Collaboration in Special Education: Its History, Evolution, and Critical Factors Necessary for Successful Implementation

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Collaboration in education is seen as a legal mandate, best practice in teacher practice, and necessary for the inclusion of children with special needs. Over the years, there have been a number of evolutionary incarnations of the collaborative model, each possessing various ingredients identified as important, if not essential, components of a successful professional relationship. This article provides the reader with a review of the literature regarding collaboration in education, particularly in reference to the service of students with special needs. In addition to identifying those aspects of collaboration that have been deemed critical to its success, this article also discusses the characteristics found to challenge effective collaboration.

Keywords: collaboration, interdisciplinary, multidisciplinary, transdisciplinary approach

Introduction

The Education of All Handicapped Children Act of 1975 (P.L. 94-142), and then its most recent incarnation as the IDEIA (Individuals with Disabilities Improvement Act) in 2004, mandate that students with disabilities receive their special education services in the least restrictive environment (Heward, 2013). The LRE (Least Restrictive Environment) principle stipulates that students with special needs will be educated in "settings as close to the regular educational classroom as possible in which an appropriate program can be provided and the child can make satisfactory educational progress" (Heward, 2013, p. 71). That definition notwithstanding implementation of the LRE principle has for many come to mean inclusion, or the placement and education of every student with disabilities in the general education classroom setting (Friend, 2011). Although not all students with special needs are placed in inclusive settings, general educators are nevertheless now expected to provide instruction to students with a much broader range of learning, behavioral, and developmental differences (Heward, 2013). This diversification of the student body, therefore, requires a host of ingredients to be introduced into the classroom including culturally responsive teaching (Cartledge, 2006), the application of universal design for learning, differentiated instruction, and positive behavioral supports (Friend, 2011). For this, schools rely on support services, such as special education teachers and other professionals of varied backgrounds (Heward, 2013) to work closely with one another, making collaboration a "crucial dimension to the planning, delivery, and evaluation of special education and related services… and a means to achieving inclusion" (Friend, 2011, pp. 27-28).

This article reviews the research related to a number of aspects of collaboration including the legislative mandates for collaboration in special education, the varied definitions of collaboration, and the commonplace

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models of collaboration that exist in the educational community, and most important are the elements of collaboration as well as the obstacles to its successful implementation and maintenance. In particular, a good deal of the literature on the subject engaged in research designed to gather data from a diverse group of pre-service professionals as well as individuals already employed in the field including general educators, special educators, speech-language pathologists, and others. With that, the research notes that fostering the collaborative process among special educators, general educators, and related service personnel requires recognizing and understanding several key influences to the process including ownership of a positive attitude (Wiggins & Damore, 2009), interpersonal skill capability (Welch & Tulbert, 2000), as well as perceived professional competency and confidence (Damore & Murray, 2009).

Professional collaboration has been viewed as a beneficial tool for helping teachers and other professionals serve students with disabilities (Brownell, Adams, Sindelar, Waldron, & Vanhover, 2006; Ritzman, Sanger, & Coufal, 2006) and has been deemed as the best practice in special education (Cross, Traub, Hutter-Pishgahi, & Shelton, 2004; Barnes & Turner, 2001; Kurjan, 2000; Pena & Quinn, 2003). Gable, Mosert, and Tonelson (2004) recognized the growing emphasis on collaboration as an important strategy for educators asked to take on a wider range of responsibilities in today's schools. Ritzman et al. (2006) noted the support collaboration offers to teachers when working with students with significant special needs. Whether the children were receiving services through early intervention (Bruder, 1998; Bruder & Dunst, 2005), were in inclusive settings (Conderman & Johnson-Rodriguez, 2009; Whitten & Zebehazy, 2003; Carpenter, King-Sears, & Keys, 1998), had mild to severe disabilities (O'Toole & Kirpatrick, 2007) or had multiple disabilities (Campbell, 1987; Downing & Baily, 1990), the idea of having professionals from various disciplines working together and collaborating was tied to the long term success of students with special needs (Banotai, 2006; as cited in Bauer, Iyer, Boon, & Fore, 2012). Conversely, the lack of collaboration by professionals had been shown to negatively impact on the extent and quality of services provided to students with special needs (Hunt, Soto, Maier, Muller, & Goetz, 2002) as well as the typical child (Hunt, Soto, Maier, Muller, & Goetz, 2001; Wallace, Anderson, & Bartolomay, 2009; Murawski & Hughes, 2009).

This review begins with a discussion of the legislative mandates for collaboration in special education. The second section of the review provides an in-depth overview of the definitions of collaboration (including its evolving trends and variations). The final section provides a review of the characteristics, ingredients, and elements of collaboration as well as the obstacles that it faces.

Legislative Mandates for Collaboration

The first U.S. federal legislative mandate for students with disabilities began in 1975 with the passage of P.L. 94-142, the Education for All Handicapped Children Act (Weintraub & Kovshi, 2004). For the first time, American schools were required to provide a free and appropriate public education to children with special needs (Driesbach, Ballard, & Russo, 2001). In addition to the legal mandates of P.L. 94-142, Cootes (2007) noted best practice expectations underscores the need for collaboration while Wientraub and Kovshi (2004) noted that P.L. 94-142 required special educators and related service providers work together in the implementation of each American student's Individualized Education Plan.

This legal mandate was extended to preschool age children in the United States with reauthorization of IDEA in 1990. Finally, the reauthorization of IDEA in 1986, in particular Part H, extended special education services and the "theme of collaboration" (Welch, 1998b, p. 120) to infants and toddlers ages birth to three

years old (Bruder & Dunst, 2005). While IDEIA 2004, the most recent incarnation of the law, does not define collaboration, it nevertheless asks state governments and their departments of education to "promote improved collaboration between special education and general education teachers" (IDEIA, 2004, p. 132) and requires a measure of teamwork in the initial evaluation of children as well as in the personnel preparation of pre-service teachers (IDEIA, 2004).

It must also be noted that several professional organizations incorporated collaborative skills and dispositions (Welch, 1998a) into their standards and expectations for participating members. The CEC (Council for Exceptional Children), an international professional organization dedicated to the betterment of those with special needs, states in Special Education Content Standard #10 that "special educators routinely and effectively collaborate with families, other educators, related service providers, and personnel from community agencies in culturally responsive ways" (Friend, 2007, p. 515). In addition, the INTASC (Interstate New Teacher Assessment Standards Consortium) reflected the need for new teachers to possess skills that contributed to collaboration (Conderman & Johnson-Rodriguez, 2009). Nevertheless, Welch (1998b) noted that "professionals from related disciplines may not fully grasp the collaborative nature of special educators' role within the context of the law" (p. 119). This may have been fostered over the years by an unintended by-product of P.L. 94-142. While P.L. 94-142 "legislated" collaboration, this ground breaking piece of legislation actually contributed to the creation of a separate culture and separate roles within education. Students were now entitled to "special education", and in many instances, this individualized service was provided in a separate setting from the student's typical peers, thereby fostering the development of a unique culture (Welch, 1998b) that came to reinforce the historical process that emphasized separate and fragmented service provision in conjunction with parallel rather than collaborative interaction (Harn, Bradshaw, & Ogletree, 1999; Tourse, Mooney, Kline, & Davoren 2005). The status quo was not addressed until the school reform initiatives of the 1980's resulted in the REI (Regular Education Initiative). The impetus of this initiative was a position paper written in 1986 by Madeline Will, former director of the United States Office of Special Education and Rehabilitative Services. In that paper, Will questioned the placement of students with disabilities in separate settings. The position paper called for special educators and regular education staff to collaborate in order to provide services to students with disabilities in the general education setting (Dettmer, Thurston, Knackendofelle, & Dyck, 2009).

Understanding and Defining Collaboration

Collaboration is a term that has been misunderstood and gets subsumed in the rhetoric of educational improvement (Hantzidiamantis, 2011). Any attempt to comprehend collaboration and its essential components requires an understanding of its varied definitions, concepts, and terminology. This requires careful attention, because meanings to words can vary from one user to the next and from one context to the next (Dettmer, Thurston, Knackendofelle, & Dyck, 2005). Recognizing this, the definitions of collaboration identified in the literature have been categorized below according to their primary ingredients or variables.

Interdependence, Shared Perspectives, and Goals

The word collaboration has its origin in the term "colabre or co-labor, which means working together" (Welch, 1998b, p. 121). Snell and Janney (2005) elaborated by stating "working together means that positive interdependence exists among team members who agree to pool and partition their resources and rewards and

to operate from a foundation of shared values" (p. 6). Wright (2001, as cited in O'Toole & Kirkpatrick, 2007), saw collaboration as "intensive joint working practice" (p. 343) while Carrea, Jones, Thomas, and Morsink (2005) defined collaboration as "a mutual effort to plan, implement, and evaluate the educational program for a given student" (p. 5).

Bruder (1998) spoke of collaboration as individuals with specialization in the therapeutic, medical, and social service and educational fields coming together when a sense of functionality is bestowed upon them. Bruder and Dunst (2005) spoke of "teaming" (p. 28) as a descriptor of professionals collaborating across discipline specific boundaries for the purposes of assessment and intervention. Snell and Janney (2000) saw collaboration as individuals with diverse expertise working together to achieve mutually agreed upon objectives. Ritzman et al. (2006) noted collaboration as "characterized by parity, reciprocity, shared participation, decision making, and resources" (p. 223). Finally, Friend and Cook (2003) defined interpersonal collaboration as "a style for direct interaction between at least two coequal partners voluntarily engaged in shared decision making as they work toward a common goal" (p. 5).

Interpersonal Characteristics

Wade, Welch, and Jensen (1994), Welch (1998a), and Welch (1998b) provided their own definitions of collaboration, reflecting references to the "values, roles, and skills" (Rainforth & England, 1997, p. 86) required by participants in the process to be successful. Wade et al. (1994) added to the description the concepts of respect, trust, and communication.

Contextual Setting and Constructs

Wade et al. (1994), along with Welch and Tulbert (2000), spoke of a collaborative ethic in which an individual embodies the social, cultural, and structural constructs and dimensions of collaboration as exemplified by shared values and actions that support and encourage the collaborative process, while also respecting one another's discipline specific skills and role in the process. Through the use of a survey issued to educators in 12 schools in Utah, Wade et al. (1994) looked to identify the concerns, needs, beliefs, and attitudes general educators and specialists had regarding collaboration designed to promote the inclusion of children with special needs into general education classes. Other purposes included identifying if teacher and school characteristics impacted on the interest an individual had toward collaborative engagements. The findings of the research indicate that in general, teachers (general educators and special education teachers) will be more inclined to engage in collaboration, if they are interested in the intended goals and if those goals are in keeping with their own role, practice, and philosophy of teaching. The researchers also determined that individuals will collaborate if they are provided administrative support and believe that their autonomy will be maintained. In addition, the findings indicate that smaller schools, or those with less than 27 faculty members, are more inclined to engage in collaborative efforts than teachers that come from larger schools. It was also determined that general education teachers with a long tenure in one school (more than 10 years) are not as interested in collaborating with other staff. Finally, the data indicate that collaborators are generally more confident in their own skills or their abilities to acquire those skills that are required for collaboration. Overall, the researchers found that as a group, special educators indicated more than one of interest in collaboration in comparison to general education teachers. Without having any direct evidence, they presumed that finding may result from the "ethos of being a special education teacher… to take the role of an advocate for… children with disabilities, which involves consulting or collaborating with others with other professionals" (Wade et al., 1994, p. 200).

Welch and Tulbert (2000) conducted an investigation designed to socially validate the characterization and operational definitions of collaboration as described in the professional literature and quantitatively identify salient features of collaboration. The study was conducted in two phases. Phase one employed an Adelphi methodology and asked practitioners to define and describe the collaborative process. Open-ended surveys were sent to general education teachers, special education teachers, administrators, and related service providers. A follow-up factor analysis factor analysis revealed several factors as salient components of collaboration including the need for a cultural ethic within the organization.

Welch, Sheridan, Wilson, Colton, and Mayhew (1996) were clear to infuse into the definition the influence of cultural and systemic variables, while Ritzman et al. (2006) emphasized that the promotion of a collaborative ethic requires team participation in all aspects of program planning. Wade et al. (1994) added to the description of the contextual aspect of collaboration by noting the need for joint commitment of resources and shared ownership within the framework of an ecological perspective.

The fact that collaboration has so many definitions is only one of the variables that need to be accounted for when attempting to understand its diversity and complexity. In addition to the nuances that emerge and the potential for cognitive dissonance when attempting to arrive at a coalesced meaning, it is also necessary to explain and account for the evolution of the basic tenets of collaboration that have developed over the years.

Evolving Models of Collaboration

As aptly described by Lawson, collaboration involves new relations between two or more "entities" (Lawson, 2004, p. 2). The way in which individuals collaborate can be viewed through a lens which focuses on how individuals relate and interact with one another as well as how they provide intervention for those they serve (Lawson, 2004). In education, the manner in which individuals collaboratively relate to one another are commonly called models of collaboration and consist of the multidisciplinary, interdisciplinary, and transdisciplinary approaches (Friend, 2010). Each approach has different sets of underlying assumptions that guide teacher and team actions. All three approaches incorporate the participation of service providers, but that is essentially where the similarity ends. According to Carpenter, King-Sears, and Keyet (1998), how team members interact with each other and within their world make a difference in terms of the approach employed. Differences found between the above three approaches were assessed by analyzing the organizational structure and purposeful function of the team. Structure alludes to the team's organization, membership, and corresponding role(s). Function refers to the intent, actions, and purpose of the interaction. Further analysis concluded with the understanding that functions exist within a continuum that ranges from the individualized and segregated application of skills to the integrated implementation of knowledge (Carpenter et al., 1998).

Multidisciplinary Approach

The multidisciplinary teaming approach is characterized by the application of services by a variety of different disciplines acting independently (Carpenter et al., 1998; Stepans, Thompson, & Buchanan, 2002). Even with the presence of multiple disciplines, the level of active involvement by each discipline was found to be limited within the framework of the multidisciplinary approach. The overall approach of the multidisciplinary model presumes that only those trained in the specific field are capable of assessing and serving the child in need of their expertises (Kritikos, LeDosquent, & Melton, 2012). An example would be an occupational therapist trained in understanding fine motor skills being the only discipline capable of working

with the child on handwriting and shoelace tying. This perspective then results in much of the assessment and intervention process occurring in isolation of the other service disciplines and providers (Kritikos et al., 2012).

Interdisciplinary Approach

The interdisciplinary approach, on the other hand, attempts to create an atmosphere of collaboration, primarily through enhanced coordination and cooperative engagements amongst disciplines during assessment and activity planning (Carpenter et al., 1998). The interdisciplinary approach may still result in the disciplines assessing students independently from one another, professionals using an interdisciplinary approach can engage one another in a variety of ways including conferring with one another during the assessment, program development, and intervention processes (Kritikos et al., 2012). While this approach engenders an enhanced exchange of information, boundaries were noted to exist between team members that constrict the flow of information, dialogue, and effective implementation (Carpenter et al., 1998; Stepans et al., 2002).

Transdisciplinary Approach

The transdisciplinary approach, or TD approach, has been promoted as an example of outstanding collaborative practice, ever since its development in the 1960s (York, Rainforth, & Giangreco, 1990). Initially developed to aid in the coordination of therapeutic and medical services for infants (Campbell, 1987), it was further refined by the United Cerebral Palsy National Collaborative Infant Project of 1976 (Stepans, Thompson, & Buchanan, 2002) in order to provide a "comprehensive and coordinated assessment system" (Stepans et al., 2002, p. 239) for young children with severe and multiple disabilities. The goal was the establishment of a more relevant and appropriate Individualized Education Program for each student.

In comparison to the multi- and inter- disciplinary approaches, the TD approach has been promoted to be more effective in many ways, most notably in the creation of an integrated team structure and service delivery, deliberate and regular cross discipline communications, knowledge exchange across disciplines and its strong student focus (Downing & Baily, 1990; Carpenter et al., 1998; Stepans et al., 2002; York et al., 1990). This integration of services within the team structure has been identified as a key component of the TD approach and is in contrast to the traditional model characterized by isolating, discipline specific therapeutic intervention (Downing & Baily, 1990). Within an integrated team environment, team members are to engage in a collaborative and collective power structure that emphasizes parental participation and cross discipline intervention methodologies (Carpenter et al., 1998; Downing & Baily, 1990; Stepans et al., 2002). In the TD model, practitioners "share responsibility for student learning by expanding and exchanging knowledge within and between team members" (Prelock, Miller, & Reed, 1995). An example is when a speech-language pathologist acquires an understanding of the classroom curriculum while the classroom teacher learns to facilitate communication from the students (Prelock et al., 1995).

In many respects, the TD approach and its integration of services employs practices that have been characterized as a mixing of services with the assignment of one therapist as the primary or lead service professional (York et al., 1990; Downing & Baily, 1990). This approach has also been represented as a consultative model where the various team members funnel information and strategies needed by the lead therapist for program intervention (Campbell, 1987). In both cases, there is a collective responsibility for the creation and implementation of the educational and therapeutic plan. No individual is solely responsible for the progress and development in any particular skill area. Intervention is a shared event requiring an expansion or exchange of one's role, eventually leading to role release (Campbell, 1987; Carpenter et al., 1998; Prelock et al.,

1995; Stepans et al., 2002). Role release is the process where professionals engage in a variety of different therapeutic and instructional activities across discipline boundaries, thereby giving up or releasing their role to another member of the team. For successful implementation, this process necessitated the transfer of discipline specific knowledge and skills. "To assure the collective store of knowledge, skill, and perspectives is tapped, every team member, including staff, students, and family members, assumes the role of teacher, learner, and implementer" (Rainforth & England, 1997, p. 91). For this to occur, teams needed to establish parity, mutual trust, and respect amongst all team members as well as open communication between all parties (Downing & Baily, 1990; Prelock et al., 1995).

Co-teaching

Another version of collaboration is the co-teaching, cooperative teaching, or a collaborative teaching approach. These models can be considered one in the same and are more recent development in the evolution of the collaborative model (Rainforth & England, 1997; Welch, 1998b). This collaborative approach to teaching results in the teaming of general and special educators in an inclusionary classroom setting but can also apply to teaming profiles which include related service professionals, such as speech/language pathologists, occupational therapists, and counselors (Rainforth & England, 1997).

Rainforth and England (1997) and Welch (1998b) noted that while there are multiple co-teaching models, the approach typically requires joint academic intervention by at least two professionals in a classroom setting populated, in natural proportions, with students of typical ability, as well as students with special needs. Many of the characteristics were identified as key ingredients of the other collaborative models, especially the TD approach, have also been identified as necessary for successful implementation of a co-teaching model. Included in this model is open communication, parity, role release, and consistent collaborative intervention (Sileo, 2011). Friend (2011) provided an example of a more highly collaborative type of co-teaching, specifically the team teaching model where two teachers "fluidly share the instructional responsibilities of the entire student group" (p. 113), and share the instructional work load by teaching each student but not just the student with or without special needs.

As can be seen, when one talks about collaboration, one needs to be conscious of the multiple variations that exist and the variables they create. In addition, one must recognize that collaboration is a process that is separated from the activities in which it is used (Snell & Janney, 2005). Collaboration is not just a set of actions but "a way of being" (Pugach & Johnson, 2002). The collaborative process "reframes" (Dettmer et al., 2005, p. 14) how teachers and therapists engage each other in educational contexts. Finally, the multitude of personnel and other stakeholders involved in the process must be recognized in an analysis of the essential characteristics required for the successful implementation of collaboration (Friend & Cook, 2003).

Factors, Ingredients, and Elements Impacting Collaboration

The elements, competencies, and obstacles associated with successful collaboration arise from a foundation of understanding schools, demonstrating the ability to process sometimes subtle information, and delivering it all with resources in a helpful context (Dettmer et al., 2005). The work involved in collaboration has varied but interrelated factors and ingredients that have been identified as important in the development of collaborative skills within a person (Snell & Janney, 2005). These characteristics are:

(1) Perspectives, attitudes, and preparation;

(2) Professional efficacy;

(3) Interpersonal skill capacity;

(4) Contextual setting and organizational capacity.

The last three characteristics are particularly important once teachers enter the schools with the literature noting these as essential to the development of successful collaborative relationships (Brownell et al., 2006; Butera, 2005; Welch & Tulbert, 2000). But even before the individual begins their first day as a teacher, they enter the school building with, as Hantzidimantis (2011) noted, notions regarding their role as an educator that impacts on how they enter into collaborative relationships with other teachers and the diverse group of professionals they will most likely come into contact with. These notions, as well as specifics regarding the other elements and ingredients that impact on the collaborative process are discussed in more detail below.

Perspectives, Attitudes, and Preparation

Individuals enter into the "teaching profession with a strong and enduring set of beliefs and attitudes about teaching and learning… that… greatly influence how they approach any cooperative teaching effort" (Hantzidimantis, 2011, p. 31). In contrast, while the modern day pre-service teacher has probably experienced the use of social media as a vehicle for engaging and working with others, it is unlikely that they have used their interactional skills to work collaboratively on behalf of a student with special needs (Dettmer et al., 2005), reinforcing the belief that many of them do not feel prepared to work with others in a professional capacity, while also exhibiting the limited training and experience they have in collaborative service provision (Conderman & Johnson-Rodriguez, 2009).

As Dettmer et al. (2005) noted, the recognition that even as a new teacher one is expected to actively engage other professionals and disciplines in constructive dialogue without having the professional self-assurance that usually comes with experience often results in the novice teacher deferring to the attitudes and perspectives of the more seasoned professional. That though can come with its own perils for as Dettmer et al. (2005) suggested, good collaboration involves participants taking individual responsibility for their actions. Welch et al. (1996) provided us with an overview of the challenges confronted by a number of different professionals including general and special educators in a study that recognized the relative isolated preparation of special education and related service professionals. As such, the authors worked to develop a professional preparation program called the STEP (Site-Based Transdisciplinary Educational Partnerships Project) which was collaborative action research with an ecological focus designed to prepare teachers in both general education and special education to learn and function successfully in a collaborative environment within school settings that serve children at risk. School psychologist and school administrators were also included in the research process. The researchers categorized the project's activities in "three domains: inquiry, reflection, and outcomes" (Welch et al., 1996, p. 226).

Welch et al.'s (1996) study enrolled 72 university students from several education and related professional preparation programs and placed them in area school districts. They were assigned to work with each other in transdisciplinary cohorts to address the needs of students at risk. The intent was to have the university students engage in collaborative interactions and learn about each other's discipline through direct interaction. The STEP project's transdisciplinary field experiences included action research projects, interviews, observations, and various other activities including, for example, the preparation and implementation of a team-teaching activity and a social skills curriculum.

Welch et al.'s (1996) study on STEP was viewed as a success in educating the participants in the benefits

of a transdisciplinary approach with several outcomes showing the effectiveness of the STEP's endeavors. Specifically, nine of the 10 action research projects were deemed successful with at least four of the projects adopted by the participating schools. The focus group discussions produced additional data showing positive attitudinal perspectives from the university participants towards the adoption of a transdisciplinary perspective as well as enhanced recognition of the importance of collaboration. The authors did not identify any negative results from the STEP, but noted the challenges that emerged as a result of its implementation process. Specifically, the authors encountered resistance from administrators in area schools who thought that their school and staff would be strained as a result of the presence of the university students and the researchers.

Examining the perspectives of newly appointed special education teachers, Conderman and Stephens (2000) reported that novice special educators found collaborative relationship development more challenging than many other aspects of teaching. The reasons for this were varied including the belief that many of these novice teachers lacked training in collaboration at the pre-service level. This perspective was reiterated by Dettmer, Thurston, Knackendoffel, and Dyck (2005). Carlson, Brauen, Klein, Schroll, and Willig (2002) reported that just more than half of all teachers reported having coursework in collaboration while less than 30% of all general education teachers had coursework in the subject.

The seemingly lack of collaborative skill development by pre-service teachers lead a number of researchers to investigate the matter. The professional preparation and development of future collaborators was recognized by Conderman and Johnson-Rodriguez (2009), Bruder and Dunst (2005), Robinson and Sadao (2005), and Welch et al. (1996) as important in understanding the evolution of collaboration. These authors provided studies pertinent to the preparation of future professionals. Conderman and Johnson-Rodgriguez (2009) conducted a pilot study that surveyed the perceptions of beginning general education teachers and special educators regarding the "importance of skills associated with their collaborative roles under IDEIA" (p. 236). The authors surveyed 46 teachers from the ranks of general education and special education at both the elementary and secondary levels using a four-point Likert scale to indicate the respondents "perception of the importance of 20 skills related to inclusion and collaboration" (Conderman & Johnson-Rodriguez, 2009, p. 236). The authors also engaged the participants in a subsequent research component that prompted responses to five open-ended questions. The results of the survey included responses from 28 special educators from the elementary and secondary level, representing the largest subgroup of the surveyed respondents. Findings from the Likert portion of the survey included acknowledgement that both groups of special educators felt least prepared when it came to working with other staff including professional and paraprofessional staff.

In addition to the Likert scale survey, Conderman and Johnson-Rodriguez (2009) questioned their respondents using open-ended survey questions. The second question asked survey participants to identify what they felt were the most challenging aspects of their current positions. The responses to this question were grouped into a theme that resulted in 11 comments expressing concern with the "interpersonal issues and the challenges of working with others because of differences in philosophy and style" (p. 239). A number of respondents also commented on the need for training in collaboration as well as the need for new teachers to "reflect on their personal qualities" (p. 240). Conderman and Johnson-Rodriguez (2009) went on to discuss the more global issues presented in the data, including the difficulty novice teachers had when it came to collaborative engagements with their peers. They also stated that new teachers were more successful, if properly supported in the context of a collaborative culture. They concluded their discussion recommending additional inquiry into the motivations of personnel education, when it comes to their engagement in

collaborative relationships.

In 2005, Robinson and Sado detailed the PFL (person-focused learning) teaching approach to prepare future professionals in augmentative and alternative communication in the dynamics of teamwork and collaborative relationships with families. The authors saw the critical need for special educators, speech language pathologists, psychologists, and other professionals to work collaboratively in the implementation of augmentative and alternative communication services in educational settings. Including 71 undergraduates and graduate students from three universities in the western United States, as well as seven individuals with significant communication needs and their families, the authors collected data through the use of interviews, questionnaires, self-reflective reporting, and the review of reports and assessments written by the students with commentary by the service recipients and/or their families. As a result, they created the PFL to promote collaborative, applied interactions with family members and those with disabilities. PFL incorporated teaching and learning methods, such as critical thinking and problem-solving skills in order to work more effectively with individuals with disabilities and their families. It also provided pre-service training with emphasis on the need for sensitivity to family perspectives as the future professionals also learn about and practice effective family collaboration. PFL was incorporated into three courses designed for the mixed group of future professionals at three different universities. With the incorporation of reflective practice, the authors noted the enhanced recognition by the students in several areas, including positive attitudinal change towards collaboration as well as enhanced sensitivity to families and individuals with disabilities.

In comparison to the above studies, Bruder and Dunst (2005) noted the lack of adequate training of professionals to work collaboratively with each other. Their study was based on a national survey of pre-professional training of early childhood educators, occupational therapists, physical therapists as well as speech/language pathologists in various practices necessary for effective professional development and service provision, including teaming practices. In their study, Bruder and Dunst (2005) distributed a comprehensive survey of 449 undergraduate and graduate programs (237 and 212 respectfully) involved in the training of future early intervention professionals. Their results found that none of the pre-professional training programs felt that they did sufficient work in preparing their students to enter the field and have the skills necessary to collaborate effectively. On the other hand, the survey did show variation in the success of these programs to train particular disciplines. Specifically, programs in early childhood special education and multidisciplinary training showed moderate to above moderate training in teaming practices while all of the related service disciplines (OT (Occupational Therapy), PT (Physical Therapy), and SLP (Speech-Language Pathology)) provided below moderate training. Team training in physical therapy was even more dearth than that of the other disciplines, showing almost little or no training in teaming.

Rainforth and England (1997) noted that even before collaboration can be successfully implemented, the process required prospective team members to exchange knowledge and insight into each other's professional storehouse of expertise. One must note though that teachers and other professionals are expected to enter the educational venue with all they need to know in order to be good practitioners (Tren & Boles, 2011) but in fact, "most educators have not received training to work collaboratively, and therefore, are learning to work as a team at the same time they must operate as a team" (Snell & Janney, 2005, p. 25). These conflicting expectations create that much more of a challenge for teachers and therapists. In addition, special education staff are likely to engage in a collaborative setting that emphasizes communication and cross discipline training and intervention strategies (Carpenter, King-Sears, & Keys, 1998; Downing & Baily, 1990; Stepans et al.,

2002).

Professional Efficacy

Ritzman et al. (2006) stated that a key principle to effective collaboration was having "professionals within a school combine their expertise to create a multitude of options for students with special needs" (p. 221). Theunderstanding added to the perspectives of a number of researchers (Hantizidimantis, 2011; Damore & Murray, 2009; Brownell et al., 2006; Butera, 2005; Harn, Bradshaw, & Ogletree, 1999; Kurjan, 2000; Prelock et al., 1995) who identified the role of perceived professional competency and confidence in the development of collaborative relationships.

Butera (2005) identified the role of professional competence and interpersonal skill capability in a case study involving organizational providers (special educators, social workers, administrators, and nurses) engaged in service to a young child with special needs in rural Appalachia named Cassie. The case study sought to understand the contextual setting of Cassie and the role of collaborative service delivery. The author emphasized the transactional nature of relationships and its key to understanding how multidisciplinary service systems work by showing how Cassie influenced the relationships that participated in the collaborative environment and the interactions of individuals designed to serve her. As noted by Bronfenbrenner's ecological model, relationships benefit from the continual exchange of ideas and actions between individuals interacting with each other. Recognizing the reciprocal role interpersonal interactions have was critical to understand how a collaborative environment should work. Results provided insight into the critical factors that contribute to effectiveness, specifically the role of status barriers, or when individuals use differences in professional position as the reason to limit engagement, as well as the perceptions of professional competence and interpersonal skill capability along with professional practice and service implementation.

Brownell et al. (2006) examined how teachers from two elementary schools accepted and integrated information learned from others into their own instructional repertoire. The findings provided an understanding of those "high adopter" teachers who were most inclined to incorporate strategies learned in collaborative professional development. Their inclination to modify and adopt was noticeably in contrast to those teachers identified as moderate or low adopters of collaborative strategies. Other findings noted that high adopters had more knowledge regarding curriculum and pedagogy, an understanding of student behavior and how to manage it as well as greater insight and ability to individualize student instruction. They concluded that professional confidence and open mindedness played a role in the development of collaborative relationships and integrated therapy provision amongst special educators.

The need for professional efficacy was also evident in Prelock et al. (1995). This study described key components for establishing collaborative partnerships for delivering services to children with communication disorders, including establishing a transdisciplinary approach, marketing the collaborative concept, and providing collaborative in-service training. The study emphasized the need to have staff involved in collaborative engagement go through a process in order to achieve a successful level of service integration. The study centered on the task of "role release" (Prelock et al., 1995, p. 293), or the elimination of professional barriers to engagement, in order to achieve successful service integration. The researchers emphasized the process involved in role release and reiterated the critical part it has in the push-in therapy model.

In a similar study, Spann-Hite, Picklesimer, and Hamilton (1999) studied the willingness of teachers to allow speech-language pathologists to participate in classroom activities. The study surveyed 37 employees of

28 schools located in the southeastern United States. The participants included general education teachers, special educators as well as a speech-language pathologist serving students with and without special needs in kindergarten through eighth grade. The researchers asked the participants to respond to 20 items designed to disclose their opinions regarding inclusion and the interdisciplinary approach. A Likert scale was used with scores ranging from strongly agree to strongly disagree. The findings of the study found that a majority of the participants believed that an effective inclusionary classroom could benefited from having a special educator and speech-language pathologist as "collaborative partners" (Spann-Hite, Picklesimer, & Hamiltion, 1999, p. 12) in the classroom with the regular education teacher. In addition, the authors found that the participants' willingness to collaborate was highly dependent on their sense of efficacy and self-confidence.

Sileo (2011) cited the importance of confidence in one's skills as a professional, noting that "special educators often assume more participatory roles when they feel confident with curricular content" (p. 35) while O'Toole and Kirkpatrick (2007) documented the need for "mutual respect for each person's skills and individual contributions" (p. 326). Conversely, McCartney (1999, as cited in O'Toole & Kirpatrick, 2007), described how some teachers and speech therapists note "feeling vulnerable and deskilled" when it comes to collaborative teamwork. Finally, Walker, Shea, and Bauer (2004) noted that effective teachers were "authentic teachers, exhibiting self-insight, self-acceptance, self-appraisal, and realistic self-confidence" (p. 48).

As discussed with regard to the definition of collaboration, Wade et al. (1994) reinforced the importance of these aspects of collaboration with the identification of several variables, specifically the attitudinal and experiential compatibility of potential team members. In their study, regular education teachers and special educators were surveyed regarding their concerns, needs, beliefs, and attitudes regarding collaboration designed to promote inclusion. The study showed that teachers whose values, attitudes, and experiences conflict with those being expressed as part of the collaborative process are less likely to adopt collaborative initiatives. The author noted that teachers ready to collaborate were generally more self-confident in their ability to acquire collaborative skills, such as role sharing.

Possessing a modicum of professional efficacy and a sense of competency was critical in overcoming any hesitancy associated with collaboration. As referenced earlier, Spann-Hite et al. (1999) noted the willingness of teachers to allow speech language pathologists to participate in classroom activities was highly dependent on their own sense of efficacy as a teacher and their ability to manage students with behavioral disabilities. Trimble and Peterson (1999) noted the enhanced sense of efficacy teachers felt when administrators eliminated the need for individual lesson plans. The study also showed heightened collaborative effectiveness by team members along with improved student outcomes as a result of the administrative support associated with the collaborative undertaking. Hartas (2004, as citted in O'Toole & Kirpatrick, 2007) believed that "senior staff need to recognize the benefits of collaboration and allocate appropriate time, and that there should be a clear objective and a clear sense of direction about what is important in therapy and education for children with special needs if collaboration is to be successful" (p. 346).

As noted above, the importance of one's sense of professional capability and efficacy as a component in the milieu of ingredients necessary for an individual to effectively collaborate cannot be underestimated. A number of researchers, including Prelock et al. (1995), Harn, Bradshaw, and Ogletree (1999), and Hantizidimantis (2011), identified one's sense of competency and confidence as critical in the development of their collaborative ethic. But as noted by Butera (2005), participants in the collaborative process are components in a transactional relationship and as noted below; their collaborative capabilities are also

influenced by interpersonal skill capacities.

Interpersonal Skill Capacity

Successful interpersonal relationships, one's attitudinal perspective and how they influence team cohesion and collaborative engagement was the subject of research by a number of researchers (Butera, 2005; Harn et al., 1999; Lim & Adelman, 1997; Niles & Marcellino, 2004; Pena & Quinn, 2003; Wiggins & Damore, 2006). Butera (2005) applied an ecological model of development to how interpersonal skills play a major role in the perspective one has towards other staff and administration. Conversely, Harn et al. (1999) discussed how characteristics, such as trust and open communication aid in developing a collaborative climate within an organization. Researchers, such as Lim and Adelman (1997), Niles and Marcellino (2004), Pena and Quinn (2003), and Wiggins and Damore (2006), all touched upon the need for teams to develop relationships amongst individuals, commit to collaboration and engage in a psychology of collaboration or role release. Lim and Adelman (1997) correlated the intensity of staff commitment to collaboration to the success those teams achieve. Niles and Marcellino (2004) discussed the issues surrounding team work and collaboration while noting the need for the establishment and maintenance of trust, respect, and communication.

Wiggins and Damore (2006) discussed the need for individuals to have a positive attitude and a shared philosophy as well as the critical nature of communication and cooperation for effective collaboration while Kritikos, LeDosquet, and Melton (2010) emphasized the "attributes of friendliness, ability to listen, clarity and honesty… in the establishment of a… communicative pathway" (p. 60) that lends itself to an atmosphere fostering engagement and collaboration. In addition, Welch and Tulbert (2000) noted in their factor analysis of special educators, general education teachers, administrators and related service providers the need for future professionals to recognize and understand the "cultural, systemic, philosophical dimensions of collaboration… and the interpersonal dynamics of the collaborative relationship" (Welch & Tulbert, 2000, p. 374). In addition, others, such as Scruggs (2007, as cited in Sileo, 2011), discussed the need for relationship building by team members and the critical aspect of personal compatibility of the participants. Finally, these findings were supported by Damore and Murray (2008) in their study about urban elementary school teachers engaged in collaborative instruction. In this study, 118 general and special educators from 20 urban elementary schools were surveyed using the "Collaborative Teaching Survey" as designed by the authors. This instrument elicited the participants "perceptions about collaboration, their views regarding inclusion, and what is needed to ensure effective collaborative teaching" (Damore & Murray, 2008, p. 234). The authors noted the high value placed by respondents on the "interpersonal constructs of positive attitudes" (Damore & Murray, 2008, p. 243) and believed that additional research was needed in order to more fully understand this connection to successful collaboration in the classroom setting.

Contextual Setting and Organizational Capacity

In addition to the attitudes, beliefs and values that individuals have towards collaboration, organizations as a whole and groups within larger organizations may substantially influence collaborative development through several other variables. These include the openness versus restrictiveness of the relationships within the group. Groups with restricted or closed relationships have barriers which prevent external stimuli from influencing the functioning of the group (Wade et al., 1994). An unproductive relationship can, therefore, produce far reaching and long term consequences.

Sileo (2011) noted the need for parity amongst team members and the importance of discussing with your

team members the "nitty-gritty details" (p. 34), including such things as intervention approaches, daily chores and shared space. Even those who are supportive of the collaborative and integrated service processes can find themselves overwhelmed. Just the need for regular communication can be a challenge and burden. A study by Hartas (2004) as noted in O'Toole and Kirpatrick (2007) involving 25 educators and 17 speech therapists reinforced the findings in Sileo (2011), noting that 79%-82% of the participants saw time commitments and constraints as the sacrifices they needed to make in order for collaboration to work with each other. In addition, the participants cited the lack of time and organizational structure in support of collaboration as "serious concerns" (Sileo, 2011, p.14).

These issues were cited in a number of other studies, including Liu and Pearson (1999), Robbins-Etlen (2009) and Gallagher, Malone, and Ladner (2009) in studies involving general education teachers and special educators collaborating in an effort to serve students with developmental disabilities in inclusive settings. Gallagher et al. (2009) found time constraints and lack of commitment by school staff as hindrances to collaborative engagements amongst psychologists and other psycho-social support personnel in support to school-based support teams serving students with disabilities. These hindrances point to the need for education and training (Welch, 1998b) and administrative support (Moore-Brown, 1991) in the continued development of collaborative and integrated service delivery systems. In fact, while Mastropieri (2001; as cited in Bauer et al., 2012) noted that the time constraints often limit collaboration, others noted that additional time in the collaborative process sometimes results in less time for engagement in the actual work needed to accomplish the mutually agreed upon goals (Dule, Korner, Williams, & Carter, 1999).

Highlighting the organizational impact on collaboration, Trimble and Peterson (1999) illustrated the institutional, administrative and/or organizational support necessary for collaboration to be successful. In an in-depth study utilizing multiple sources of data gathered through inventories, student performance data, interviews and an examination of school documents, the authors found that administrative support enhanced team processes and student performance. The study showed that certain administrative practices were supportive of team engagement and the overall institutionalization of collaboration within the school. These administrative practices included modeling of effective collaborative practices, commitment to collaboration as an obligation by every professional, an interest in and dissemination of best practice research data, the training of staff in team practices, and regular feedback regarding team planning. Lehr (1999) described that in a case study particular areas of administrative support as essential to the degree of success teachers achieving collaborative teaching including "voluntary participation, adequate planning time, and resources, collaborative training and high visibility of collaboration" (Lehr, 1999, p. 28). These findings, in addition to the results found in Dinnebeil, Hale, and Rule (1999), and the ecological perspective in Butera (2005), recognized the significant direct and transactional influence administrators have in how they use their authority to establish organizational constructs that are necessary for collaboration to succeed. In addition, Conderman and Johnson-Rodriguez (2009), at the conclusion of their study, proposed that a culture supporting collaboration is more likely to result in teachers, especially novice ones, taking on collaborative roles themselves. They also discussed the need for collaboration to be taught in a fashion that goes beyond the constructs of legal and professional mandates and more into the complexities of collaboration with its "contextual nuances" (Conderman & Johnons-Rodriguez, 2009, p. 243).

Obstacles to Collaboration

Although current practices, such as inclusion, has led to a partial dissolution of the cultural divide between general and special education, there remains a host of issues that constrain the ability of professionals to collaborate effectively (Bruder & Dunst, 2005; Harn et al., 1999; Friend, 2000; Rainforth & England, 1997; Welch, 1998b). First, there have been a number of perspectives regarding the concept and process of collaboration that need clarification (Downing & Baily, 1990; Welch, 1998b; Friend, 2000; Bauer et al., 2010). To begin, Downing and Baily (1990) addressed those who were concerned with the shared responsibility component of the process by assuring them that the collective nature of collaboration and its sense of mutual responsibility are in fact, one of the most successful characteristics and leads to a variety of desired outcomes, including enhanced acquisition of student skills. In addition, Welch (1998b) noted several other concerns prevalent in the educational community with regard to collaboration and its intent. First, to coordinate or to be cooperative does not equate to collaboration. Coordinating is a managerial process designed to accomplish certain tasks while cooperation is a process where people may agree to certain activities, whether they are mutually beneficial to all of the parties involved.

Friend (2000) highlighted a few of these added realities, including the belief that collaboration comes naturally and is an easy process to engage in. Friend (2000) noted that it is not uncommon to hear how difficult it is to collaborate, including the time and effort to implement and maintain collaboration. Collaboration is not about liking someone or being liked, it is about trust, respect, and outcomes. Collaboration is not a stand-alone process being employed for its own sake. It is a technique designed to accomplish a goal in a manner not attainable by you alone (Bauer et al., 2010).

In addition, some in the field of special education as well as some in other professions have resisted efforts to collaborate. Dule et al. (1999) identified the "ambivalence" (p. 259) and "significant difficulties" (p. 260) therapists experience when involved in a collaborative team approach. Niles and Marcellino (2004) looked at the bigger picture to explain how our society's emphasis on individualism is behind the hesitation of many participants when it comes to working together and collaboration in general. The study provided insight into the concept of needs based negotiation as a means of creating and sustaining relationships and an effective collaborative environment. Rainforth and England (1997) discussed why not all service providers are enamored with collaboration. In fact, the field of speech language pathology has documented the field's preference for isolated service provision (Ritzman et al., 2006). This perspective is substantiated by Bundy (1995), as cited in Weintraub and Kovshi (2004) who noted that a small percentage, less than 10%, of all occupational therapists is trained to serve students in the classroom setting.

Others in education see collaborative engagements as contrary to their professional demeanor and express preference to work independently. This includes teachers (Troen & Boles, 2011), speech language pathologist, and occupational therapist (Ritzman et al., 2006). Even if the innate human impulse for autonomy was overcome, and while team members may demonstrate a desire to collaborate, the fact remains that "team members typically lack the skills, tools, and support structures that would allow them to orchestrate significant pedagogical and curriculum changes through the collaborative work of the team" (Troen & Boles, 2011, p. 1). In addition, it should not forget that just like any relationship, including a collaborative one, there are conditions where the relationship flourishes as well as conditions where it will not. One condition includes the privatization of practice or as Lortie (1975) noted, the cellular nature of teaching.

Besides the challenges collaboration faces due to the restrictions placed upon it by human interaction, there are other aspects of special education that negatively impact on the ability of staff to collaboration effectively. One factor included changes in how special education is funded. Every year there is a greater use of Medicaid funds which creates additional growth of documentation requirements (Scalise, 2005). It is not unusual for a therapy provider to have three or four documents to complete each time they serve a student (Mintz, 2003). This is particularly true in the provision of early intervention for infants and toddlers as well as related services for students through their school age years. These changes in the management of special education and its funding have also led to mandated productivity levels for service providers (Hamel, 2003), requiring therapists to provide therapy to more students and then documenting it, resulting in less time for engaging for collaboration with other staff.

Lastly, one cannot underestimate the negative impact mandated testing and national standards have on collaborative engagements amongst service providers. The resulting competiveness and high-stakes ranking that occurs in this new era create a "climate of uncertainty" (Snell & Janney, 2005, p. 16) for collaborative teams who now must work on enabling all students to meet mandated standards, not just provide stimulating student instruction.

Conclusions

As detailed above, the development, acquisition, and maintenance of the skills needed to effectively collaborate encompass a variety of ingredients. These components include the perspectives and attitudes pre-service teachers have on collaboration along with the training and professional development they receive before they enter the profession. Additional components of collaboration include the professional expertise and efficacy of the collaborators as well as their interpersonal skills. Finally, the contextual setting in which collaboration is occurring must be considered when attempting to understand the process. While the list of characteristics is extensive, collaboration is not just a set of actions but "a way of being" (Pugach & Johnson, 2002). The collaborative process "reframes" (Dettmer et al., 2005, p. 14) how teachers and therapists engage each other in educational contexts.

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