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A Review of the Literature Concerning the Implementation and Efficacy of  
Co-Teaching as a Means for Meeting the Needs of Students with Learning Disabilities

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Effectively meeting the needs of students with learning disabilities is a challenge faced by schools everywhere. The impact of learning disabilities is so influential that it has resulted in the enactment of federal legislation that addresses this issue directly, and impacts instruction in classrooms across the country. The implementation of IDEA and its subsequent refinements require that educators take specific actions to mitigate the influence of such disabilities on learning in public schools. Chief among these requirements is the concept of delivering instruction to students with disabilities in the least restrictive environment possible. The key to effectively meeting the needs of students, in light of this requirement, appears to lie in the ways in which a school manages both general education and special education human resources (Friend & Cook, 2010; Murawski & Swanson, 2001; Ervin, 2010).

Teachers providing instruction to students usually fall into one of two categories, based on training and specific endorsements. The term general education teacher typically refers to a teacher, whose training and subsequent qualifications are centered on the understanding of specific curriculum and generalized instructional practices. Special education teachers, on the other hand, have received training and attained qualifications that prepare them to deal with the more particular issues related to learning for students burdened with any one or more of a wide variety of specific physical or cognitive disabilities. The effective utilization of these specialized, yet related, skill sets, within a school's instructional program, lies at the heart of meeting the needs for all of the students served by that program. With respect to the needs of students with specifically identified learning or attention difficulties, it seems obvious that effective collaboration between general education teachers and special education teachers would be essential. However, what is not quite so obvious is the particular nature of such collaboration that will be most beneficial in meeting these needs in ways that are both effective and respectful.

In recent decades the popularity of collaborative teaching, or co-teaching as it is sometimes known, has evolved as an increasingly common method for meeting these needs (Friend & Cook, 2010). However, empirical evidence to support the efficacy of such practices and the validation of constructs to guide the planning and implementation of co-teaching appear to have trailed behind its growth in popularity. Co-teaching makes sense at an intuitive level, for several reasons. From an instructional perspective, it seems logical to suggest that when the curricular expertise of general education teachers is combined with the knowledge about learning needs for children with certain learning disabilities, brought to bear by special education teachers, the result should be appropriately differentiated instruction that can meet the needs of all students in a single setting. Furthermore, such collaboration should enhance the skills of both general education and special education teachers, as they share knowledge, work together to plan and implement instruction, and mutually reflect on the efficacy of practices collaboratively designed for the classroom. While all of this makes good intuitive sense, the evidence to support such claims is scant, at best (Friend & Cook, 2010; Murawski & Swanson, 2001).

The purpose of this literature review is three-fold. First, the common definitions and practices associated with co-teaching will be briefly explored, in order to outline a framework, against which to examine empirical evidence. Secondly, I will briefly examine some of the experimental evidence that appears to provide support for the efficacy of this form of collaboration. Next, it will be beneficial to take a brief look at some of the qualitative evidence that appears to exist, supporting the benefits of co-teaching, in the development of effective teaching practices. Finally, I will attempt to piece together this information in a manner that will provide implications and perhaps a rationale for further action research.

Perhaps the most comprehensive work done to establish the nature and protocols for co-teaching has been laid out by Cook and Friend (1995). In that paper, they laid important groundwork that has since become a popular source of guiding principles for co-teaching in schools across the globe. First, they established important definitions and constructs for the professional discussion of this practice. Secondly, they set forth an impressive rationale for the development of co-teaching as a means for meeting a variety of needs for students in the classroom. Next, these researchers explicitly described five models for the implementation of co-teaching in the classroom, and discussed specific circumstances under which each model might be most effective. This having been set forth, Cook and Friend (1995) sought to effectively describe the roles of teachers, administrators, and district coordinators in establishing the support mechanisms that would foster effective co-teaching. This included discussion of important relational characteristics that might promote or hinder effective implementation of co-teaching in a school. Finally they described a comprehensive approach for planning and implementing a co-teaching program. The details of this seminal work are too extensive for complete discussion here. However, this work will be described and referenced, as appropriate, in the balance of this review.

**Murawski, W., & Swanson, H. (2001). A meta-analysis of co-teaching research. *Remedial & Special Education, 22(5), 258-267.***

Many of the methods and protocols established by Cook and Friend (1995) can be witnessed in several of the studies reviewed by Murawski and Swanson (2001) in their exhaustive meta-analysis of co-teaching research. For this project, they sought to quantitatively analyze the research conducted in the field of co-teaching, in the years between 1989 and 1999. Using the definition of co-teaching established by Cook and Friend (1995) as "two or more

professionals delivering substantive instruction to a diverse or blended group of students in a single physical space" (p. 2), the researchers sought to quantify the efficacy of co-teaching practices with respect to student outcomes. The primary measure to be examined was average effect size and this was to be interpreted in terms of "grade, gender, length of study, [and] severity or type of disability" (Murawski & Swanson, 2001, p.259). From an original identification of 89 articles, all but 37 were eliminated for lack of sufficient quantitative data. Further criteria were established, limiting the meta-analysis to studies for which: 1) effect size could be reliably calculated, 2) the intervention matched co-teaching definitions established by Cook and Friend (1995), and included a special education or resource teacher as well as a general education teacher working together, and 3) the co-teaching treatment extended beyond two weeks (Murawski & Swanson, 2001). The addition of these criteria reduced the number of studies, considered in the meta-analysis, to six.

Outcome measures for these studies included grades, math achievement, language arts (LA)/reading achievement, social outcomes, attitudinal outcomes, attendance, and discipline referrals (Murawski & Swanson, 2001). Mean effect sizes ranged from 0.0 for attitudinal outcomes to 1.59, for reading/LA achievement. Most notable in these results is the fact that reading and math achievement, as measured by valid and reliable tests, were the highest (1.59 and .45 respectively). It is also interesting to note that disaggregation of effect size data revealed that for students with learning disabilities, achievement gains for reading were significantly higher than those for math ( $r = .78$  and  $r = .47$ , respectively). Nevertheless moderate to high effect sizes for key academic achievement areas were evidenced in this analysis. In spite of these encouraging numbers, a word of caution was issued by the authors, due to the relatively small number of studies considered in their final analysis.

The rigor of criteria applied to the selection of studies to include in this meta-analysis set a high standard for the investigation of co-teaching as a valid instructional practice. This process eliminated 83 studies from inclusion in the study. Primary shortfalls, for many of those studies eliminated, included the omission of an elaborate description of specific co-teaching practices in the classroom, and a lack of sufficient student performance measurement data (Murawski & Swanson, 2001). This strict exclusion process adds credibility to the study. Such rigor also draws attention to the dichotomy that exists in the nature of investigating co-teaching effectively. Both the results presented, and recommendations for future research set forth by Murawski and Swanson (2001), appear to highlight two important foci for continued research. First, further quantitative study is needed to measure the impact co-teaching has on student outcomes. Secondly, extensive qualitative study will be required to examine and describe the complex relationships that are developed, between the general education teacher and the special education teacher, in the establishment of the co-teaching relationship. The following studies provide some insight into the current status for each of these research endeavors.

**Marston, D. (1996). A comparison of inclusion only, pull-out only, and combined service models for students with mild disabilities. *Journal of Special Education*, 30(2), 121-132.**

In order to meet the needs of students with learning disabilities and to meet the requirements of the Individuals with Disabilities Education Act (IDEA), students with such disabilities often receive instruction from both the general education teacher and the special education teacher. It seems likely that effective collaboration between these teachers would be

essential to the success of these students. Each teacher possesses specific expertise needed to effectively meet particular needs of these students.

There are three common models utilized to deliver such instruction (Marston, 1996). In one model the student receives part of his instruction in the general education classroom and part of his instruction in the special education classroom. This is often referred to as a pull-out model. In other cases the student may receive all of his instruction in the general education classroom. The regular and special education teachers share responsibility for planning and delivering appropriate instruction to meet the needs of all students in the class. This model is often referred to as full inclusion. Finally, a student may receive instruction from the special education teacher, both in the general education classroom and in the special education classroom, depending upon his specific needs. This is often referred to as a combined service model. In each case there is some level of collaboration between the general education and special education teachers.

The full inclusion model most closely represents co-teaching, since both teachers work together to plan and deliver instruction to a group of students in a single setting. While empirical evidence demonstrating the efficacy of co-teaching is minimal, there have been studies to examine the relative effectiveness of these three instructional models, and can therefore provide insight into the relative effectiveness of co-teaching for students with learning disabilities.

There are two studies, conducted roughly 14 years apart, that both sought to compare the effectiveness of these three models. In the first, Marston (1996) conducted action research in the Minneapolis School District. This research specifically addressed the relative effectiveness of the pullout, full inclusion, and combined service models being employed in elementary schools throughout the district. Curriculum based reading assessment records, from 240 students classified as having mild to moderate learning disabilities, were examined and compared as a



source of data for this study. Convenience samples drawn, consisted of students who were instructed, exclusively, through one of the three co-teaching models. The results of fall and spring administrations of these assessments were compared to measure gains in the number of words read correctly per minute, a standard measure of reading fluency. Both descriptive and inferential statistics were presented to interpret the data obtained. Mean differences in scores were reported to demonstrate differences in relative effectiveness of the three co-teaching models, as demonstrated by gains between pre-test and post test results. A one way analysis of variance (ANOVA) was performed to establish statistical similarity among the quasi-experimental pre-test groups. An analysis of co-variance (ANCOVA) was conducted to establish validity of the post test data sets. Consequently, Marston (1996) indicated that students taught via the combined service model made gains that were significantly greater than those taught by way of either the pull-out only or full inclusion models. There was not a statistically significant difference between the post test gains of these last two groups.

Marston (1996) provided little information relative to limitations of his study. The quasi-experimental design of this study has obvious limitations relative to the absence of a control group, the absence of random sampling, and most importantly, the absence of random distribution of subjects into treatment groups. However, appropriate inferential analysis appears to have been performed to minimize threats to the internal validity of the study. Additionally, very little information was provided with respect to the specific parameters of instruction in any of the treatment groups or attempts to ensure treatment fidelity across groups. Finally, the subject of inter-rater reliability, instrument validity, and reliability of the assessments was not addressed. It is worth noting that these kinds of flaws were key to the elimination of many studies from the meta-analysis conducted by Murawski and Swanson (2001).

**Ervin, V. (2010). *A comparison of co-teaching only, pull-out only, and combined service methods for students with disabilities*. (Doctoral dissertation, Capella University), Available from UMI. (3390951).**

In a second and similar study, Ervin (2010), as a basis for her doctoral dissertation, sought to examine the effectiveness of these same three co-teaching models utilizing a non-experimental design, augmented by a much more robust treatment of the data obtained. Each of the three co-teaching models was tested utilizing a two group, post test-only, randomized experiment method, whereby participants are randomly assigned to groups. Ervin (2010) described this as a “correlation quantitative study” (p.49).

The population studied consisted of all students in Georgia elementary or middle schools and samples were drawn from schools with similar demographic features, to create a treatment group of 120 elementary and middle school students classified as students with a disability (SWD). These students were randomly assigned to treatment groups according to the model of co-teaching under which they received instruction. Control groups for each comparison were drawn and randomly assigned from specifically defined single teacher classes. Data were collected by examining the reading and math score records from administrations of the Georgia Criterion Referenced Competency Test (CRCT). The author provided extensive discussion of the validity and reliability information available for these tests.

Data were collected for test results over a three year period (2007-09). Robust descriptive and inferential data analysis information was described in the narrative and displayed in multiple tables and histograms. Discussion included rationale for the utilization of statistical tools and results that included mean scores, minima/maxima, and standard deviations, as well as ANOVA

and ANCOVA treatment of the data. Score distributions were described and displayed in histograms. These distributions were analyzed in terms of variability, skew, and the prevalence of outliers. Furthermore, the author provided extensive analysis of trends, within each treatment group, that occurred over the course of the three year period. Extensive discussion of these results yielded findings that were in contrast to those previously obtained by Marston (1996).

Ervin (2010) established four hypotheses to test the relative performance of students in each treatment group. Analysis of the data obtained was used to test each against a null hypothesis. In the final analysis Ervin concluded that students who received instruction in the co-teaching groups performed significantly better than students who received instruction in either of the other two groups. This was found to be true for both reading and math assessments and was consistent over all three years examined by the researcher. Students who received instruction in the pull out groups generally performed more poorly than those in either the co-teaching or combined methods groups. Again this was consistent across all three years, with one exception. Scores from 2008 indicated that, in mathematics, students in the pull out groups had a higher mean score than those who received instruction in the combined methods groups. Finally, in each of the three years, the scores of students receiving instruction by way of each of the three instructional models were significantly different from one another, with regard to both reading and math performance. These findings, while also encouraging, are not completely consistent with those of Marston (1996), in a similar comparison of these same three teaching models.

Ervin (2010) acknowledged a number of limitations to this study, related to a lack of control for such variables as specific course content, individual characteristics of learners in these classes, individual teaching styles, and teaching methodology. She also conceded that the total sample of 120 students with disabilities was a limiting factor. Although this study was

conducted after the meta-analysis conducted by Murawski and Swanson (2001), one would have to conclude that it would not have been included in their analysis, due to the lack of controls for these variables and incomplete description of teaching methods for each of the teaching models examined. It may be that the inconsistency between Ervin's results and those of Marston (1996) lies in the appropriate consideration of the effects of these variables.

**Magiera, K., Lawrence-Brown, K., Bloomquist, K., Foster, C., Figueroa, A., Glatz, K., Heppeler, D., & Rodriguez, P. (2006). On the road to more collaborative teaching: One school's experience. *Teaching Exceptional Children Plus*, 2(5), 1-11.**

As is evident in the relatively few studies (6 out of 89 articles) selected for analysis by Murawski and Swanson (2001), accurate description of specific teaching methods and the interplay of teacher personalities are consistently problematic aspects of efforts to definitively establish the effectiveness of co-teaching models. At the same time, Cook and Friend (1995) postulated that flexibility and variability within these very domains are at the heart of effective co-teaching. Thus a conundrum is created, inasmuch as the very qualities of co-teaching on which its effectiveness is considered to rely, confound one's ability to accurately and reliably measure the degree of such efficacy. Consequently, the positive learning effects of co-teaching arrangements may need to be considered on a case by case basis, and understanding of what makes a particular case more effective than another will rely on an accurate description of the phenomena that will promote effective learning under such an arrangement. The exploration of such phenomena is the distinctive domain of qualitative research.

In their discussion of the implications of their own research, Murawski and Swanson (1996) suggest that the lack of empirical evidence for the effectiveness of the co-teaching relationship between general education and special education teachers is no reason to abandon the practice in schools. Rather, they predict that a deeper exploration of such relationships may hold the key to an understanding that will ultimately result in the establishment of protocols and practices that make co-teaching an effective tool for enhancing learning for all students in a common classroom environment. Consequently, it is important to more closely examine some of the specific cases where co-teaching has been seen to be effective, in order to elucidate the essence of successful co-teaching arrangements. Cook and Friend (1995) have postulated several of these conditions and protocols. At this point, it will be useful to examine two qualitative action research studies, where co-teaching has been implemented with varying degrees of success.

One such study was conducted at C.C. Ring Elementary School in Jamestown City N.Y. (Magiera, Lawrence-Brown, Bloomquist, Foster, Figueroa, Glatz, Heppeler & Rodriguez, 2006). C.C. Ring Elementary school is considered, within its own district and by the State of New York, to be an exemplary school that has effectively implemented co-teaching as an inclusive practice, to meet the instructional demands of a high needs and diverse student population. This study consisted of qualitative action research conducted by a research team composed from in house teachers and the principal, as well as college professors from two local universities. The school employs an inclusion model consisting of two general education teachers and one special education teacher at each grade level. Teams loop for two years. Specific looping strategies were not described by the authors.

The specific purpose of the study was stated as being “to describe what has been learned about inclusion and how it was accomplished at C.C. Ring Elementary School” (Magiera et al., 2006, p.3). Data were collected from two sources. First, semi-structured interviews, of approximately one hour, were conducted by the second author, following a specific interview protocol. Twenty members of the school staff were interviewed. Administrators and teachers, who were directly involved with the inclusion program, were selected for interviews. Secondly, a questionnaire was administered to the entire school faculty, but the main study focus centered around the interview results. Triangulation methods were used to select data responses according to the frequency of their occurrence. Ultimately, data analysis was conducted with regard to five categories; “preparing for co-teaching, co-planning, the co-teaching relationship, co-teaching models, and next steps for teachers” (Magiera et al., 2006, p.5).

With respect to preparation for co-teaching, voluntarism and initial training conducted by Marilyn Friend were viewed as being most important (Magiera et al., 2006). Effective co-planning, that included sufficient planning time, during the school day, was also seen as essential to success. The consensus was that about three common planning periods per week were sufficient and teachers described a variety of strategies for establishing this time. Effective communication was also seen as critical for successful co-planning. In regard to the co-teaching relationship effective communication was again seen as crucial. Three other important elements of this relationship emerged from the interview data; flexibility, in terms of scheduling and teaching style, mutual respect for one another, and efficient organization. Effective variation in the use of prescribed teaching models defined by Cook and Friend (1995) was described by many teachers during the interview. Most teachers reported employing the one teach-one assist model initially, and then experimenting with other models as their comfort level and confidence

increased (Magiera et al., 2006). In the category of next steps for teachers, the majority of interviewees expressed concern about the overloading of classes, with students with disabilities that averaged about 30%. Consideration of ways to carve more time out of the day and the need for ongoing professional development were also predominant themes in this category.

Interestingly, nearly all of these themes are addressed by Cook and Friend (1995) in their recommendation for the establishment of particular guidelines, when considering the implementation of co-teaching. Undoubtedly, such an endeavor requires careful planning and the consideration of many factors. The staff members of C.C. Ring Elementary School repeatedly referred to this implementation process as an ongoing “work in progress” (Magiera et al., 2006, p.10) and described a gradual change in culture to one that valued meeting the needs of every child in the school. The value of this study lies in the insights provided by the participants themselves. Emergent themes reflected the challenges and rewards of establishing co-teaching as a means for meeting the needs of all students in a mutually respectful manner that results in learning.

**Leatherman, J. (2009). Teachers' voices concerning collaborative teams within an inclusive elementary school. *Teaching Education*, 20(2), 189-202. Doi: 10.1080/10476210902718104**

When seeking to implement a successful co-teaching program, the degree to which appropriate attention is paid to what Cook and Friend (1995) have outlined as essential considerations in this process can have considerable impact on the success of the program. A qualitative study of co-teaching in another elementary school seems to bare out this point. In this study, co-teaching was implemented in what is referred to as a “school-wide cluster inclusion

program” (Leatherman, 2009, p.191). In this model students with disabilities were clustered, at each grade level, into one or two classrooms, depending on the number of these students. A general education teacher and either a special education teacher or special education assistant were assigned to each of these classrooms. This action research, qualitative study was conducted in an upper Midwest elementary school. Students with mild disabilities were reported to make up approximately 19% of the school population.

Participants were comprised from the general education teachers, special education teachers, and special education assistants who taught in the cluster classrooms, as well as the school principal. Spanning a period of two years, the study generated data through two 45 minute interviews conducted with each participant, six focus group sessions, and nineteen 30-45 minute classroom observations. Interviews and focus group sessions consisted of a variety of broad and open ended questions. Classroom observations were followed up by debriefing sessions between the teacher, or assistant, and the observer. Additional field notes were recorded during each of these sessions.

Leatherman (2009) then identified three common themes from this data and triangulation techniques were used to verify continuity within each of these themes. The first theme centered on scheduling and time management issues. An assortment of teacher comments from all three data sources was presented to illustrate common concerns and strategies adopted by the teachers to deal with these issues. The second theme provided insight into both the co-teaching models utilized by teachers, in the various classrooms, and the characteristics of personality and teaching styles that appeared to influence the relative success of the teaching strategies, in terms of teacher perspectives. The third theme drew from teacher comments and discussions relative to the perceived advantages of having both a general education teacher and a special education



teacher working together to meet the need of all students in a classroom. In his analysis of the data, Leatherman (2009) pointed to an evolution of the co-teaching program within the school. Adaptations to the schedule and planning time, reassignment of teachers to create more appropriate matches, and growing appreciation of the advantages of having diverse expertise in the classroom were all identified as being successful adaptations to the program during the second year of the study.

While Leatherman (2009) made frequent reference to the general success of the program, careful examination of the teacher comments appeared to indicate mixed feelings on the part of teachers and relative levels of success seemed to vary widely. Comments made by teachers in the study presented by Magiera et al. (2006) appear to reflect a culture in which the co-teaching model is generally successful and that there is growing enthusiasm, for the program, as specific issues are systematically addressed and resolved. On the other hand, comments presented from the Leatherman (2009) study appear to reflect an atmosphere of coping, with little such growing enthusiasm. Furthermore, Leatherman acknowledged no specific limitations to his study, yet it is clear that the level of planning and consideration of commonly prescribed precautions and considerations does not compare favorably with the preparation and attention to detail evidenced in the Magiera study (2006). While Leatherman (2009) referenced the work of Cook and Friend (1995) and the importance of certain critical considerations such as careful planning, administrative support, clear communication, mutual respect, and shared responsibility, these elements do not appear to be evident in the implementation of his program. Nor are they specifically addressed in his analysis of data.

### **Research Implications**

The implications for this research fall into two broad categories that appear to be inextricably entwined, yet never quite joined. First it is clear that the quantitative evidence for the effectiveness of co-teaching in meeting the diverse needs of students in our classrooms, particularly those with learning disabilities, leaves the question largely unsettled. Secondly, although the efforts of Cook and Friend (1995) have laid important groundwork for understanding the nature of the essential parameters of co-teaching, the complexity of these factors appears to frequently confound its appropriate implementation in some schools (Friend & Cook, 2010). The key to unlocking the potential of co-teaching seems to lie in the knowledgeable and thoughtfully planned implementation of its practice. In order to fully realize and appropriately measure the effectiveness of co-teaching practices, methods for reliably implementing these practices must be effectively described and documented. The limited examination of research presented in this paper appears to indicate that the current state of knowledge about co-teaching is still caught in the limbo created by these two, mutually reliant tasks. In order to move forward, and it is liable to be a slow process, each effort to implement co-teaching must be carefully planned and documented, and then accompanied by an equally well planned and documented effort to measure the effectiveness of that implementation.

Failure to pair these two tasks appears to be a major flaw in the way research has been conducted thus far. This problem is highlighted by Murawski and Swanson (2001), as well as Friend and Cook (2010). Most of the previous research has addressed co-teaching from one of two perspectives. Qualitative research has explored the conditions and protocols that appear to facilitate favorable implementation of the practice, without applying appropriate quantitative measures to the student outcomes. At the same time, quantitative research seems to measure

learning outcomes, without sufficient consideration of the parameters of practice that may impact the measured results.

Future research will need to find ways to marry these two approaches in a manner that pairs particular practices and conditions that form workable co-teaching relationships with appropriate quantitative measurements that can provide evidence for the efficacy of practices borne out by those relationships. In other words each attempt to implement co-teaching designs should be meticulously planned and documented, with particular attention to the protocols and conditions under which the research is conducted. At the same time, hypotheses and predicted outcomes should be assessed and measured, using valid and reliable instruments. Interpretation of resulting data will then need to be analyzed in the light of the variables created by the research conditions and protocols established in the implementation process. Even at the surface, it seems that this will be an extremely involved and complex process. There is little wonder that this approach has not been adopted, effectively, thus far. The task is enormous and complex and will likely involve tremendous effort and collaboration. Each of the studies reviewed in this paper involved or described some degree of collaboration between university and school system personnel and addressed the importance of an action research approach to methodology. It is likely that such an approach should, in fact, be at the core of any endeavor such as that described above.

### **Leadership Implications**

Strong and effective leadership will very likely play a crucial role in pushing this kind of research forward. Cook and Friend (1995, 2010) pay appropriate homage to the role of leadership in establishing effective co-teaching relationships in schools. School leaders can be instrumental in helping to: provide necessary resources; develop schedule schemes that allow for

sufficient collaborative planning and preparation of lessons; and engage teachers in conversations that promote reflective evaluation. Most importantly, they are crucial in the establishment of a school culture that acknowledges the importance of such practices in meeting the needs of all students in an effective and respectful manner.

Furthermore, it will be up to school and university leaders to create and sustain collaborative relationships that will drive the research process forward. Very often, there is an apparent disconnect between the universities and colleges that prepare teachers for the profession, and the schools in which that profession resides. This gap needs to be closed. The preparation of teachers and the provision of real life experience in schools need to be a far more intimate process than currently exists, as a general rule. Additionally, the link between important research and effective instruction needs to be much more secure. I have always envisioned the need for schools that operate more like teaching hospitals, where pre-service teachers spend a significant amount of time, working side by side with teachers in the schools, gaining experience, and while at the same time, bringing new and vital knowledge to the practice of veteran teachers. Six week student teacher stints, at the end of pre-service training, are not nearly enough to provide novices with the experience they will need when they land in a classroom of their own.

Ultimately, it is strong leadership that will drive and sustain the kinds of school cultures and practices that foster the kind of research needed to establish both the methods and the data necessary to demonstrate the efficacy of co-teaching between general education and special education teachers. Effectively and respectfully addressing the needs of all students in our schools' classrooms needs to be both the primary purpose and paramount concern of our schools. Leaders of the future will need to be willing to cast aside old notions and be willing to adopt new

approaches to solving these problems. The future of our schools is worth both the time and the effort required.

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