teaching as they learned, reflected on their teaching, and implemented new methods and strategies shared by their teacher candidate.

Both seasoned and inexperienced teachers gained from the give and take. In the final debriefing session, a veteran teacher who was hesitant at the beginning said, "I am a believer in the co-teaching model!" This sentiment was echoed by a cooperating teacher who said, "In an ideal situation, all teachers would work in this kind of environment daily." Reflecting on the experience, the successes and the challenges, one principal said, "It's an investment in the future, the next generation of teachers."

The findings of this study are consistent with Bacharach et al. (2010) who reported that their research clearly demonstrated the "positive impact of co-teaching on learners" (p. 1). University supervisor observations of classrooms revealed high student engagement and few inter-

ruptions, resulting in maximization of instructional time. Our study was also consistent with Bacharach and Heck (2011) who found that P-12 teacher candidates in co-teaching models felt prepared to handle classroom management issues, receive feedback, reflect on one's practice, and differentiate instruction. Cooperating teachers reported the ability to meet the needs of diverse learners, grow professionally in their own practice, and experience renewed energy for teaching. Students in co-taught classrooms experienced increased engagement and individual attention.

In considering why our data was almost entirely positive, we believe those who participated in the co-teaching model had nothing to lose and everything to gain. Cooperating teachers and high schools students enjoyed a 50% reduction in the ratio of teachers to students, teacher candidates were seen as equals with their cooperating teacher and therefore more competent, and principals were pleased with the level of student engagement and growth of their teachers.

Conclusion

While the results of this study were found to be positive, limitations are noted. Our choice of school sites was based on close relationships with the two principals. Had we implemented this model at high schools to which we were less familiar, results may have been different. A second limitation was choosing two suburban high schools over an urban or rural school, even though their demographics were different, particularly in minority population.

The pursuit of innovative clinical practice models will propel researchers to continue studying co-teaching. Future research could include implementation of co-teaching with professional development in alternative high school settings or middle school classrooms. In addition, absent from current literature is an analysis of teacher candidate disposition development as a direct result of the co-teaching model. Future researchers may also want to consider the locations of their school sites to ensure a variety of settings. Lastly, a study could be conducted with teachers in their first year of teaching, who as teacher candidates taught with a co-teaching model, to explore how the skills learned translated to having their own classroom.

As schools and universities come together to address systemic challenges, it is clear that new ideas and models are needed. The innovative co-teaching model created and implemented in this study confirms co-teaching as a promising practice for teacher preparation programs. The addition of professional development and implementation in a high

school setting add to current literature on the potential of co-teaching. The results of this design-based study are important in the field of teacher education because they specifically describe a model for preservice teaching that is perceived by teacher candidates and cooperating teachers as a positive approach to student teaching. Similar mutually beneficial partnerships combining a co-teaching model and professional development can enhance the learning of cooperating teachers, teacher candidates, and high school students.

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