CONJOINT BEHAVIORAL CONSULTATION VIA DISTANCE DELIVERY (CBC-D): AN EVALUATION OF EFFICACY AND ACCEPTABILITY

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CONJOINT BEHAVIORAL CONSULTATION VIA DISTANCE DELIVERY
(CBC-D): AN EVALUATION OF EFFICACY AND ACCEPTABILITY

by

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A DISSERTATION

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Despite greater prevalence rates of child mental health and behavior problems, rural areas are often overlooked by researchers in favor of urban areas that provide larger, more diverse samples. However, rural children’s problems manifest differently across home and school than what is seen in urban and suburban contexts. Conjoint behavioral consultation (CBC; Sheridan & Kratochwill, 2008) is an evidence-based family-school partnership intervention wherein families and schools collaborate with a consultant to address child concerns. In its traditional format, the time specialized nature of delivering CBC and time and travel commitments needed by participants limits the feasibility of CBC as an option for many rural communities. Distance technology offers potential as a new method of delivering CBC that bypasses many of the barriers facing rural communities.

A concurrent multiple baseline across participants design was used to assess the efficacy of CBC via distance delivery (CBC-D) at improving child compliance. The acceptability of CBC-D to parents and teachers and the change in the parent-teacher relationship as a result of CBC-D were evaluated descriptively. Participants were four parent-teacher pairs from rural communities sharing concerns about a child’s compliance. CBC was conducted through videoconferencing with a behavioral consultant participating in the meetings remotely.
Results revealed little evidence of effects from CBC-D on child compliance. Positive mean changes in parent and teacher reports of compliance occurred for each participant; however, clear and consistent effects were only evident for one child at school. The lack of evidence supporting CBC-D may indicate that it is not an effective intervention for child compliance with rural participants; however, sample and measurement limitations make it difficult to draw a conclusive interpretation of the efficacy of CBC-D. Social validity data suggested high levels of acceptability of CBC-D to parents and teachers. Similarly, parent-teacher relationship data suggested that CBC-D can positively impact the parent-teacher relationship. Treatment integrity data indicated CBC-D can be implemented with high rates of integrity. Additionally, parent and teacher self-report of individualized intervention integrity was also high; however, there was a significant amount of missing integrity data for two participants. Limitations, implications and future directions are discussed.
GRANT INFORMATION

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Chapter I: Introduction

Children from rural areas exhibit rates of behavioral concerns that distinctly differ from their more researched urban counterparts (Sheridan, Koziol, Clarke, Rispoli, & Coutts, 2014). Children presenting with behavioral concerns early in their schooling are at risk for many negative long-term outcomes (Bub, McCartney, & Willett, 2007; Reinke, Herman, Petras, & Ialongo, 2008). To address these behavioral concerns, it is important to target the most relevant environments (i.e., home and school) in which children develop.

Congruence in beliefs, practices and messages across home and school environments has been shown to positively influence children’s behavioral and academic development (Barbarin, Downer, Odom, & Head, 2010; Hansen, 1986). Family-school partnerships are one method of enhancing the continuity between home and school environments with the goal of promoting child success across environments. Family-school partnerships are couched within ecological systems theory (Bronfenbrenner, 1979) which posits a child’s development is influenced by a variety of systems ranging from the direct microsystems (e.g., home and school) to indirect macrosystems (e.g., sociocultural contexts such as a family’s socioeconomic status). The second level of systems theory, the mesosystem, is comprised of interactions between children’s microsystems (e.g., parent and teacher interactions) that influence children’s development. These mesosystemic interactions represent the locus of family-school partnerships.

Conjoint behavioral consultation (CBC; Sheridan & Kratochwill, 2008) is an evidence-based family-school partnership intervention that promotes positive child outcomes. The goals of CBC are to bring parents or caregivers and teachers together to
support positive academic, behavioral and social-emotional outcomes for children, engage families and schools and strengthen family-school partnerships through joint, collaborative problem-solving with a behavioral consultant (Sheridan & Kratochwill, 2008). These goals are accomplished through a four stage, three interview conjoint problem-solving process delivered through a series of on-site meetings. The specialized nature of CBC and the need for on-site meetings with a behavioral consultant limit the accessibility of CBC for some populations.

Rural communities are often faced with a number of barriers to receiving specialized services to support children’s health. Specifically, barriers are related to a lack of availability (e.g., lack of specialized service providers), accessibility (e.g., geographic or financial barriers to seeking outside services) and acceptability (e.g., low trust of service providers from other communities, stigma associated with services; Owens, Murphy, Richerson, Girio, & Himawan, 2008). CBC delivery requires specialized, criterion-based training and multiple meetings between parents, teachers and a behavioral consultant, which limit its potential as a cost-efficient service to rural communities.

Distance technology (i.e., web-based videoconferencing) offers promise as a method of delivering services that bypass many of the traditional barriers facing rural communities (Richardson, Frueh, Grubaugh, Egede, & Elhai, 2009). Specifically, distance technology has been used to effectively deliver mental health therapies (Bouchard et al., 2004; Nelson, Barnard, & Cain, 2003), teacher professional development coaching (Allen, Pianta, Gregory, Mikami, & Lun, 2011; Powell, Diamond, Burchinal, & Koehler, 2010) and school-based behavioral consultation (Gibson,
Pennington, Stenhoff, & Hopper, 2010; Rule, Salzberg, Higbee, Menlove, & Smith, 2006). Given the promise of distance technology as a service delivery method for rural communities, a logical step in furthering research on CBC includes investigating the efficacy of CBC conducted via distance delivery (CBC-D) to rural communities.

The present study examined the efficacy of CBC-D (i.e., the implementation of CBC with parents and teachers through web-based videoconferencing) on child compliance at home and school within rural settings. Further, it assessed the acceptability of CBC-D to parents and teachers and the change in parent and teacher perceptions of the parent-teacher relationship following CBC-D for a small sample. Four children (3 male, 1 female) aged 6 to 10 years from rural Nebraska communities and their parent and teacher dyads participated in this study. Children were recruited based on parent- and teacher-reported concerns about the child’s compliance at home and school, respectively. CBC-D was facilitated by trained consultants located in Lincoln, Nebraska and consisted of three or four conjoint interviews conducted over web-based videoconferencing technology with the parent-teacher dyads located in the child’s school.

Study outcomes consisted of child compliance at home and school, social validity of CBC-D and the parent-teacher relationship. The study was conducted using a concurrent multiple baseline across participants design for child compliance at home and school. Compliance was assessed using parent and teacher daily reports and compliance data were analyzed using visual inspection, conservative dual criterion (CDC) and percentage of all non-overlapping data (PAND). Social validity was assessed using parent and teacher self-report scores of CBC-D’s acceptability and contrasting those acceptability scores with previous CBC research. Changes in the parent-teacher
relationship were evaluated by pre- and post-intervention self-reports by parents and teachers of their perception of the parent-teacher relationship. Parent-teacher relationship mean changes as a result of CBC-D were also contrasted to mean changes in previous CBC research. Additional feedback about the videoconferencing process was collected from parents and teachers following each CBC-D interview to be used formatively to optimize their experience. These data are presented as mean scores and interpreted descriptively. Finally, data were collected regarding treatment integrity across two levels. The first level assessed the degree to which CBC-D was implemented as it was intended. The second level assessed parent and teacher self-reports of implementing an individualized intervention plan at home and school.

Results of this initial study of CBC-D revealed mixed evidence of effects of CBC-D on child compliance. Although, mean ratings of compliance increased for each participant following the introduction of the intervention, visual analysis indicators and statistical aids did not support the presence of a treatment effect with one exception. One student’s data suggested a treatment effect at school; the treatment effect was not replicated at home or for the remaining participants. It is possible the sample of students in this study did not present sufficient compliance needs to detect a treatment effect. Baseline data were high (i.e., a mean at or above 7 on a 10-point scale) across home and school for three participants and at school for the fourth, severely limiting the ability to assess the impact of CBC-D on compliance.

Social validity data suggested high levels of acceptability of the CBC-D intervention to consultees\(^1\) (i.e., parents and teachers) that are analogous to levels found within previous research on traditional CBC in rural communities. Similarly, parent-
teacher relationship data suggested that CBC-D may positively impact the parent-teacher relationship at rates similar to previous CBC research in rural communities. Consultees also reported positive feedback regarding their experience with the videoconferencing process that generally increased as they progressed through the CBC-D intervention. Treatment integrity data indicated CBC-D can be implemented by trained consultants with high rates of integrity using web-based videoconferencing technology. Additionally, parent and teacher self-report of individualized intervention integrity was also high; however, there was a significant amount of missing integrity data for two participants.

1 The term consultee is used throughout this manuscript to represent participating parents and teachers. This term is common in consultation research and used to differentiate participants from the consultant.
Chapter 2: Literature Review

Rural Children

Rural children experience significantly more mental health problems and display more at-risk behaviors relative to their urban counterparts (Sheridan et al., 2014), and this between-community difference is even greater in the rates of behavioral difficulties (Lenardson, Ziller, Lambert, Race, & Yousefian, 2010). Furthermore, these problems are occurring early in rural children’s educational experience. Rural children are entering school with higher levels of externalizing behaviors (Sheridan et al., 2014) and displaying lower self-control behaviors (Bender, Fedor, & Carlson, 2011) relative to children from non-rural settings. Children with behavior problems are at increased risk for a number of deleterious academic, social-emotional and behavioral outcomes (Bub et al., 2007; Lopes, 2007; Schofield, Bierman, Heinrichs, & Nix, 2008; Vitaro, Brendgen, Larose, & Trembaly, 2005) and these outcomes remain prevalent throughout children’s schooling (Reinke et al., 2008).

Depending on the context, different patterns of behavior problems occur for children from rural and non-rural settings. Using a large, nationally representative dataset, Sheridan and colleagues (2014) investigated whether geographic setting (i.e., rural and non-rural) was related to children’s social and behavioral skills in Kindergarten. Findings revealed that children from rural settings exhibited significantly greater externalizing behaviors in Kindergarten than children from other settings. Additional differences between children from rural areas and urbanized areas can be seen in the academic domain; urban and suburban children enter school with more advanced academic skills than rural children (Miller & Votruba-Drzal, 2013). This difference in
academic skill levels may be due in part to the fact that proportionately, rural children spend more time in home-based preschools as opposed to center-based preschools where there is a strong, overt focus on academic skill development (Miller & Votruba-Drzal, 2013). Together, these studies suggest early elementary-aged children from rural settings may be at risk for greater behavioral and academic difficulties than their non-rural counterparts and accentuate the need for increased support services in rural communities.

The importance of the home as an educational environment cannot be overstated. Home environments that are supportive of children’s educational experiences, especially those that support early language development, prepare children for school entry and later school success (Chazan-Cohen et al., 2009; Kirby & Hogan, 2008). Moreover, children from homes that consistently support educational experiences early in their lives experience positive outcomes in vocabulary and literacy skills at age five (Rodriguez & Tamis-LeMonda, 2011). Given the importance of the home and school in children’s early development, it is essential for interventions to target both settings.

**Family-School Partnerships**

**Ecological systems theory.** Ecological systems theory (Bronfenbrenner, 1979) posits that children’s development is embedded within a series of interacting systems and contexts. Different systems operate across varying levels of contact with the child ranging from proximal and direct, to distal and indirect. The primary system is called the microsystem and consists of the immediate settings with which children have direct contact. Typically, children spend most of their time in the home and school settings; thus, these settings make up the primary microsystems for most children. Schools provide a structured environment for fostering children’s development; however, the home is an
equally important context through which families influence a child’s development (Dearing & Tang, 2010). The mesosystem is the next proximal level of influence on development. Mesosystems are comprised of relationships between children’s microsystems (i.e., families and schools) and their bi-directional influences on one another. Family-school partnerships are prime examples of how the mesosystem can exert its influence on children’s development. For instance, a child’s struggles in math may be revealed to a parent during parent-teacher conferences and a plan for parent assistance with homework might develop. As a result of the parent-teacher conference, additional homework assistance may be provided to support the child’s educational development. Mesosystemic interactions between families and schools appear to be the main mechanism through which family-school partnerships impact child development.

The next level of influence, the exosystem, consists of environmental events or conditions that impact the mesosystems and microsystems but do not directly interact with the child. Specific to family-school partnerships, exosystemic influences are represented through the contexts that allow for or impede family-school interactions. Examples of exosystemic influences on family-school partnerships are school policies that require school personnel to reach out to families, trainings that impact the manner in which school personnel and families interact, or the degree to which parents’ work schedules allow flexibility for engaging in partnership activities (Clarke, Sheridan, & Woods, 2010). These exosystemic influences do not have a direct effect on the child; however, they directly impact the context of the family-school partnerships (mesosystem), which in turn, directly impacts the microsystems and ultimately the child’s development. For example, administrators sending out a school-wide memo to teachers
requiring them to contact and set up conferences with families of underachieving readers (i.e., exosystem; school-wide policy), may lead to increased family-school contact and partnership (i.e., mesosystem) and subsequently influence a child’s reading practices in the home setting (i.e., microsystem) that supports the child’s reading development.

The highest order of influence, the macrosystem, includes the sociocultural context within which all other lower order systems operate. Examples of macrosystemic influences pertinent to family-school partnerships include family and school cultures (e.g., school/community beliefs about family-school partnerships, socioeconomic status, family/teacher ethnicity) and government legislation such as the Individuals with Disabilities Education Act of 2004 (IDEA, 2004) and No Child Left Behind (NCLB, 2002). As an extension to the previous example of exosystemic influence (i.e., school-wide policy to partner with parents), the current legislative agenda for holding schools accountable for children’s academic progress (i.e., IDEA, NCLB) has led to federal initiatives requiring schools to increase their efforts to initiate partnerships with families.

As a whole, Bronfenbrenner’s ecological model demonstrates the significance of direct and indirect influences on children’s development and provides a framework for understanding the impact of family-school partnerships on children’s development. It is hypothesized that family-school partnerships operate on and influence children’s development through the mesosystem (Sheridan & Kratochwill, 2008) and recent research supports this theory of change (Sheridan, Bovaird, Glover, Garbacz, Witte, & Kwon, 2012). In a positive and healthy mesosystem, adults coordinate efforts and messages that support children’s development (i.e., continuity) and provide cross-system supports in the home and school settings.
**Importance of continuity.** Continuity across systems represents a unique feature of family-school partnerships. Continuity is established when there is direct contact between families and schools and their efforts are coordinated to enhance a child’s development (Crosnoe, Leventhal, Wirth, Pierce, Pianta, & NICHD Early Child Care Research Network, 2010). Continuity goes beyond individual practices, beliefs and values displayed by parents and school personnel; it consists of cross-setting shared, consistent and predictable messages for children. It is important for children to be stimulated across environments; however, stimulation can be enhanced when there are coordinated efforts by parents and teachers to build on the individual contributions of all parties (e.g., a mesosystemic influence). For example, in a study by Galloway and Sheridan (1994), students experiencing problems with task completion and accuracy in mathematics demonstrated greater improvements in both behaviors when there was shared problem solving and intervention implementation by parents and teachers (i.e., conjoint consultation), than when parents were only tangentially involved (i.e., provided a manual and told what to do).

Positive relationships have been reported between cross-setting (i.e., home-school) continuity and academic achievement (Hansen, 1986; Phelan, Davidson & Yu, 1998; Warzon & Ginsburg-Block, 2008). For instance, when rules for children’s behavioral conduct are similar across home and school, children receive better academic grades; conversely, children’s grades decline when there is discontinuity between home and school rules around behavior (Hansen, 1986). The positive effects of continuity between home and school are also demonstrated prior to children reaching kindergarten (Barbarin et al., 2010; Crosnoe et al., 2010). Barbarin and colleagues (2010) found that
pre-kindergarten students with parents and teachers who shared child-centered beliefs, promoted child autonomy and supported children’s emotional and academic needs were better prepared to enter kindergarten than students with parents and teachers who had different beliefs and behaviors. In early childhood, the positive effects of continuity are greater for students coming from low-income environments when compared to students from more advantageous environments (Crosnoe et al., 2010). Additionally, interventions targeting the enhancement of continuity between home and school have shown positive behavioral and social outcomes for children (Galloway & Sheridan, 1994; Sheridan et al., 2012; Sheridan, Eagle, Cowan & Mickelson, 2001; Sheridan, Kratochwill & Elliott, 1990).

**Empirical support for family-school partnerships.** Family-school partnership interventions have demonstrated positive effects on a number of child outcomes. For instance, family-school partnerships have led to increases in appropriate classroom behaviors (Kelley & McCain, 1995), decreases in tantrums and incontinence (Barry & Santarelli, 2000), decreases in disruptive behaviors (Lien-Thorne & Kamps, 2005; McConaughy, Kay, & Fitzgerald, 1998; McDonald et al., 2006; Sheridan et al., 2012), increased social interactions (Mortier, Hunt, Desimple, & Hove, 2009), increased interpersonal competencies and social skill development (Colton & Sheridan, 1998; Sheridan, Knoche, Edwards, Bovaird, & Kupzyk, 2010; Sheridan et al., 2012), reduced emotional disturbances (McConaughy, Kay, & Fitzgerald, 1999) and decreased risk of substance use and conduct problems later in life (Connell, Dishion, Yasui, & Kavanagh, 2007),
In addition to behavioral and social-emotional outcomes, family-school partnership interventions have also demonstrated efficacy for improving child academic behaviors such as children’s homework completion (Galloway & Sheridan, 1994; Kerawalla et al., 2007; Weiner, Sheridan, & Jenson, 1998), cognitive abilities (Wasik, Ramey, Bryant, & Sparling, 1990), math performance (Blechman, Taylor, & Schrader, 1981; Galloway & Sheridan, 1994), language readiness (Sheridan, Knoche, Kupzyk, Edwards, & Marvin, 2011), academic engagement (Lehr, Sinclair, & Christenson, 2004; Lien-Thorne & Kamps, 2005; McConaughy et al., 1998; Mortier et al., 2009) and academic performance (Kelley & McCain, 1995; McDonald et al., 2006; Morrow & Young, 1997; Mortier et al., 2009). Combined, these studies demonstrate the essential role that family-school partnerships can play in improving child outcomes across a range of problems; however, given the distinctive differences across geographic contexts (e.g., rural, urban), it is important to discuss the role of family-school partnerships within a context-specific framework.

**Family-school partnerships in the rural context.** Although there is an abundance of literature supporting the use of family-school partnerships to address child problems, very few studies have investigated the effects of these interventions within the rural context. The small sample of studies that have been conducted with rural populations have been marked by a number of limitations, as revealed by a review of the empirical literature on family-school connections in rural settings by Semke and Sheridan (2012). One of the deficiencies is the lack of a consensus definition of rural, which limits the ability to generalize results. Additionally, studies tend to be descriptive in nature or were not designed in a manner that would answer research questions specific to rural
contexts (Semke & Sheridan, 2012). Overall, Semke and Sheridan’s review (2012) of family-school connections in rural settings revealed that there is a need for more research using strong research methodology that addresses research questions targeted specifically to enhance what is known about the role of family-school partnerships in rural communities.

Despite the dearth of strong outcome research investigating family-school partnerships within rural contexts, there are studies that qualitatively demonstrate the importance of partnering with families by school personnel. In one study, principals from high achieving rural schools identified having a close relationship with the community as one of the important factors contributing to their success (Barley & Beesley, 2007). Administrators from these high achieving schools noted that their schools are integral to the functioning of the entire community and extend their interaction with the community beyond traditional roles of schools (e.g., serving as an events center; Barley & Beesley, 2007). It may be through increased informal, community-based interactions with families that teachers could gain a new perspective through which to view a child’s behaviors and offer a starting point for collaborative partnerships. These actions may implicitly promote an atmosphere that is supportive of family-school partnerships (Christenson & Sheridan, 2001). Through communication and shared experiences with children and their families, teachers can demonstrate to families that they are important contributors to their children’s development and their opinions are valuable to the school.

More research is needed on the efficacy of family-school partnership models and interventions within the rural context, designed to increase family-school communication, develop and strengthen relationships between families and schools and use child
observations as a basis for understanding problems. One example fitting the description above is conjoint behavioral consultation.

Conjoint Behavioral Consultation

Definition and conceptualization. Conjoint Behavioral Consultation (CBC; Sheridan & Kratochwill, 2008) is an empirically-validated family-school partnership intervention for students with academic, behavioral or social problems (Sheridan et al., 2001; Sheridan et al., 2012). More specifically, CBC is a “strength-based, cross-system problem-solving and decision-making model wherein parents, teachers, and other caregivers or service providers work as partners and share responsibility for promoting positive and consistent outcomes related to a child’s academic, behavioral, and social-emotional development” (Sheridan & Kratochwill, 2008, p. 25). There are three overarching goals of CBC: (a) to promote academic, behavioral and social-emotional outcomes for children through conjoint, collaborative problem-solving, (b) to promote meaningful parent and teacher participation and engagement in their children’s education, and (c) to establish and strengthen family-school partnerships (Sheridan & Kratochwill, 2008).

Two theories provide the foundation of CBC. From an ecological systems theoretical standpoint, CBC is thought to indirectly influence child outcomes by directly influencing the child’s micro and mesosystems (i.e., influencing parent and teacher behavior as well as strengthening the relationship between them). Additionally, CBC relies on behavioral theory positing that behaviors, both positive and negative, are developed and maintained through children’s interactions with their environments.
**Procedures and components.** Conjoint behavioral consultation involves a sequence of on-site meetings over the course of several weeks between parents, teachers and a behavioral consultant aimed at supporting positive outcomes for children. The four stages of CBC include: (a) Conjoint Needs Identification (and the Conjoint Needs Identification Interview; CNII), (b) Conjoint Needs Analysis (and the Conjoint Needs Analysis Interview; CNAI), (c) Plan Implementation and (d) Conjoint Plan Evaluation (and the Conjoint Plan Evaluation Interview; CPEI). The goals of the three interviews are to (a) collaboratively identify patterns and environmental factors that influence child behavior, (b) collaboratively develop individualized behavioral plans at home and school to promote positive and decrease negative child behaviors and (c) collaboratively evaluate the impact of the plans on child behavior at home and school. Parents and teachers implementing the individualized behavior plans in the home and school environment while receiving fidelity support from the consultant is the main objective of the plan implementation stage.

**Empirical evidence.** Research conducted over two decades has demonstrated the efficacy of CBC using a variety of methodologies ranging from case studies and experimental single-case designs to large-scale data-based reviews and a randomized controlled trial. For instance, early research on CBC using case studies and single-case designs has shown that CBC can effectively increase child task completion and accuracy in mathematics (Galloway & Sheridan, 1994; Weiner et al., 1998), on-task and compliance behaviors (Wilkinson, 2005), cooperative peer interactions (Colton & Sheridan, 1998) and social initiation behaviors (Sheridan et al., 1990). As an example, Wilkinson (2005) reported that a self-management intervention delivered to two students...
within the context of CBC improved their on-task and compliance behaviors. Furthermore, outcomes were maintained four weeks later.

Four large-scale data-based reviews provide further evidence of CBC’s efficacy beyond what can be generalized using smaller designs. Guli (2005) reviewed 18 studies on parent consultation and found strong evidence supporting CBC as the most efficacious for improving school-related outcomes. Another review found that interventions delivered within the context of CBC had larger effect sizes for a diverse sample of 125 students (Sheridan, Eagle, & Doll, 2006). A review of a federally-funded CBC graduate training project showed that students with disabilities or at-risk for academic failure receiving CBC saw positive treatment gains across home and school settings (Sheridan et al., 2001). In this sample, the average home effect size was 1.08 ($SD = .82$) and the average school effect size was 1.11 ($SD = 1.24$). The final large-scale review investigated CBC’s efficacy with an early childhood sample of 48 children aged 6 or younger (Sheridan, Clarke, Knochke, & Edwards, 2006). Results from this review demonstrated positive effects at home (average effect size 1.01; $SD = 1.78$) as well as school (average effect size 1.15; $SD = 1.44$).

Finally, results of a randomized controlled trial revealed that, relative to a control group, children receiving CBC demonstrated significant improvements in their adaptive skills and externalizing problems at school and their social skills across both home and school (Sheridan et al., 2012). CBC’s effects on child outcomes was mediated by teacher reports of their relationship with parents, suggesting there is evidence that the positive child outcomes as a result of CBC were caused in part by improvements in teachers’ perceptions of their relationship with parents (Sheridan et al., 2012). A second
randomized controlled trial is currently being conducted with a rural sample and the preliminary results provide encouraging support for the use of CBC as an efficacious treatment option for rural communities (Sheridan, Holmes, Coutts, Smith, Kunz, & Witte, 2013).

In addition to the research on efficacy, the acceptability of CBC to consultees (i.e., parents and teachers) has also been studied. When compared to other behavioral consultation models (i.e., parent/consultant-only and teacher/consultant-only), CBC was rated most favorable from a sample of 111 parents and 61 teachers (Freer & Watson, 1999). School psychologists also view CBC as a highly acceptable method of service delivery. In the United States, a national sample of school psychologists rated CBC as a highly acceptable consultation model (Sheridan & Steck, 1995). Similarly, CBC was rated as highly acceptable by a sample of school psychologists and parents from Canada (Sladeczek, Madden, Illsley, Finn, & August, 2006). Lastly, a sample of parents and teachers participating in CBC to address concerns of medically referred children also rated the intervention as highly acceptable (Sheridan, Warnes, Woods, Blevins, MaGee, & Ellis, 2009).

Limitations of CBC Implementation in Rural Contexts

Although CBC has a substantial amount of empirical support, barriers exist in regard to its use in certain contexts, such as within rural communities. Lack of personnel with access to specialized training is one of the features limiting CBC’s utility in rural communities. Although CBC is empirically supported, formal training in CBC procedures is not readily available to many practitioners in rural areas. Specialized training in CBC is imperative with regards to treatment integrity and ensuring that CBC
implementation is administered as intended by the consultant. School psychologists have typically served as the main implementation agents of CBC; however, criterion-based training in CBC is not a standard practice in the majority of school psychology programs. School psychologists are often formally trained in traditional behavioral consultation (i.e., a consultant and parent-only or consultant and teacher-only); however, CBC and its cross-systems approach distinguish it from traditional behavioral consultation methods and require unique preparation.

Rural school psychologists are often responsible for serving a number of schools or districts that cover an expansive geographic area, increasing the number of students they serve and limiting the amount of time and resources available to deliver high quality consultation and intervention services. Subsequently, even if a rural school psychologist were trained in CBC, his/her ability to deliver CBC compared to school psychologists assigned to one building or district may be limited. Many rural schools lack available school psychologists and data trends suggest that the availability of school psychologists in rural areas is trending downward (Curtis, Grier, & Hunley, 2004). This downward trend of availability is especially concerning given the prevalence of rural children experiencing difficulties early in their educational careers.

Additionally, CBC requires a strong commitment of time from all members over the course of several weeks. The sequence of on-site meetings between parents, teachers and a consultant may not be feasible for itinerant professionals or consultees (i.e., parents and teachers) due to travel and time costs. A current randomized controlled trial is testing the efficacy of CBC in rural communities under a traditional, on-site format and costs to researchers are exorbitant. Costs in time and travel for consultants are greater than what
is typically available for itinerant professionals or rural residents who seek outside services; thus, CBC may not be feasible for the majority of rural communities without funding (e.g., grant awards) to supplement the costs.

Rural families may already be at a disadvantage in terms of access to resources necessary for behavioral services. In particular, families with children with special needs are ideal candidates for CBC, yet they are already spending six or more hours per week coordinating care for their child (Lenardson et al., 2010), leaving less time and resources for interventions that require substantial engagement and time commitments. An additional concern, particularly with rural populations, is the increased distance between consultants and rural communities. Distance greatly inhibits consultants’ abilities to provide necessary fidelity support, an integral part of CBC, or provide immediate support if problems arise. CBC also requires advanced scheduling of interviews and coordination of schedules between multiple people. The coordination of multiple schedules can create additional difficulties and limited flexibility with regards to cancellations and rescheduling for rural residents.

Furthermore, rural parents may not see the need for consultation services because they do not view their child as having significant problems. Girio-Herrera and colleagues (2013) examined perceived barriers to rural parents seeking intervention services for their children using a sample of 597 kindergarteners, 51% of which were at-risk for emotional, behavioral, social and adaptive problems. Results showed that only 33% of the parents with at-risk children believed their child was experiencing problems. This underidentification of problem behaviors by parents may cause them to view CBC as an unacceptable and unnecessary intervention, creating resistance to participation.
In summation, rural communities face many barriers that prevent them from accessing specialized services, such as CBC, despite the growing needs experienced by rural children. Some barriers are personal barriers that become more salient for rural residents (e.g., lack of time and financial resources for travel) whereas others are due to barriers inherent within rural contexts (e.g., geographic isolation, fewer specialized service providers). These barriers place rural communities at a distinct disadvantage compared to urban communities when it comes to accessing specialized services; however, new technologies are available that offer promise as a potential solution to overcoming the barriers discussed above.

Distance Technology

**Definition.** Distance technology, also referred to as telecommunication, consists of any technological device that can provide direct communication between two or more people in separate geographic locations. In terms of service delivery these communications generally refer to connections between service providers and clients (e.g., a psychologist and a patient). Bischoff (2004) identified a number of commonly used distance technology options: (a) telephone communication, (b) electronic mail, (c) internet-aided synchronous written discussions (e.g., instant messaging) and (d) web-based video/audio discussions (e.g., web-based videoconferencing). Of these options, web-based videoconferencing is the most effective form of distance technology for simulating on-site interactions because it allows for uninterrupted real-time video and audio communications between people in separate geographic locations. Subsequently, the remaining discussion of distance technology will focus solely on web-based videoconferencing technology. Three promising lines of research have investigated the
efficacy of using distance technology to deliver services to rural communities: telehealth, distance coaching and distance school-based consultation.

**Telehealth.** Telehealth is a specific form of web-based videoconferencing that takes place between health care providers and patients. Telehealth can refer to both physical and mental health domains; however, the following discussion will focus on the research for telehealth as used to address mental health concerns. The majority of telehealth research in the area of mental health psychology has focused on Cognitive Behavioral Therapy (CBT). In particular, studies have examined the effects of CBT when delivered on-site and through distance technology for a diverse range of presenting problems. As an example, Germain and colleagues (2009) compared the effects of on-site CBT with telehealth CBT for patients with posttraumatic stress disorder. Both conditions led to decreased frequency and severity of symptoms. Most importantly, there were no significant differences between groups based on service delivery method (i.e., on-site and telehealth). Bouchard and colleagues (2004) found similar results for patients with panic disorder.

In a study of Cognitive Behavioral Therapy’s (CBT) effect on 28 randomly assigned children with childhood depression, Nelson, Barnard, and Cain (2003) found significant improvements in children’s total depression scores on the Children’s Depression Inventory for children receiving CBT through telehealth and on-site sessions; however, there was a significant interaction effect wherein children in the telehealth group had a significantly faster rate of decline in total depression score suggesting that providing CBT through telehealth may have greater immediate effects on childhood depression.
Distance coaching. Distance coaching involves the delivery of instructional performance feedback to teachers by specialized instructional coaches as a form of professional development (Pianta, Mashburn, Downer, Hamre, & Justice, 2008; Powell et al., 2010). Traditional school-based professional development training typically includes a one- or two-day workshop where teachers are presented with a new strategy or curriculum; however, rarely do teachers receive any further training or feedback. Distance coaching fills a service gap in traditional professional development training by emphasizing the training component and providing teachers with continued direct instruction and performance feedback.

My Teaching Partner (MTP), an “ongoing, systematic professional development program for teachers” (Pianta & Allen, 2008, p. 30), has received strong empirical support as a method for using direct instruction, modeling and feedback to improve teacher instruction and teacher-student relationships (Allen et al., 2011; Mikami, Gregory, Allen, Pianta, & Lun, 2011; Pianta & Allen, 2008). Through the MTP program teachers receive web-based, supportive consultation from a distance coach centered on teachers’ curriculum implementation and relationships with students. A randomized trial investigating the efficacy of MTP revealed that students from classrooms receiving MTP experienced significant gains in achievement test scores (Allen et al., 2011). Similarly, Mikami and colleagues (2011) reported significantly greater increases in observed positive peer interactions in classrooms receiving MTP relative to control classrooms. In a pre-kindergarten sample, teachers receiving MTP reported greater increases in the quality of interactions with their students than teachers receiving non-interactive coaching (Pianta et al., 2008).
Distance coaching has been shown to be as effective as on-site coaching. A randomized controlled trial revealed no significant differences in the effectiveness of a professional development intervention delivered to Head Start teachers to support children’s language and literacy skills whether it was delivered on-site or remotely through distance technology (Powell et al., 2010). Teachers receiving expert coaching experienced significant positive changes in their classroom supports for early literacy and language development and classroom environment. Children in both coaching conditions demonstrated significant increases in letter knowledge, writing, blending skills and concepts about print (Powell et al., 2010). Combined with the evidence supporting My Teaching Partner, these results demonstrate that distance technology is an effective and promising method of delivering coaching to teachers.

**Distance school-based consultation.** Despite the common use of behavioral consultation in schools, little research exists examining the use of web-based videoconferencing as an effective consultation delivery medium. Gibson and colleagues (2010) used web-based videoconferencing software to provide two pre-school teachers with behavioral consultation support for a four-year old male with autism. An ABAB design was used to evaluate the impact of the consultation on the child’s elopement (i.e., leaving an area without supervision or permission). Results demonstrated the positive effects of the web-based videoconferencing consultation. Specifically, when the intervention developed through web-based videoconferencing consultation was introduced, the rates of student elopement decreased significantly. When the intervention was withdrawn, rates increased back to baseline rates. Similarly, Rule and colleagues (2006) reported results of a case study in which web-based videoconferencing was used...
to deliver feedback to school personnel on implementation of an intervention for a child with autism. Significant improvements were seen in child behavior; however, due to limitations of the technology (i.e., inconsistent audio communication), the full benefits of using web-based videoconferencing consultation were not realized.

The use of technology is increasing at an exponential rate and becoming a significant part of everyday school life (e.g., the use of smart phone and tablet technologies); thus, it is only natural that the field of school psychology explore how these advancements can be used to positively impact practice and research. Furthermore, as technology use increases, the acceptability of using service delivery methods such as distance technology may not appear as foreign or be met with as much discomfort as it may have in previous decades.

Acceptability of web-based videoconferencing. Web-based videoconferencing as a medium for delivering telehealth services to rural clients has received favorable ratings for acceptability (Blackmon, Kaak, & Ranseen, 1997; Shore, Brooks, Savin, Orton, Grigsby, & Spero, 2008; Stahl & Dixon, 2009). For instance, Blackmon and colleagues (1997) reported that 98% of parents that received web-based videoconference psychiatric consultation services for their children were as satisfied with the consultation delivery as they would be with an on-site consult. Similarly, Shore and colleagues (2008) reported high rates of acceptability for conducting telepsychiatric assessments with a sample of 53 American Indian veterans.

Ratings of web-based videoconference acceptability by school personnel have been mixed. Some research found positive ratings (Gibson et al., 2010), and other research suggests that it is a less acceptable method compared to on-site services.
(Spaulding, Davis, & Patterson, 2008). For instance, Gibson and colleagues (2010) reported that special education teachers receiving behavioral consultation through web-based videoconferencing rated the intervention as an acceptable method of intervention deliver, with mean teacher ratings of 5.7 out of 6 using the Behavior Intervention Rating Scale – Revised (BIRS-R; Von Brock & Elliott, 1987). Conversely, results from a study comparing an on-site presentation educating school professionals about students with chronic illnesses to the same presentation delivered through web-based videoconferencing showed that the on-site method was rated significantly higher (Spaulding et al., 2008).

There are drawbacks of using web-based videoconferencing technology to deliver services, some of which are inherent to the use of technology and others that are associated with users’ familiarity with technology. The presence of technological problems (e.g., slow internet connections) is one factor that plays a role in the acceptability of web-based videoconferencing service delivery (Rule et al., 2006). Rule and colleagues (2006) reported that a main criticism from school personnel did not involve the structural presentation of information but instead problems with the process of delivering the services due to equipment malfunctions. Developing protocols for handling technological problems and piloting software are two recommendations for improving the quality of web-based videoconferencing service delivery in schools (Gibson et al., 2010; Rule et al., 2006).

Despite some of the concerns with web-based videoconferencing technology, distance technology services offer a new method for interacting in real-time across vast geographic areas. Distance technology can reduce the amount of travel time for those
both seeking and providing services, allowing even the most remote areas access to
effective services. Additionally, with the time saved through web-based
videoconferencing there is the potential for service providers to reach a larger number of
people. Time and money are valuable commodities and distance technology offers a
promising method that reduces the costs of both. Although the use of distance technology
has demonstrated efficacy and acceptability in both the home and school setting, to date
no research has investigated the efficacy of using distance technology as a means of
delivering cross-system, behavioral consultation services.

**Summary and Purpose of the Study**

As stated, children from rural areas with behavioral difficulties as early as
elementary school are at risk of negative long-term outcomes without appropriate
intervention. Rural communities, however, face many practical and financial barriers to
receiving evidence-based, specialized services such as geographic and travel and time
costs. These barriers limit the intervention options available to rural families and schools
for addressing these behavioral concerns. Recent research findings on the use of web-based
videoconferencing offer promise as an effective and acceptable means of service
delivery that bypasses many of the barriers facing rural communities.

Conjoint Behavioral Consultation, an indirect form of service delivery involving
the joining of multiple systems to address child behavioral concerns, is one example of an
evidence-based intervention that is not typically available to rural communities without
significant grant funding. An on-going randomized controlled trial assessing CBC’s
effects within rural communities for children with behavioral concerns has demonstrated
preliminary results that suggest that CBC can be effective with this sample (Sheridan et
al., 2013); however, the randomized controlled trial was not designed to address the practical limitations of rural service delivery. To date, no studies have investigated the use of web-based distance technology as a service delivery method for implementing CBC within rural communities. Therefore, the purpose of the current study is to add to the CBC literature by addressing the practical limitations of CBC’s use within rural communities as a cost-efficient intervention by using web-based videoconferencing technology as a means of service delivery.

The current study was the first to explore the efficacy of conjoint behavioral consultation via distance delivery (CBC-D). Specifically, the study examined the efficacy and acceptability of CBC-D and its impact on perceived changes in the parent-teacher relationship with a rural sample. The first research question for this study was “What are the immediate effects of CBC-D on child compliance at home and school?” It was hypothesized that children’s compliance would increase at home and school as CBC-D was implemented. Child compliance was assessed through daily parent and teacher ratings at home and school using Direct Behavior Rating – Single Item Scales (DBR-SIS; Chafouleas, Briesch, Riley-Tillman, Christ, Black, & Kilgus, 2010). The second research question was “How acceptable is CBC-D to parents and teachers?” It was hypothesized that CBC-D would be rated as an acceptable intervention to parents and teachers. Acceptability was assessed using the acceptability factor of the Behavior Intervention Rating Scale (BIRS; Von Brock & Elliott, 1987). The final research question was “What do parents and teachers report about the change in their relationship following CBC-D?” It was hypothesized that parents and teachers would report an immediate and positive change in their perception of the parent-teacher relationship following CBC-D. The
parent-teacher relationship was assessed using the Parent-Teacher Relationship Scale (PTRS; Vickers & Minke, 1995) and analyzed descriptively. Additional context of the BIRS and PTRS scores was provided via contrast of scores found in the current study with those found in previous CBC research that tested its effects when delivered in a traditional (i.e., on-site) format.
Chapter 3: Methods

Setting and Study Context

All child participants were enrolled in rural schools in the Midwestern United States (i.e., Nebraska). For purposes of this study, rural schools are defined by the National Center for Education Statistics’ (NCES, 2013) locale codes as described in Table 3.1. Specifically, schools were identified as rural if they fell into one of four locale code categories: (a) rural remote, (b) rural distant, (c) rural fringe or (d) town remote.

Table 3.1.
Locale Code Definitions

<table>
<thead>
<tr>
<th>Locale Code</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Remote</td>
<td>Census-defined rural territory that is more than 25 miles from an urbanized area and also more than 10 miles from an urban cluster.</td>
</tr>
<tr>
<td>Rural Distant</td>
<td>Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster.</td>
</tr>
<tr>
<td>Rural Fringe</td>
<td>Census-defined rural territory that is less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster.</td>
</tr>
<tr>
<td>Town Remote</td>
<td>Territory inside an urban cluster that is more than 35 miles from an urbanized area.</td>
</tr>
</tbody>
</table>

Note. Definitions are from the National Center for Education Statistics (NCES, 2013).

Despite the potential to enroll participants from across the United States, rural schools in Nebraska provided a homogenous sample required in multiple baseline across participants designs and increased the feasibility of conducting a preliminary test of the efficacy of CBC-D. Furthermore, rural schools in Nebraska are part of a statewide distance education network that has one of the nation’s highest percentages of fiber-connected school districts (96%) and some of the highest bandwidth rates to rural areas.
(40Mbps – 100Mbps). Four children from three schools participated in this study. Two children from School A participated. Demographics of each school are outlined in Table 3.2.

Table 3.2. Participating School Demographics

<table>
<thead>
<tr>
<th></th>
<th>School A</th>
<th>School B</th>
<th>School C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locale Code</td>
<td>Town Remote</td>
<td>Rural Remote</td>
<td>Rural Distant</td>
</tr>
<tr>
<td>Distance from Lincoln</td>
<td>132 miles</td>
<td>122 miles</td>
<td>54 miles</td>
</tr>
<tr>
<td>Grade Span</td>
<td>PK-5</td>
<td>PK-6</td>
<td>PK-6</td>
</tr>
<tr>
<td>Total Students</td>
<td>126</td>
<td>57</td>
<td>128</td>
</tr>
<tr>
<td>Students per Teacher</td>
<td>15.75</td>
<td>7.88</td>
<td>12.19</td>
</tr>
<tr>
<td>Title 1 School</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Percentage of White Students</td>
<td>94%</td>
<td>93%</td>
<td>95%</td>
</tr>
<tr>
<td>Percentage of Male Students</td>
<td>48%</td>
<td>58%</td>
<td>52%</td>
</tr>
<tr>
<td>Percent Eligible for Free/Reduced Meals</td>
<td>29%</td>
<td>47%</td>
<td>45%</td>
</tr>
</tbody>
</table>

*Note. Data are from the National Center for Education Statistics (NCES, 2013).*

The Primary Investigator (PI) and a second graduate student served as consultants and facilitated all CBC-D stages with consultees (i.e., parents and teachers) from the University of Nebraska-Lincoln through WebEx videoconferencing software using a desktop computer with projector. The consultants participated in CBC-D interviews from a private room located within the Nebraska Center for Research on Children, Youth, Families and Schools (CYFS) in Lincoln, Nebraska. Lincoln is classified by the National Center for Education Statistics as a City, Large (i.e., a territory inside an urbanized area and inside a principal city with population of 250,000 or more; NCES, 2013). Parents and
teachers participated through laptop computers at the children’s school. Individualized intervention procedures and video-recorded behavioral observations were implemented in the home and school settings.

**Participants**

**Child Participant Information**

Four children, ages 6-10 years, with compliance concerns in rural Nebraska served as participants in the current study. Pseudonyms were used to represent each child participant and protect their confidentiality. Children were eligible for participation in this study based on teacher-reports of compliance concerns or behavioral needs ratings. Only one child per classroom was allowed to participate. Children with documented evidence (i.e., diagnosis, verification) of a significant developmental or cognitive delay were excluded from this study (e.g., Autism Spectrum Disorders, Mental Handicap).

Pertinent narrative information about each child’s background is represented below. See Table 3.3 for demographic information of each child participant.

<table>
<thead>
<tr>
<th>Child Participant</th>
<th>Gender</th>
<th>Age at start of project</th>
<th>Grade</th>
<th>Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hope</td>
<td>Female</td>
<td>6 years</td>
<td>1st</td>
<td>Bi-racial</td>
</tr>
<tr>
<td>Hugh</td>
<td>Male</td>
<td>10 years</td>
<td>3rd</td>
<td>White</td>
</tr>
<tr>
<td>Devon</td>
<td>Male</td>
<td>7 years</td>
<td>1st</td>
<td>White</td>
</tr>
<tr>
<td>Ryan</td>
<td>Male</td>
<td>7 years</td>
<td>1st</td>
<td>Hispanic</td>
</tr>
</tbody>
</table>

**Hope.** Hope was a 6-year old multi-racial female in the first grade at School A. Hope lived with her biological mother and her mother’s boyfriend and had weekend contact with her biological father. Hope’s mother worked as a licensed clinical social
worker for a Managed Care Company and had an advanced graduate degree. Combined household income was reported between $48,001-$50,000 and Hope was not eligible for free/reduced meals at school. Hope’s mother reported she sometimes used web-based videoconferencing software and was comfortable using the technology. Hope’s reported compliance concern at home was related to difficulty efficiently completing her morning routine and requiring multiple redirects from her mother. Her reported compliance concern at school was related to difficulty following reading group expectations.

**Hugh.** Hugh was a 10-year old White male at School B. At the time of the study, he was in third grade for the second consecutive year after being held back due to insufficient progress. Hugh was also retained in kindergarten. Hugh lived with his adoptive parents and three non-biological siblings. Hugh’s adoptive father worked as a welder and his adoptive mother stayed at home to care for two of Hugh’s non-school age siblings. Both adoptive parents reported having had some college experience but no college degree. Prior to the study, Hugh was diagnosed with Attention-Deficit Hyperactivity Disorder (ADHD) and was taking Focalin XR (20mg) throughout the study. Combined household income was reported between $43,001-$45,000 and Hugh was eligible for free/reduced meals at school. Hugh’s adoptive parents reported never using web-based videoconferencing software and were neither comfortable nor uncomfortable using the technology. Hugh’s reported compliance concern at home was also related to difficulty efficiently completing his morning routine and requiring multiple redirects from his mother. His reported compliance concern at school related to difficulty remaining on-task and responding appropriately to redirects from his teacher during morning seatwork.
**Devon.** Devon was a 7-year old White male in the first grade at School C. He lived with his biological mother and father and had no siblings. Devon’s mother reported she and Devon’s father were divorced but still living together. Devon’s mother worked full time as a Youth Security Specialist. Devon’s father’s job was not reported. Both were reported as having earned a high school diploma as their highest education level. Combined household income was reported at over $50,000 and Devon was not eligible for free/reduced meals at school. Devon’s mother reported rarely using web-based videoconferencing software and was very uncomfortable using the technology. Devon’s reported compliance concern at home was related to difficulty following instructions during dinner and finishing his meal in an appropriate amount of time. His reported compliance concern at school related to difficulty completing work and remaining on-task during writing.

**Ryan.** Ryan was a 7-year old Hispanic male in the first grade at School A. Ryan lived with his biological mother and father and had no siblings. Ryan’s mother worked as a registered nurse and his father worked as a police officer. Ryan’s mother reported having earned a college degree and his father reported some college experience but no degree. Combined household income was reported at over $50,000 and Ryan was not eligible for free/reduced meals at school. Ryan’s mother reported never using web-based videoconferencing software and was neither comfortable nor uncomfortable using the technology. Ryan’s reported compliance concern at home was related to difficulty completing his homework and remaining on-task during homework time. His reported compliance concern at school related to difficulty following instructions and classroom expectations during whole group reading.
Parent Information

Six family members participated in the CBC-D meetings for their respective child: Hope’s mother, Hugh’s adoptive mother and father, Devon’s mother and Ryan’s mother and father. Given the preliminary nature of this study and the need for a homogenous sample, only parents who indicated English as their primary language were recruited for participation. The mean age of all participating parents was 32.5 years.

Teacher Information

Four elementary school teachers participated in the CBC-D meetings for their respective child. All teachers were White females. Hope, Devon and Ryan’s teachers taught first grade and Hugh’s teacher taught a combined 3rd and 4th grade classroom. The average number of students in each classroom was 21.5, with a range of 20 to 23 students.

Hope’s teacher was 25 years old and in her second year of teaching. She reported a college degree as her highest level of education. She also reported never using web-based videoconferencing software but was comfortable using the technology. Hugh’s teacher was 50 years old with more than 20 years of teaching experience. She reported having some graduate coursework as her highest level of education. She also reported rarely using web-based videoconferencing software and was very uncomfortable using the technology.

Devon’s teacher was 56 years old and in her 29th year of teaching. She reported having some graduate coursework as her highest level of education. She also reported never using web-based videoconferencing software and was neither comfortable nor uncomfortable using the technology. Ryan’s teacher was 24 years old and in her first year
of teaching. She reported a college degree as her highest level of education. She also reported rarely using web-based videoconferencing software but was comfortable using the technology.

**Consultant Information**

The Principal Investigator (i.e., PI), a fifth year graduate student in school psychology, and a second graduate student in her fourth year in school psychology served as consultants for this study. The PI was the consultant for Ryan and the other graduate student was the consultant for Hope, Hugh and Devon. The PI was a 30-year old White male. He received his Master’s degree in Counseling Psychology from the University of Missouri and was a doctoral candidate in the School Psychology Program at the University of Nebraska-Lincoln. The PI was responsible for all recruitment of participants. The graduate student was a 28-year old White female. She received her Master’s degree in Educational Psychology from the University of Nebraska-Lincoln and was a doctoral candidate in the School Psychology Program. Each consultant received training in consultation, family, school and child interventions and both were certified CBC consultants (i.e., completed advanced training and supervised practicum experience implementing CBC). The PI reported often using web-based videoconferencing software and was comfortable using the technology. The graduate student reported sometimes using web-based videoconferencing software and was neither comfortable nor uncomfortable using the technology.
Study Variables

Independent Variable

The independent variable in the proposed study was Conjoint Behavioral Consultation via Distance delivery (CBC-D). CBC-D was a modification of traditional CBC wherein CBC is delivered to consultees at a physical distance using web-based videoconferencing technology. CBC is a “strength-based, cross-system problem-solving and decision-making model wherein parents, teachers, and other caregivers or service providers work as partners and share responsibility for promoting positive and consistent outcomes related to a child’s academic, behavioral, and social-emotional development” (Sheridan & Kratochwill, 2008, p. 25). CBC consists of three conjoint interviews across four stages involving a child’s parent(s), teacher and a behavioral consultant. The individualized home- and school-based interventions delivered by the parents and teachers comprised of standard behavioral components and were a second level independent variable.

Dependent Variable

The primary dependent variable in the proposed study was child compliance. Compliance was predetermined as the target behavior for each child to maintain consistency across cases and increase the internal validity of the study. Individual variations in manifestation (e.g., frequency, severity, situational differences) represented unique case information relevant for consultation. Child compliance was defined using an inverse definition of that used for noncompliance in previous research (Roberts & Powers, 1988). Thus, child compliance was defined as a child conforms to a specific request or command issued by an adult within 10 seconds. Secondary outcome variables
assessed were consultee (i.e., parent and teacher) acceptability of CBC-D, consultee report of the parent-teacher relationship and consultee feedback on the experience using web-based videoconferencing technology as a method of consultation delivery.

**Outcome Measures**

**Compliance**

Direct Behavior Ratings (DBR) were used to measure the effect of CBC-D on child compliance. Specifically, Direct Behavior Rating Single Item Scales (DBR-SIS; Chafouleas et al., 2010) were used at home and school to measure daily compliance for each child. DBR-SISs are customized, paper-pencil scales that provide a convenient, reliable method for parents and teachers to track child behavior longitudinally during a target time period (Christ, Riley-Tillman, & Chafouleas, 2009). Parents and teachers rated child compliance daily during a pre-determined target time at home and school (see Table 3.5) on a 10-point scale with anchors ranging from 1 = 0-10% compliance to 10 = 91-100% compliance. Research on DBR-SISs has demonstrated greater interrater consistency with positively defined target behaviors (Christ, Riley-Tillman, Chafouleas, & Jaffery, 2011; Riley-Tillman, Chafouleas, Christ, Briesch, & LeBel, 2009), thus, a positive definition of the target behavior (i.e., compliance instead of noncompliance) was used.

Research on the technical adequacy of DBRs as a reliable progress monitoring or intervention evaluation tool is growing (Briesch et al., 2010; Chafouleas, Riley-Tillman, & Christ, 2009; Christ et al., 2009). Steege and colleagues (2001) reported school staff interobserver agreement of .88 using DBRs to evaluate child behaviors. DBRs have demonstrated that teachers can offer comparable data to those attained through systematic
direct observation (Chafouleas, McDougal, Riley-Tillman, Panahon, & Hilt, 2005; Christ et al., 2009; Riley-Tillman et al., 2008). Furthermore, DBRs as repeated observation ratings are well suited to produce data in a format necessary for graphical visual inspection (Christ et al., 2009). Although the majority of research on DBRs has been conducted on academic engagement and disruptive behavior definitions, the creation of the compliance DBR for this study followed the procedures set forth by Christ and colleagues (2009). Requirements for DBRs include the identification of a clearly defined target setting, the use of an operationalized definition of an observable target behavior and the quantifiable measurement of a consultee’s perception of the behavior’s occurrence (Christ et al., 2009). Compliance has been used in DBR research as a control rating (Chafouleas et al., 2005) and as a screener (Kilgus, Chafouleas, Riley-Tillman, & Welsh, 2012) but no psychometric properties were reported. See Appendix A for a sample DBR.

Acceptability

Consultee acceptability of CBC-D was measured using the acceptability factor of the Behavioral Intervention Rating Scale (BIRS; Von Brock & Elliott, 1987). The acceptability factor of the BIRS consists of 15 items scored on a 6-point Likert-type scale (1 = Strongly Disagree; 6 = Strongly Agree). An independent average response score was calculated for each parent and teacher, with higher scores indicating greater acceptability of CBC-D. The BIRS is considered a valid and reliable instrument for measuring acceptability and has been previously used to assess CBC’s acceptability (Cowan & Sheridan, 2003; Finn & Sladeczek, 2001; Sladeczek et al., 2006). Coefficient alpha scores for parents and teachers on the acceptability factor from a randomized trial of CBC
were .95 and .96, respectively (Sheridan et al., 2012). To provide additional context to the interpretation of social acceptability scores in this study, BIRS ratings of CBC-D were contrasted against preliminary parent and teacher BIRS ratings from a randomized controlled trial of traditional on-site CBC in rural communities. See Appendix B for a copy of the BIRS acceptability scale.

**Parent-Teacher Relationship**

The parent-teacher relationship was measured using the *Parent-Teacher Relationship Scale* (PTRS; Vickers & Minke, 1995). The PTRS consists of 24 items scored on a 5-point Likert-type scale (1 = *Almost Never*; 5 = *Almost Always*). An independent average response score was calculated for each parent and teacher, with higher scores indicating stronger perceived relationships between consultees. Coefficient alpha scores for parents and teachers on the PTRS from a randomized trial of CBC ranged from .93-.94 and .94-.96, respectively (Sheridan et al., 2012). To provide additional context to the interpretation of the parent-teacher relationship scores, PTRS ratings from this study were contrasted against preliminary parent and teacher PTRS ratings from a randomized controlled trial of traditional on-site CBC in rural communities. See Appendix C for a copy of the PTRS.

**Supplementary Measures**

**Videoconferencing Feedback Scale**

Feedback from consultees about the web-based videoconferencing process was measured using the Videoconferencing Feedback Scale (VFS). The VFS is an adaptation of the Telepsychiatry Process Measure (Shore et al., 2008). The original measure from Shore and colleagues (2008) included 28 items measuring four subscales: (a) usability,
(b) patient/provider interaction, (c) cultural competence and (d) satisfaction. The usability, patient/provider interaction and satisfaction subscales were preserved in the VFS measure used in this study. In addition to the removal of the nine items on the cultural competence subscale, another six items were removed from the original measure to reduce the measurement burden on consultees as the VFS was not originally intended to be used as an outcome measure. Items were selected for removal if they were similar to other questions or they were relevant to a medical setting. Additionally, the terms “patient,” “provider” and “video system” were changed to “consultee,” “consultant” and “videoconference” to better align with CBC-D procedures and terms. Furthermore, three open-ended items were added to the VFS to capture qualitative information about the process that may have been missed by the Likert-type questions (i.e., what worked well, what was difficult and what could be changed).

The final VFS measure used in this study consisted of 17 items, 14 of which were Likert-type items scored on a 5-point scale (1 = Negative; 5 = Positive) and 3 open-ended items. Independent average response scores for each subscale (i.e., usability, patient/provider interaction and satisfaction) were calculated after each CBC-D meeting for each parent and teacher, with higher scores indicating a more positive experience using the web-based videoconferencing technology. Given the preliminary nature of using web-based videoconferencing software to implement CBC, the VFS was also used as a formative measure in which feedback from prior CBC-D meetings were applied to improve future meetings. Reliability on the original Telepsychiatry Process Measure was not reported. Given the relative youth of the field of telehealth, quality measures assessing the process are still in development. See Appendix D for a copy of the VFS.
Procedures

Recruitment, Screening, Selection Criteria and Consent

The Principal Investigator contacted rural school principals with whom a relationship with the Nebraska Center for Research on Children, Youth, Families and Schools (CYFS) existed and provided information about the study. School principals were given a description of the project and asked to share the study information with K-3rd grade teachers. Upon verbal consent from principals, a meeting with interested teachers was scheduled to present information about the project. During the meeting, teachers completed informed consent documents and screening measures. Children were eligible for participation in the intervention based on compliance or behavioral needs scores from his or her teacher. Specifically, teachers completed a shortened form of the Response Style Questionnaire (RSQ; Drabick, Strassberg, & Kees, 2001; See Appendix E) and the Behavior Needs Screening Tool (BNST; Glover, Sheridan, Garbacz, & Witte, 2005; See Appendix F) for up to three children with compliance concerns. Only one child per classroom was allowed to participate. Children with documented evidence (i.e., diagnosis, verification) of a significant developmental or cognitive delay were excluded from this study (e.g., Autism Spectrum Disorders, Mental Handicap).

The RSQ is a 58-item questionnaire that assesses a child’s responses to compliance demands. There are eight subscales of the RSQ; however, for the purposes of this study only the Noncompliance Frequency, Overt/Confrontational Noncompliance, Covert/Sneaky Noncompliance and Emotionally Labile Noncompliance subscales were used. The RSQ subscales are measured on a 5-point Likert-type scale (0= Never; 4= Almost Always). Reliability analyses, using the entire RSQ, have shown alpha
coefficients for the four noncompliance subscales ranging from .91-.95 (Drabick et al., 2001).

The BNST is a three-item screening tool assessing teachers’ perceptions of the severity and frequency of child noncompliance as well as teachers’ perceptions of the need for intervention. Noncompliant severity and frequency are measured on a 9-point Likert-type scale (1 = Very Mild; 9 = Very Severe). The perceived need for additional intervention is measured on a 5-point Likert-type scale (1 = No Need; 5 = Significant Need). The BNST has been used previously across two randomized trials as a CBC screener for children with externalizing behavior concerns, including noncompliance (Sheridan, 2010; Sheridan et al., 2012). Inclusionary criteria for child participants were the following:

1. Children demonstrated significant compliance concerns at school. Child noncompliance was measured by teacher ratings on two screening measures, the Response Style Questionnaire (RSQ; Drabick et al., 2001) and the Behavior Needs Screening Tool (BNST; Glover et al., 2005). Children were deemed eligible if they met the criteria for either of the two screening measures. For inclusion based on the RSQ, children were considered eligible with scores above 2.0 on any one of the Noncompliance Frequency, Covert/Sneaky Noncompliance and Emotionally Labile Noncompliance subscales or above 1.0 on the Overt/Confrontational Noncompliance subscale. These criteria are based on empirical examination of differences in RSQ scores for children with and without compliance concerns (i.e., ADHD, oppositional defiant behavior; Johnston, Murray, & Ng, 2007). For inclusion based on the BNST, cutoff criteria based on
previous CBC research (Sheridan et al., 2012) were used: child behavior was rated as 4 or higher for both severity and frequency and 3 or higher on the perceived need for additional intervention.

2. In the event that more than one child in a classroom met the inclusion criteria, one child was randomly selected for participation. This occurred in Ryan’s classroom in School A. Each time, the parents of the initial children randomly selected agreed to participate.

3. Child participants attended a rural school in Nebraska and were in grades kindergarten through third.

4. The parents and teachers of child participants provided voluntary, informed consent for their participation.

5. Child participants provided voluntary, informed assent for their participation in the study.

6. English was the primary language spoken by children, teachers and families.

After the teacher consent meeting, the RSQ and BNST were scored by the Principal Investigator (i.e., PI) for each nominated child and qualifying children were selected. In the case that more than one child was nominated and qualified, children were randomly selected for participation. Teachers also completed the shortened form of the RSQ for one same gender child in the classroom who exhibited noncompliant behaviors typical of children in their grade. These ratings were used to differentiate the children selected for inclusion from typical children within their grade. Table 3.4 shows screening scores for each participating child and their typical classroom peer.
## Table 3.4.
*RSQ and BNST Screening Scores*

<table>
<thead>
<tr>
<th></th>
<th>Noncompliance Frequency(^1)</th>
<th>Covert/Sneaky Noncompliance(^1)</th>
<th>Emotionally Labile Noncompliance(^1)</th>
<th>Overt/Confrontational Noncompliance(^1)</th>
<th>Severity(^2,3)</th>
<th>Frequency(^2,3)</th>
<th>Need for Intervention(^4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hope</td>
<td>1.8</td>
<td>0.9</td>
<td>0.5</td>
<td>0.0</td>
<td>4(^*)</td>
<td>5(^*)</td>
<td>3(^*)</td>
</tr>
<tr>
<td>Peer</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hugh</td>
<td>2.4(^*)</td>
<td>2.4(^*)</td>
<td>1.5</td>
<td>1.1(^*)</td>
<td>7(^*)</td>
<td>7(^*)</td>
<td>4(^*)</td>
</tr>
<tr>
<td>Peer</td>
<td>0.2</td>
<td>0.0</td>
<td>0.5</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Devon</td>
<td>1.6</td>
<td>0.9</td>
<td>2.3(^*)</td>
<td>0.4</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Peer</td>
<td>0.8</td>
<td>0.4</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ryan</td>
<td>2.0</td>
<td>1.6</td>
<td>0.7</td>
<td>0.1</td>
<td>5(^*)</td>
<td>5(^*)</td>
<td>3(^*)</td>
</tr>
<tr>
<td>Peer</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* * indicates the child qualified for participation based on teacher rating.

\(^1\) Screening scores from the Response Style Questionnaire with a range of 0-4 with higher scores representing greater perceived noncompliance concerns.

\(^2\) Screening scores from the Behavior Needs Screening Tool.

\(^3\) Range of scores possible is 1-9 with lower scores representing lower perceived severity or frequency.

\(^4\) Range of scores possible is 1-5 with lower scores representing lower perceived need for intervention.
After a child within a classroom was identified, the child’s parent(s) was contacted by school personnel to obtain parent permission to be contacted by the PI. Once parent’s verbal permission was granted, the PI contacted the parents via telephone and requested the opportunity to meet on-site and discuss the project. Details of the project were shared with the parent(s), including information about the CBC-D process, expectations, risks and benefits, and other informed consent information. Informed consent letters were presented and parents completed them at that time. No parents declined participation at the consent meeting.

Parents also selected a specific target time for which their child most exhibited compliance behavior concerns (e.g., dinner time, morning routine). The selection of target times is generally part of the first CBC interview; however, due to necessary baseline data collection requirements, this was done during the parent consent meeting. In addition to consent materials, parents were provided examples of DBRs and training on their use as well as video cameras and a brief training on how to set up and use the video cameras for video-recorded observations of child behavior. Finally, parents were provided a web-based videoconferencing etiquette document outlining practical methods for optimizing web-based videoconferencing meetings and a trouble-shooting guide of common problems that occur when using web-based videoconferencing. See Appendix G for the videoconferencing etiquette document and Appendix H for the trouble-shooting guide.

All participation was voluntary and participants were free to withdraw at any time without adversely affecting their relationship with the investigators or the University of Nebraska-Lincoln; however, no participants withdrew from this study. Once all parents
and teachers provided consent, web-based videoconferencing technology training was conducted for each participating teacher. The PI met with each teacher at their school and provided training on the use of the web-based videoconferencing software. Teachers were also provided a video conferencing trouble-shooting guide as well as a copy of the web-based videoconferencing etiquette document. Finally, teachers selected a specific target time for which their child most exhibited compliance behavior concerns (e.g., math, reading group) and were provided examples of DBRs and training on their use as well as video cameras and a brief training on how to set up and use the video cameras for video-recorded observations of child behavior.

In total 11 schools and one school district were contacted by the PI via phone and email for participation in this study. Principals at six schools and the superintendent of the school district declined participation due to a perceived lack of need or prior research commitments. Five principals agreed to share project information with their teachers. From those five, only teachers from the three schools used in this study expressed interest. Three teachers from school B indicated interest and one child in each classroom met the inclusion criteria for this study; however, parents of two of the children declined participation. Hugh was the only child from school B that met criteria and parent consent was obtained. At school A, Hope and Ryan’s teachers each completed screening measures for three children. Hope was the only child to meet criteria for the study in her classroom. One child, in addition to Ryan, met criteria for the study in his classroom but was not randomly selected for participation. Devon’s teacher was the only interested teacher in school C and Devon was the only child for which the teacher had concerns.
CBC-D Intervention

CBC-D was implemented through a series of interviews and activities across four stages. The four stages of CBC are: the Conjoint Needs Identification Interview (CNII), Conjoint Needs Analysis Interview (CNAI), Plan Implementation and Conjoint Plan Evaluation Interview (CPEI). In CBC-D, all four stages were conducted using WebEx videoconferencing software. WebEx allowed for documents to be shared on-screen in a split-screen fashion so all parties remain visible while viewing shared documents. Additionally, WebEx produced a video file of each meeting.

The consultants participated from the University of Nebraska-Lincoln through WebEx using a desktop computer and projector with an external webcam. The consultants participated in meetings from a private room located in the Nebraska Center for Research on Children, Youth, Families and Schools (CYFS). Parents and teachers participated through laptop computers in the children’s school. Dual external speakers were provided for parents and teachers to ensure adequate volume and clarity of sound output. Internal microphones within the school laptops and the webcam within CYFS were used to capture sound input. See Appendix I for CBC forms for each interview.

Stage 1: Conjoint Needs Identification Interview (CNII). During the CNII the consultant and consultees: (a) discussed the child’s strengths, (b) reviewed the target behavior definition of compliance, (c) reviewed the previously established target time or setting at home and school when compliance was most concerning, and (d) reviewed the procedures for collecting baseline data using the Direct Behavior Ratings. Target times/settings for each child are presented in Table 3.5. The CNII for each case lasted approximately one hour. Additionally, the consultant conducted a home and school
observation after the first stage of CBC (i.e., CNII) but prior to the second stage (i.e., CNAI). During baseline, the consultant viewed at least one video-recording of home and school during the target times/settings to observe child behavior and provide feedback about the baseline data collection process. These initial observations are consistent with best practices in that they allow the consultant to view each child’s behavior within their natural contexts. An observation was not conducted for Devon’s home setting due to parent discomfort with the home video-recordings.

Table 3.5. *Home and School Target Times*

<table>
<thead>
<tr>
<th></th>
<th>Home Target Time/Setting</th>
<th>School Target Time/Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hope</td>
<td>Weekday morning routine</td>
<td>Reading group</td>
</tr>
<tr>
<td>Hugh</td>
<td>Weekday morning routine</td>
<td>Morning seatwork</td>
</tr>
<tr>
<td>Devon</td>
<td>Dinner</td>
<td>Writing</td>
</tr>
<tr>
<td>Ryan</td>
<td>Homework time</td>
<td>Whole group reading</td>
</tr>
</tbody>
</table>

**Stage 2: Conjoint Needs Analysis Interview (CNAI).** The CNAIs were staggered for each case to fulfill the structure of the multiple baseline across participants design. During the CNAIs, the consultant and consultees: (a) reviewed compliance baseline data across home and school, (b) set home and school goals for the child’s compliance behavior based on baseline data, (c) determined the function of compliance across home and school, and (d) developed an individualized, function-based plan to address child compliance at home and school. Functions were individually determined based on baseline data and anecdotal information provided by consultees. The CNAI for each case lasted approximately one hour.
The *CBC Behavioral Strategies Toolkit* (Sheridan et al., 2012) was used to determine the strategies included in each intervention plan. This *Toolkit* contains evidence-based interventions, organized by function, and includes standardized behavior plans for use with a variety of behaviors, including compliance. All selected components of treatment plans represented empirically supported strategies identified as effective for addressing compliance behavior (Rhode, Jenson, & Reavis, 2010). Consistent with previous CBC research (Sheridan et al., 2012), each intervention included a standardized set of components: (a) a communication plan component (e.g., a home-school note), (b) a motivational component (e.g., rewards menu) and (c) a function-based intervention component targeting the identified function of the child’s compliance (e.g., differential attention used for a child with an attention-seeking function). Particular aspects of the intervention components were individualized for each plan (e.g., the method of sending a home-school note or individualized rewards). A brief description of each child’s identified function and plan components is summarized in Table 3.6.
### Table 3.6
**Summary of Plan Components**

<table>
<thead>
<tr>
<th>Child Participant</th>
<th>Setting</th>
<th>Function</th>
<th>Functional Component</th>
<th>Motivational Component</th>
<th>Home-School Communication Component</th>
</tr>
</thead>
</table>
| Hope              | Home    | Escape   | • Parent provided Hope with a morning routine checklist to increase predictability of expectations  
• Parent used precision commands\(^1\) when giving Hope directions to increase probability that instructions would be followed  
• Goal setting for daily compliance  
• Parent provided verbal praise for completion of each morning routine task  
• Small daily rewards provided for daily goal attainment  
• Larger rewards provided for weekly goal attainment (i.e., daily goal met 3 times during week)  
• Home-school e-mail with Hope’s compliance ratings for homework time and anecdotal evidence (e.g., rewards earned, overall progress) |
|                   | (Morning routine) |          |                       |                        |                                     |
| School            | Escape   |          | • Placed a list of rules for reading group expectations on her desk to increase predictability  
• Daily review of reading group rules to clarify expectations  
• Teacher used precision commands\(^1\) when giving Hope directions to increase probability that instructions would be followed  
• Goal setting for daily compliance  
• Teacher provided verbal praise for compliance  
• Classroom rewards provided for daily goal attainment  
• Home-school e-mail with Hope’s compliance ratings for homework time and anecdotal evidence (e.g., rewards earned, overall progress) |
<p>| (Reading group)   |          |          |                       |                        |                                     |</p>
<table>
<thead>
<tr>
<th>Child Participant</th>
<th>Setting</th>
<th>Function</th>
<th>Functional Component</th>
<th>Motivational Component</th>
<th>Home-School Communication Component</th>
</tr>
</thead>
</table>
| Hugh              | Home (Morning routine) | Escape   | • Parent provided Hugh with a morning routine checklist to increase predictability of expectations  
• Parent set a 30-minute timer to increase Hugh’s interest in morning routine activities | • Goal setting for daily compliance  
• Parent provided verbal praise for compliance  
• Parent ignored arguing and noncompliance  
• Small daily rewards provided for daily goal attainment  
• Larger rewards provided for every 5 days of goal attainment | • Home-school e-mail with Hugh’s compliance ratings for homework time and anecdotal evidence (e.g., rewards earned, overall progress) |
|                   |               | Attention | • Teacher provided verbal praise for compliance  
• Teacher ignored arguing and noncompliance  
• Teacher used differential praise of other students when met with Hugh’s noncompliance  
• Teacher provided a morning checklist of Hugh’s morning tasks | • Goal setting for daily compliance  
• Small daily rewards provided for daily goal attainment  
• Larger rewards provided for every 5 days of goal attainment | • Home-school e-mail with Hugh’s compliance ratings for homework time and anecdotal evidence (e.g., rewards earned, overall progress) |
<table>
<thead>
<tr>
<th>Child Participant</th>
<th>Setting</th>
<th>Function</th>
<th>Functional Component</th>
<th>Motivational Component</th>
<th>Home-School Communication Component</th>
</tr>
</thead>
</table>
| Devon            | Home (Dinner) | Escape   | • Devon was provided with three break cards to use each day when he gets upset during dinner  
• Devon was allowed to take a break during dinner | • Goal setting for daily compliance  
• Parent provided verbal praise for compliance, using a break card appropriately and controlling his emotions  
• Rewards provided for daily goal attainment | • Home-school e-mail with Devon's compliance ratings for homework time and anecdotal evidence (e.g., rewards earned, overall progress) |
| Devon            | School (Writing) | Escape | • Devon was provided with three break cards to use each day when he gets upset during writing  
• Devon was allowed to take a break during writing time |                                                                                       |                                                                                                       |
<table>
<thead>
<tr>
<th>Child Participant</th>
<th>Setting</th>
<th>Function</th>
<th>Functional Component</th>
<th>Motivational Component</th>
<th>Home-School Communication Component</th>
</tr>
</thead>
</table>
| Ryan              | Home (Homework) | Escape   | • Homework time separated into two sections  
    • Ryan allowed to choose which homework activity to start first  
    • A timer was set for each half of homework time  
    • Break was given at the end of the first timer before beginning work on the second homework section | • Goal setting for daily compliance  
    • Parent provided verbal praise for compliance and completion of work during each section  
    • Rewards provided for daily goal attainment | • Home-school e-mail with Ryan's compliance ratings for homework time and anecdotal evidence (e.g., rewards earned, overall progress) |
| School            | Attention (Whole group reading) | Teacher provided verbal praise for compliance  
    • Daily review of whole group rules  
    • Teacher used precision commands¹ when giving Ryan directions | • Goal setting for daily compliance  
    • Rewards provided for daily goal attainment | • Home-school e-mail with Ryan’s compliance ratings for homework time and anecdotal evidence (e.g., rewards earned, overall progress) |

¹Precision commands were defined as any instruction that was a clear, positively stated directive by an adult to a child using a neutral tone while making eye contact with the child. Additionally, the adult must have waited 5 seconds before giving a repeat command.
Stage 3: Plan Implementation. During the plan implementation stage, parents and teachers implemented their respective plans. All intervention plans were manualized to increase treatment integrity of consultee individualized intervention implementation (See Appendix J). The plan implementation stage required one 20 minute meeting in which the consultants worked via distance with consultees to ensure plan steps were being completed as intended. During the Plan Implementation meeting, the consultant reviewed the plan steps and provided direct instruction and opportunities for consultees to practice plan steps and receive feedback via distance. Specific objectives for the consultant and consultees were to (a) review the behavior plan steps, (b) review how each step was to be implemented in the home or classroom, (c) model the use of effective praise and precision commands, as applicable, (d) provide consultees opportunities the use of effective praise and precision commands, as applicable, (e) provide performance feedback, (f) determine situations that may warrant the use of each step, (g) structure the specific steps to be undertaken to incorporate the strategy into typical routines, (h) and troubleshoot with consultees about possible problems with implementation. The Plan Implementation meeting occurred in the same manner as the CBC-D interviews (i.e., via WebEx) and lasted approximately 20 minutes.

Stage 4: Conjoint Plan Evaluation Interview (CPEI). CPEIs occurred two weeks after the CNAI for each case. The consultant and consultees: (a) visually analyzed graphed intervention data relative to baseline data across home and school, (b) determined if goals of consultation were met, and (c) discussed next steps (i.e., continue, modify or terminate the plans across settings). If it was collaboratively determined that child goals were achieved, termination of consultation services occurred and plans for
generalization and maintenance of treatment progress were developed. If continuation or modification of the plans was selected, a second CPEI meeting was scheduled for two weeks following the first CPEI to assure progress toward meeting child goals. The same CPEI procedures detailed above were followed at the second CPEI interview. Modifications to Hugh and Devon’s plans were made at their initial CPEI, and a second CPEI interview occurred two weeks later to assure progress toward meeting their goals. The CPEI interviews lasted approximately 40 minutes.

Data Collection Procedures

Data were collected on child compliance at home and school before and after intervention implementation. Parent and teacher perceptions of CBC-D’s acceptability as an intervention were collected at the conclusion of CBC-D. Parent and teacher perceptions of the parent-teacher relationship were collected before and after CBC-D. Additionally, feedback from parents and teachers about the web-based videoconferencing process was collected following each meeting.

Compliance. Using the Direct Behavior Ratings (DBRs), parents and teachers rated child compliance each day during a pre-determined target time at home and school, during which compliance was identified as problematic. As described above, the DBRs were created to score compliance so higher ratings (e.g., 10) coincided with positive behavior (i.e., greater compliance). These observations produced an estimate of the percentage of time children exhibited compliance on a 10-point Likert-type scale with anchors ranging from $1 = 0$-$10\%\text{ compliance}$ to $10 = 90$-$100\%\text{ compliance}$. Compliance was defined as “a child conforms to a specific request or command issued by an adult within 10 seconds”.
DBR scores were collected each day children engaged in the target setting (e.g., dinner, morning seatwork) during baseline and intervention phases. Parents and teachers each completed an average of 5 DBRs per week. Some variation in the number of ratings occurred due to changes in schedule (e.g., school assembly), absences (e.g., child illness) and other naturally occurring situations. With the exception of Devon’s mother, the majority of daily DBR data were collected via emails to the Principal Investigator (i.e., PI). Devon’s mother did not use email and instead reported scores to the PI through text messaging. Parents and teachers were contacted to complete DBRs by the PI via phone or email prompts if data were not received by the end of each day. Parents and teachers were trained in the use of DBR using previously established training procedures (Kilgus et al., 2012). Training consisted of the PI providing parents and teachers with an example DBR, explaining the specific details of the compliance definition, explained how and when to make their ratings and provided DBR-SIS instructional sheets (Kilgus et al., 2012).

To assess interrater agreement of parent and teacher DBR ratings, school and home videotaped observations occurred for each case, with the exception of Devon’s home DBR data for which video-recording did not occur due to his parents’ discomfort with the home video-recording process. Classroom and home videotaped observations took place during the same target times that parents and teachers completed DBRs. An average of two recordings were randomly scheduled each week by the PI. Parents and teachers were provided with a video camera and asked to manually turn on and off the camera for all observations. After the observations were completed, parents and teachers mailed all video-recordings to the PI in pre-paid, pre-addressed envelopes. Video
cameras were placed in an area of the classroom and home that was not disruptive to the environment. Cameras were placed close enough to capture audio of the child and parent/teacher using the internal microphone, yet in a location that did not draw explicit attention to the child being observed. No audio complications were reported. Excluding Devon at home, video-recordings were collected for 46% of all parent- and teacher-reported DBR data.

Video-recordings were coded using a trained, independent observer. The independent coder, trained in DBR procedures by the PI, coded compliance at home and school for 100% (n= 126) of the video-recordings via the same DBR procedures used by parents and teachers. Interrater agreement was confirmed if a parent or teacher DBR rating was within one contiguous rating of the independent observer’s rating of the same time period. Of the 126 video-recordings only 69 showed interrater agreement. Overall interrater agreement of DBR ratings was calculated by dividing the number of DBR agreements (n= 69) by the total number of video-recorded observations (n= 126). DBR interrater agreement was low for both parents (49%) and teachers (59%) with an overall average interrater agreement of (55%). Traditionally, interrater agreement is deemed acceptable at 85% or above meaning parents and teachers in this study were below that criterion. Parents and teachers were provided feedback regarding the low interrater agreement numbers and retrained by the PI. Specifically, the PI reviewed the procedures and target definition, reemphasized the importance of data accuracy and discussed possible solutions for addressing the lack of interrater agreement (i.e., tracking total commands and compliances). The feedback to parents and teachers occurred as soon as the PI became aware of the pattern of low compliance interrater agreement (i.e.,
immediately following Devon’s entrance into the intervention stage); however, direct observation ratings were not able to be coded immediately as the data were obtained due to time and cost demands. Consequently, data collection was completed before effects of the retraining could be assessed and additional procedures to improve interrater agreement were not conducted. Interrater agreement scores remained low following the retraining.

To ensure the data coder was reliably coding compliance on the video-recordings, the PI coded 34% of the video-recording observations (n= 44) for data coder reliability. A minimum of 20% is recommended for coding reliability within small n research designs (Kratochwill et al., 2010); however, given the low interrater agreement ratings between consultees and the video recording data coder, the percentage was increased to 34% to ensure the data coder was accurately measuring compliance. Data coder reliability was assessed using the same procedures described above and the data coder reliability was .91, indicating the data coder was reliably coding compliance based on the definition used in this study.

**Acceptability.** The acceptability factor of the *Behavioral Intervention Rating Scale* (BIRS; Von Brock & Elliott, 1987) was used to descriptively assess the degree to which consultees found CBC-D to be an acceptable intervention. Parents and teachers completed the measure at the conclusion of CBC-D and mailed the scales to the Principal Investigator. Administration took 5 to 10 minutes.

**Parent-Teacher Relationship.** The *Parent-Teacher Relationship Scale* (PTRS; Vickers & Minke, 1995) was used to descriptively assess parent and teacher perceptions of their relationship with one another. Parents and teachers individually completed the
PTRS scale prior to the first stage of CBC (i.e., CNII) and again at the conclusion of CBC-D and mailed the measures to the Principal Investigator. Administration took 5 to 10 minutes.

**Videoconferencing Feedback.** The *Videoconferencing Feedback Scale* (VFS) was used as a formative measure of consultee feedback about the web-based videoconferencing procedures. Parents and teachers individually completed hard copies of the VFS after each CBC-D interview and mailed them to the Principal Investigator. Administration took 5 to 10 minutes. Information was used to assess consultee’s perception of using web-based videoconferencing to implement CBC and to tailor future web-based videoconferencing sessions to improve the quality of the web-based videoconferencing experience for consultees. Summative mean ratings of the VFS were conducted ad hoc.

**Protection of Sensitive and Confidential Information**

All data obtained throughout the course of the study were de-identified and given an ID number. All case data, home and school video observations and forms (e.g., CBC-D video files, interview notes, behavioral observation videos, direct behavior ratings) were stored in a securely locked cabinet in the Principal Investigator’s office or on a secured shared drive. University of Nebraska-Lincoln Institutional Review Board (IRB) approval was obtained, and guidelines were followed for informed consent procedures, intervention implementation, data storage, security and retention.

The use of web-based videoconferencing involved some additional risk to participants in that the streaming video files could be intercepted by people not affiliated with the project; however, the web-based videoconferencing program (i.e., WebEx) is a
secured program approved by University of Nebraska-Lincoln IRB. All communications through WebEx are secured using a 128-bit Secure Socket Layer version 3 (SSLv3) encryption. The project only used one master login account in which only project personnel had access. Parents and teachers did not have their own account and no personal information about the participants was entered into the WebEx system. Video files were identified by participant ID number only and stored on a secured shared drive. Only members of the research team (e.g., the consultants, data coders) had access to the video files. To secure confidentiality of participants during each stage of CBC-D, consultants participated in the web-based videoconferencing from a private room located in the Nebraska Center for Research on Children, Youth, Families and Schools on the UNL campus.

**Treatment Integrity**

The extent to which interventions are implemented with integrity is an important issue in consultation research (Sheridan, Swanger-Gagné, Welch, Kwon, & Garbacz, 2009). Treatment integrity was measured for the implementation of CBC-D by consultants and the implementation of individualized interventions by consultees. Three treatment integrity dimensions recommended by Dane and Schneider (1998) were assessed for CBC-D implementation in this study: adherence, quality and dosage. Only adherence was assessed for consultee’s implantation of individualized interventions. Adherence refers to the degree to which an intervention is implemented as it was intended. The quality dimension refers to the how well intervention components are delivered by an intervention agent. Adherence and quality are related but independent dimensions of treatment integrity. For instance, an intervention agent may implement all
steps of an intervention but do so with poor quality (Gresham, 2009). Dosage refers to the strength, amount or duration of intervention provided.

To measure CBC-D treatment integrity, video files of each of the three CBC-D meetings (i.e., CNII, CNAI, CPEI) for each case were coded for adherence, quality and dosage by independent, trained coders using CBC Fidelity Measure Matrices (Sheridan, 2012). CBC Fidelity Measure Matrices assess the percentage of objectives completed for each stage as well as the quality with which each objective was accomplished (i.e., 0 = not effective; 1 = moderately effective; 2 = highly effective). The CBC Fidelity Measure Matrices measures have undergone extensive development work in a current randomized controlled trial (Sheridan, 2010). Intervention dosage was reported based on total amount of time consultees were exposed to the three CBC-D interviews. See Appendix K for an example of the CBC Fidelity Measure Matrices. Thirty-six percent of interviews were double coded to evaluate interrater reliability. Results of the interrater reliability were high with 98% exact agreement between raters.

To measure case-specific adherence of behavioral intervention implementation at home and school, consultee self-report protocols and permanent products were collected (Sheridan et al., 2009). Home and school intervention plan steps were clearly defined in objective terms on a Plan Summary Form (PSF) for each case. Consultees self-reported their adherence to intervention plan steps by completing the PSF each day the intervention was implemented in their respective setting. Consultees recorded either a “Yes” (if they completed the step), “No” (if they did not complete the step) or “N/A” (not applicable; in situations where the step could not be implemented due to specific conditions such as a child’s absence). Adherence was calculated as a percentage of steps
completed each day (i.e., number of steps completed divided by the number of applicable steps). The use of self-report data reduces the need for independent observers and can provide a source of implementation performance feedback to consultees through their self-monitoring of implementation (Sheridan et al., 2009); however, self-reports can lead to an overestimation of adherence (Wickstrom, Jones, LaFleur, & Witt, 1998).

To supplement the measurement of individualized intervention treatment integrity, permanent products were also collected. Permanent products, in the form of home-school notes, served as a proxy estimate of consultee adherence and allowed consultants to check the consistency of consultee self-reports of intervention implementation. Not all intervention steps were able to be measured using home-school notes; however, each home-school note allowed for a recording of the child’s daily goal attainment, receipt of reward and home-school note completion.

**Data Analysis**

**Research Design**

A concurrent multiple baseline across participants design was used to evaluate the efficacy of CBC-D on improving child compliance. Concurrent multiple baseline designs are optimal for small n research in applied settings because of their ability to control for threats to internal validity (e.g., maturation, history effects; Kazdin, 2011). In multiple baseline designs, the intervention is implemented for participants at different time points. Experimental control is demonstrated when behavior change occurs only when the intervention is implemented for each participant across the staggered baselines.

For this study, random assignment was used to determine the order in which CBC-D was implemented with each of the four participants. This design format meets the
criteria for establishing evidence standards of small n designs (Kratochwill et al., 2010) by allowing at least three attempts to demonstrate intervention effects at three different time points. Additionally, in accordance with the evidence standards of small n designs, a minimum of five data points were collected within all phases and 46% of all DBR-SIS ratings were evaluated for interrater agreement using a trained independent coder. As an exception, no home interrater agreement data were collected for Devon because his mother opted not to record in their home. The study was completed over the course of 13 weeks.

**Baseline.** During baseline, data collection involved daily parent and teacher ratings of child compliance using DBRs. Conjoint Needs Analysis Interviews (i.e., the second stage of CBC) and intervention implementation were scheduled after three consecutive non-ascending school baseline data points. Additionally, it was planned to achieve stability in parent and teacher daily reports of baseline data prior to implementing intervention. Stability was calculated by dividing the baseline mean by 2 and adding and subtracting that quotient from the original mean. If all data points fell within the range of the mean plus or minus the quotient baseline was considered stable. Data were deemed variable if any baseline data point fell outside of the range. For example, if the baseline data mean was 7 all data points would need to fall within the range of 10.5 and 3.5 (i.e., 7+/-(7/2)). All parent and teacher daily reports of baseline data were stable prior to intervention with the exception of Hugh’s home data, which were highly variable. Given that more than three weeks of data were collected for Hugh and his rate of problem behavior was high, it was determined that reaching stability in baseline was not likely and it was deemed ethically responsible to begin intervention.
**Intervention.** During the intervention phase, CBC-D was implemented in a staggered fashion for each participant. Parents and teachers continued daily data collection at home and school, respectively.

**Data Analytic Plan**

Analyses for this study were conducted using several methods, including visual inspection, statistical aids and descriptive statistics.

**Visual inspection.** Visual inspection was used to determine the efficacy of CBC-D on compliance across home and school. Compliance data for each child were plotted on two separate line graphs with one graph representing school compliance data and the other representing home compliance data. The x-axis on the graphs corresponds with the date of assessment. The y-axis displayed the parent or teacher DBR rating of compliance.

Visual inspection entailed comparing baseline and intervention data to see if changes in behavior corresponded with the intervention implementation for each participant across home and school settings. Changes in level, trend, immediacy of effects, overlapping data and consistency of data patterns across similar phases were evaluated for all children at home and school (Kazdin, 2011). Parent and teacher DBR data were collected for each participant on the day of each phase shift to ensure that the multiple baseline design standards were met (Kazdin, 2011; Kratochwill et al., 2010). Attempts were made to secure video-recordings for each child across home and school on the day of each phase shift; however, this did not consistently occur. Within the multiple baseline design, experimental control was established if positive changes in a participant’s compliance behavior occurred only at times that the intervention was
implemented and the pattern was established for at least three of the four participants (Kazdin, 2011; Kratochwill et al., 2010).

**Statistical aids.** Two statistical aids were used to support the use of visual inspection: the Percentage of All Nonoverlapping Data (PAND; Parker, Hagan-Burke, & Vannest, 2007) and the Conservative Dual Criterion (CDC; Fisher, Kelley, & Lomas, 2003). These analyses were applied to both parent and teacher ratings of compliance and the direct observation of compliance through video-recordings.

**Percentage of all nonoverlapping data (PAND).** PAND was calculated from the DBRs of each child’s compliance across both home and school settings. PAND was calculated by adding the number of overlapping data points across baseline and intervention phases, dividing that number by the total number of data points and then multiplying by 100 (Parker et al., 2007). These procedures are typical for determining experimental control in small n research designs and provide further confidence in the results (Kazdin, 2011). Larger PAND scores indicate stronger confidence for the effects of CBC-D on compliance.

**Conservative dual criterion (CDC).** One limitation of PAND is that scores do not reflect the meaningfulness of change (Parker et al., 2007). That is, a PAND score of 100% can be achieved even if there is little change in behavior across phases. To account for this potential limitation, the CDC (Fisher et al., 2003) was used to provide a complete and more conservative method for evaluating efficacy. The CDC method helps visual analysts detect intervention effects by providing a conservative and standardized criterion for analyzing effects between baseline and intervention phases. The CDC method adds two criterion lines to visual analysis graphs that are displayed across phases: (1) an
extension of the baseline mean line across the treatment phase and (2) a split-middle line as an estimate of a least squares linear regression line of the baseline data. To decrease the chances of Type I errors, the two criterion lines in the CDC method are raised (or lowered depending on the predicted direction of behavior change) by 0.25 standard deviations of the baseline data (Fisher et al., 2003).

Intervention effects are demonstrated when a pre-determined number of intervention data points are above (or below) the two lines. Based on the number of data points in the treatment condition, a binomial test determines how many data points need to fall above both criterion lines for an effect of the independent variable to be detected (Barlow et al., 2009; Stewart, Carr, Brandt, & McHenry, 2007). The CDC method can reliably increase accuracy in correctly interpreting the results of small n designs (Stewart et al., 2007) and has outperformed other statistical procedures (Fisher et al., 2003).

**Descriptive statistics.** The BIRS acceptability factor and PTRS yielded total mean scores and were analyzed descriptively. Total mean scores were calculated by adding the responses and dividing by the total number of questions (i.e., 15 and 24, respectively). Higher mean scores indicate greater consultee acceptability of CBC-D or a stronger parent-teacher relationship. Acceptability and parent-teacher relationship scores were collected independently from each parent and teacher. PTRS total mean score differences between baseline and post-treatment were reported for each parent and teacher. Finally, means for the parent and teacher acceptability and the parent-teacher relationship measures were created by summing scores and dividing by the number of participants. These overall means were used to provide context for this study’s scores by
comparing parent and teacher means for each measure to parent and teacher means from an on-going randomized trial of CBC in rural communities (Sheridan, 2010).

The Videoconferencing Feedback Scale (VFS) was used as a formative and summative measure of consultee feedback about the web-based videoconferencing procedures. Parent and teacher mean scores for each interview were produced and anecdotal information was summarized to present common themes of feedback from consultees. Additionally, information was used to tailor future web-based videoconferencing sessions to improve the quality of the web-based videoconferencing experience for consultees (e.g., adjustments to audio, consultant’s proximity to camera during meetings) following each interview.
Chapter 4: Results

This chapter summarizes child compliance outcome data across home and school settings for each participating child. Social validity data are then summarized, followed by parent-teacher relationship data. Lastly, perceptions of the web-based videoconferencing procedures and treatment integrity data are described.

Compliance

The efficacy of CBC-D for parents and teachers of children demonstrating difficulties with compliance was evaluated via a multiple baseline across participants design for child compliance behaviors at home and school. Compliance was assessed via parent and teacher daily reports of compliance during the target time/setting using Direct Behavior Ratings (DBRs). Compliance behaviors were analyzed using comparison of means, percentage of all nonoverlapping data (PAND), visual inspection and structured criteria via the conservative dual criterion (CDC). Compliance was defined as conforming to a specific request or command issued by an adult within 10 seconds.

Parent and Teacher Daily Reports of Child Compliance

Means and standard deviations for parent and teacher daily reports of each child’s compliance at home and school are summarized in Table 4.1. Visual analysis indicators of improvements in parent and teacher daily reported child compliance at home and school across baseline and treatment phases are summarized in Table 4.2. These indicators include immediacy of change (i.e., positive or negative value between last baseline data point and first treatment data point), change in trend (i.e., positive change in trend from baseline to treatment), change in level (i.e., increased values of most data points for compliance behavior), and structured criteria for visual inspection using CDC.
and PAND. Additionally, Figures 4.1 and 4.2 display all parent and teacher daily reported compliance data at home and school, respectively, within a multiple baseline design.

Table 4.1.

Parent and Teacher Daily Report of Child Compliance at Home and School across Participants

<table>
<thead>
<tr>
<th>Child (Setting)</th>
<th>Baseline Mean(SD)</th>
<th>Treatment Mean(SD)</th>
<th>Improved Mean Change (Baseline to Treatment)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hope (Home)</td>
<td>8.00 (1.00)</td>
<td>9.09 (0.59)</td>
<td>+</td>
</tr>
<tr>
<td>Hope (School)</td>
<td>7.33 (0.52)</td>
<td>9.47 (0.63)</td>
<td>+</td>
</tr>
<tr>
<td>Hugh (Home)</td>
<td>3.13 (2.70)</td>
<td>4.97 (3.79)</td>
<td>+</td>
</tr>
<tr>
<td>Hugh (School)</td>
<td>8.36 (1.43)</td>
<td>8.48 (1.55)</td>
<td>+</td>
</tr>
<tr>
<td>Devon (Home)</td>
<td>7.13 (1.23)</td>
<td>8.85 (0.51)</td>
<td>+</td>
</tr>
<tr>
<td>Devon (School)</td>
<td>7.00 (1.85)</td>
<td>7.92 (1.22)</td>
<td>+</td>
</tr>
<tr>
<td>Ryan (Home)</td>
<td>7.20 (1.27)</td>
<td>8.93 (0.96)</td>
<td>+</td>
</tr>
<tr>
<td>Ryan (School)</td>
<td>8.30 (0.87)</td>
<td>9.22 (1.06)</td>
<td>+</td>
</tr>
</tbody>
</table>

1 Range of scores possible is 1-10 with lower scores indicating lower child compliance. + = Improved mean change from baseline to treatment observed.
Table 4.2.
*Measures of Treatment Effectiveness of CBC-D on Child Compliance at Home and School*

<table>
<thead>
<tr>
<th>Child (Setting)</th>
<th>Immediacy</th>
<th>Trend Change</th>
<th>Level Change</th>
<th>Conservative Dual Criterion (CDC) Confirmed Effect</th>
<th>Percentage of All Nonoverlapping Data (PAND)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hope (Home)</td>
<td>+</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>22%</td>
</tr>
<tr>
<td>Hope (School)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>93%</td>
</tr>
<tr>
<td>Hugh (Home)</td>
<td>+</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>19%</td>
</tr>
<tr>
<td>Hugh (School)</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>0%</td>
</tr>
<tr>
<td>Devon (Home)</td>
<td>+</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>3%</td>
</tr>
<tr>
<td>Devon (School)</td>
<td>_</td>
<td>+</td>
<td>_</td>
<td>_</td>
<td>0%</td>
</tr>
<tr>
<td>Ryan (Home)</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>33%</td>
</tr>
<tr>
<td>Ryan (School)</td>
<td>+</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>0%</td>
</tr>
</tbody>
</table>

+ = Treatment effectiveness observed.
- = Treatment effectiveness not observed.

CDC: Mean and trend lines are calculated and raised 0.25 standard deviations. Based on the binominal sampling distribution, a specific number of intervention phase data points were required to fall above the mean and trend lines to exceed chance and determine a treatment effect.

PAND: The percentage of all nonoverlapping data points between baseline and treatment data.
Figure 4.1. Multiple baseline graph of parent daily reported compliance at home across participants.
Figure 4.2. Multiple baseline graph of teacher daily reported compliance at school across participants.
Hope. During Hope’s morning routine at home, her mother reported a baseline average DBR rating of 8 ($SD= 1$), which is defined as 70 to 79% compliance. Baseline data were stable, with a DBR rating range of 7 to 9, and a slightly increasing trend. During the treatment phase, the average was 9.09 ($SD= 0.59$), meaning that the average percentage of compliance was between 80 and 89%. These data indicated a perceived increase in parent daily report percentage of compliance by Hope’s mother from baseline to treatment. Treatment data were also stable, with a range of 8 to 10; however, the treatment data had a slightly decreasing trend suggesting that behavior was reverting back to baseline levels at the end of intervention. PAND was low, at 22%, due to a ceiling effect at baseline (i.e., high scores at baseline). Visual inspection of immediacy, trend and level change were conflicting. An immediate change after intervention was present, as the last baseline DBR rating was 7 and the first treatment rating was 10; however, due to the high baseline data, level and trend changes were not present. Visual inspection using CDC did not substantiate a treatment effect on compliance during morning routine. Overall, these data indicated no clear treatment effect on Hope’s compliance at home.

During Hope’s reading group time at school, her teacher reported a baseline average rating of 7.33 ($SD= 0.52$), which is defined as 60 to 69% compliance. Baseline data were stable with a range of 7 to 8, and a slightly decreasing trend. During treatment, the average was 9.47 ($SD= 0.63$), meaning that the average percentage of compliance was between 80 and 89%. These data were stable, with a range of 8 to 10, and a slightly increasing trend, indicating a perceived increase in the average rating of compliance at school from baseline to treatment not predicted by the baseline data. PAND was high, at 93%, or 43% beyond chance level. Visual inspection indicated a change in immediacy,
trend and level of data between baseline and treatment phases. Visual inspection using CDC confirmed a treatment effect. Overall, these data demonstrate a clear treatment effect on Hope’s compliance at school.

**Hugh.** During Hugh’s morning routine at home, his mother reported a baseline average of 3.13 ($SD= 2.70$), which is defined as 20 to 29% compliance. Baseline data were highly variable, with a range of 1 to 9, and had a decreasing trend. During the treatment phase, the average was 4.97 ($SD= 3.79$), meaning that the average percentage of compliance increased to between 30 and 39%. These data were also variable, with a range of 1 to 10, and a decreasing trend, but indicated an overall perceived increase in the average rating of compliance at home from baseline to treatment. At 19%, PAND analysis did not support a treatment effect. Visual inspection indicated an immediate change in compliance during the first week of treatment; however, visual inspection of a change in level and trend and the CDC provided no evidence of a treatment effect. This is likely due to the high variability seen during both phases. Overall, these data indicated no clear treatment effect on Hugh’s compliance at home during his morning routine.

During Hugh’s morning seatwork at school, his teacher reported a baseline average of 8.36 ($SD= 1.43$), which is defined as 70 to 79% compliance. Baseline data were stable, with a range of 6 to 10, and an increasing trend. During treatment, the average increased slightly to 8.48 ($SD= 1.55$), meaning that the average percentage of compliance was also between 70 and 79%. These data were also stable, with a range of 5 to 10, and an increasing trend, indicating a perceived marginal increase in average compliance rating from baseline to treatment; however, the increasing trend at baseline suggested the potential for a compliance increase during the treatment phase regardless of
the introduction of an intervention. PAND was low, at 0%, because Hugh received a top score of 10 during baseline, eliminating the possibility of PAND exceeding 0%. Visual inspection indicated no clear treatment effects for immediacy, trend, level or CDC. Overall, these data indicated no treatment effect on Hugh’s compliance at school during his morning seatwork.

**Devon.** During dinner at home, Devon’s mother reported a baseline average of 7.13 ($SD=1.23$), which is defined as 60 to 69% compliance. Baseline data were stable, with a range of 4 to 9, and an increasing trend. During the treatment phase, the average was 8.85 ($SD=0.51$), meaning that the average percentage of compliance was between 70 and 79%. These data indicated a perceived increase in parent daily report of percentage of compliance from baseline to treatment. Treatment data were also stable, with a range of 7 to 10, and a slightly decreasing trend. PAND was low, at 3%, due to a ceiling effect at baseline. Visual inspection of immediacy, trend and level change were conflicting. An immediate change after intervention was present, as the last baseline DBR rating was 9 and the first treatment rating was 10; however, level and trend changes were not present. Visual inspection using CDC did not substantiate a treatment effect on compliance during dinner. Overall, these data indicated no clear treatment effect on Devon’s compliance at home.

During Devon’s writing time at school, his teacher reported a baseline average of 7 ($SD=1.85$), which is defined as 60 to 69% compliance. Baseline data were stable, with a range of 4 to 10, and a decreasing trend. During treatment, the average was 7.92 ($SD=1.22$), meaning that the average percentage of compliance was also between 60 and 69%. These data were also stable, with a range of 6 to 10, and had a slightly increasing trend,
indicating a perceived marginal increase in average compliance from baseline to
treatment that would not have been predicted based on the trend at baseline. PAND was
low, at 0%, because Devon received a top score of 10 during baseline eliminating the
possibility of PAND exceeding 0%. Visual inspection indicated no clear treatment effects
for immediacy, level or CDC; however, there was a positive shift in trend from baseline
to treatment. Overall, these data provide no evidence of a clear treatment effect on
Devon’s compliance at school during his writing time.

**Ryan.** During Ryan’s homework time at home, his mother reported a baseline
average of 7.20 (SD= 1.27), which is defined as 60 to 69% compliance. Baseline data
were stable, with a range of 5 to 9, and an increasing trend. During treatment, the average
was 8.93 (SD= 0.96), meaning that the average percentage of compliance was between
70 and 79%. These data were also stable, with a range of 7 to 10, and had a slightly
increasing trend, indicating a perceived increase in average homework compliance from
baseline to treatment; however, the increasing trend at baseline predicted a compliance
increase during the treatment phase regardless of the introduction of an intervention.
PAND was low, at 33%, due to a baseline ceiling effect. Visual inspection indicated no
clear treatment effects for immediacy, trend, level or CDC. Overall, these data indicated
no treatment effect on Ryan’s compliance at home during his homework time.

During Ryan’s whole group reading at school, his teacher reported a baseline
average of 8.30 (SD= 0.87), which is defined as 70 to 79% compliance. Baseline data
were stable, with a range of 7 to 10, and a slightly increasing trend. During the treatment
phase, the average was 9.22 (SD= 1.06), meaning that the average percentage of
compliance increased to between 80 and 89%. These data were also were stable, with a
range of 7 to 10, and had a slightly increasing trend, indicating a perceived increase in the average rating of compliance at school from baseline to treatment; however, the increasing trend at baseline predicted a compliance increase during the treatment phase regardless of the introduction of an intervention. PAND was low, at 0%, because Ryan received a maximum score of 10 during baseline, eliminating the possibility of PAND exceeding 0%. Visual inspection indicated an immediate change in compliance; however, visual inspection of changes in trend and level and the CDC provided no evidence of a treatment effect. Overall, these data indicated no clear treatment effect on Ryan’s compliance at school during whole group reading.

**Summary of parent and teacher daily report of child compliance.** A treatment effect was demonstrated only for Hope’s compliance at school as there were positive changes in mean, immediacy, trend and level and CDC and PAND results were above chance for a treatment effect. Effects on compliance for all other participants and Hope at home were mixed. Positive mean changes were evident across participants and settings, and immediacy changes occurred for Hope at home and school; Hugh and Devon at home; and Ryan at school. All remaining indicators did not show evidence for a treatment effect. Overall, parent and teacher daily report of compliance data do not provide support for the efficacy of CBC-D for improving child compliance concerns at home or school as measured in this study. However, low DBR interrater agreement and sample and measurement limitations (e.g., baseline ceiling effects) raise significant questions about the ability to draw firm conclusions about the efficacy of CBC-D on child compliance. Additionally, it is possible that the selected sample did not differ in their rates of compliance from typical peers on the DBR as DBR data were not collected
for matched peers. This may explain the high compliance baseline ratings for the selected sample.

**Acceptability**

Parent and teacher perceptions of the acceptability of CBC-D were assessed after the completion of CBC-D. Parents and teachers completed the Acceptability factor of the BIRS (Von Brock & Elliott, 1987). Mean item ratings for the Acceptability factor of the BIRS are summarized in Table 4.3. Acceptability ratings were reported as acceptable or highly acceptable by all consultees, with scores ranging from 4.20 to 5.80.

Table 4.3.

<table>
<thead>
<tr>
<th>BIRS Social Validity Outcomes</th>
<th>Acceptability Mean Score¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child (Reporter)</td>
<td></td>
</tr>
<tr>
<td>Hope (Parent)</td>
<td>4.73</td>
</tr>
<tr>
<td>Hope (Teacher)</td>
<td>4.47</td>
</tr>
<tr>
<td>Hugh (Parent)</td>
<td>5.53</td>
</tr>
<tr>
<td>Hugh (Teacher)</td>
<td>5.07</td>
</tr>
<tr>
<td>Devon (Parent)</td>
<td>4.20</td>
</tr>
<tr>
<td>Devon (Teacher)</td>
<td>4.87</td>
</tr>
<tr>
<td>Ryan (Parent)</td>
<td>4.87</td>
</tr>
<tr>
<td>Ryan (Teacher)</td>
<td>5.80</td>
</tr>
</tbody>
</table>

¹ Range of scores possible is 1-6, with lower scores representing lower perceptions of acceptability.

Furthermore, a combined CBC-D mean score of the Acceptability factor of the BIRS was calculated for parents and teachers. These data are used as a comparison of parent and teacher ratings of CBC-D, with data collected from the first four years of a
randomized controlled trial assessing the acceptability of traditional CBC within rural communities (Sheridan, 2010). Teacher mean ratings of the Acceptability factor of the BIRS are similar across studies, with ratings for traditional CBC being slightly higher (+.04). Teacher acceptability ratings of CBC-D are also consistent with data from a randomized trial of CBC in an urban setting (Sheridan et al., 2012). This indicates teachers in rural communities rate CBC-D’s acceptability comparably to that of traditional CBC. Parent ratings for CBC-D were lower than traditional CBC by 0.24, indicating that parents from rural communities may have a preference for on-site CBC; however, parent ratings across studies indicated positive acceptability. Acceptability mean ratings across studies are presented in Table 4.4.

Table 4.4. Acceptability Means across Studies

<table>
<thead>
<tr>
<th>CBC-D Acceptability Mean(SD)¹</th>
<th>Traditional CBC in Rural Communities Mean(SD)¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
<td>4.83 (.55)</td>
</tr>
<tr>
<td>Teacher</td>
<td>5.05 (.56)</td>
</tr>
</tbody>
</table>

¹ Range of scores possible is 1-6, with lower scores representing lower perceptions of acceptability.

Parent-Teacher Relationship

The parent-teacher relationship was assessed using the Parent-Teacher Relationship Scale (PTRS; Vickers & Minke, 1995), which yields a total mean score of parent and teacher perceptions of their relationship with the other. The PTRS was administered to parents and teachers at baseline and at the conclusion of CBC-D. Increases from baseline to treatment were interpreted as an improvement in the perceived relationship. All PTRS ratings increased from baseline to treatment except for Hugh’s parent ratings, with Hope’s mother’s rating showing the largest improvement. Scores
indicate that all four teachers and three of the four parents perceived an improvement in their relationship with their consultee counterpart following their participation in CBC-D. Parent-teacher relationship baseline and treatment scores for each consultee pair, as well as the direction and amount of change over the course of the intervention, are displayed below in Table 4.5.

Table 4.5.
Pre- and Post-Test Parent-Teacher Relationship Scores

<table>
<thead>
<tr>
<th>Child (Reporter)</th>
<th>Pre-CBC-D Mean¹</th>
<th>Post-CBC-D Mean¹</th>
<th>Change Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hope (Parent)</td>
<td>3.63</td>
<td>4.96</td>
<td>+1.33</td>
</tr>
<tr>
<td>Hope (Teacher)</td>
<td>4.63</td>
<td>4.80</td>
<td>+.17</td>
</tr>
<tr>
<td>Hugh (Parent)</td>
<td>4.83</td>
<td>4.58</td>
<td>-.25</td>
</tr>
<tr>
<td>Hugh (Teacher)</td>
<td>3.96</td>
<td>4.42</td>
<td>+.46</td>
</tr>
<tr>
<td>Devon (Parent)</td>
<td>4.63</td>
<td>4.96</td>
<td>+.33</td>
</tr>
<tr>
<td>Devon (Teacher)</td>
<td>4.42</td>
<td>4.46</td>
<td>+.04</td>
</tr>
<tr>
<td>Ryan (Parent)</td>
<td>4.54</td>
<td>4.96</td>
<td>+.42</td>
</tr>
<tr>
<td>Ryan (Teacher)</td>
<td>3.83</td>
<td>4.38</td>
<td>+.55</td>
</tr>
</tbody>
</table>

¹Range of scores possible is 1-5, with lower scores representing lower perceptions of the parent-teacher relationship.

Additionally, combined baseline and post-CBC-D mean scores of the PTRS were calculated for parents and teachers. These data are used as a contrast with previously collected data on traditional CBC within rural communities to determine if the direction and magnitude of change found in this study are similar to those of a randomized controlled trial with an analogous sample. Pre- and post-intervention mean ratings of the PTRS for both studies are presented in Table 4.6. Similar patterns of results were found
across studies, with improvements in the perceived relationship being reported following both interventions. Parent and teacher perceptions of the relationship were higher at baseline for the CBC-D sample; however, the magnitude of improvement following CBC-D, as compared to traditional CBC, was stronger for parents and equivalent for teachers following implementation of the interventions. Pre- to post-intervention improvements on the PTRS are presented in Table 4.7. Parents reported an average improvement of .45 and .29 for CBC-D and traditional CBC, respectively. Teachers reported an average improvement of .30 and .31 for CBC-D and traditional CBC, respectively.

Table 4.6. 
*Pre- and Post-Intervention PTRS Means across Studies*

<table>
<thead>
<tr>
<th>Reporter</th>
<th>Pre-CBC-D Mean(SD)</th>
<th>Post-CBC-D Mean(SD)</th>
<th>Pre-Traditional CBC Mean(SD)</th>
<th>Post-Traditional CBC Mean(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
<td>4.41 (.54)</td>
<td>4.86 (.19)</td>
<td>4.18 (.70)</td>
<td>4.47 (.53)</td>
</tr>
<tr>
<td>Teacher</td>
<td>4.21 (.37)</td>
<td>4.51 (.19)</td>
<td>3.79 (.65)</td>
<td>4.10 (.61)</td>
</tr>
</tbody>
</table>

1 Range of scores possible is 1-5, with lower scores representing lower perceptions of the parent-teacher relationship.

Table 4.7. 
*Average PTRS Rating Improvement across Studies*

<table>
<thead>
<tr>
<th>Reporter</th>
<th>Mean PTRS Improvement from Pre- to Post for CBC-D</th>
<th>Mean PTRS Improvement from Pre- to Post for Traditional CBC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
<td>+ .45</td>
<td>+ .29</td>
</tr>
<tr>
<td>Teacher</td>
<td>+ .30</td>
<td>+ .31</td>
</tr>
</tbody>
</table>

**Videoconferencing Feedback**

Feedback from parents and teachers about the web-based videoconferencing process was assessed using the Videoconferencing Feedback Scale (VFS), which yields
mean scores on three factors (i.e., Usability, Interaction and Satisfaction), as well as qualitative information about the web-based videoconferencing process. Parents and teachers completed the VFS following each CBC-D interview. Although the VFS was intended to be used as a formative measure to provide the consultants with feedback about the process, the data are summarized here as parent and teacher means for each interview and a compilation of the qualitative consultee feedback. Mean scores on the Usability, Interaction and Satisfaction factors are displayed in Table 4.8. Scores across each factor were high with a range of 4.17 to 4.96, indicating that parents and teachers viewed the videoconferencing experience as positive with regard to the usability of technology, the interaction with the consultant, and their satisfaction with the process. Additionally, scores for the interaction and satisfaction factors increased throughout the progression of CBC-D among all parents and teachers. The usability factor ratings among both parents and teachers increased between the first CBC stage (i.e., CNII) and the second (i.e., CNAI) but decreased to slightly below CNII levels following the final stage (i.e., CPEI).
Table 4.8. 
*Parent and Teacher Videoconferencing Ratings for CBC-D Interviews*

<table>
<thead>
<tr>
<th>Reporter</th>
<th>Conjoint Needs Identification Interview</th>
<th>Conjoint Needs Analysis Interview</th>
<th>Conjoint Plan Evaluation Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents</td>
<td>Usability Mean(^1)</td>
<td>4.39</td>
<td>4.62</td>
</tr>
<tr>
<td></td>
<td>Interaction Mean(^1)</td>
<td>4.55</td>
<td>4.63</td>
</tr>
<tr>
<td></td>
<td>Satisfaction Mean(^1)</td>
<td>4.38</td>
<td>4.42</td>
</tr>
<tr>
<td>Teachers</td>
<td>Usability Mean(^1)</td>
<td>4.25</td>
<td>4.57</td>
</tr>
<tr>
<td></td>
<td>Interaction Mean(^1)</td>
<td>4.75</td>
<td>4.95</td>
</tr>
<tr>
<td></td>
<td>Satisfaction Mean(^1)</td>
<td>4.17</td>
<td>4.75</td>
</tr>
</tbody>
</table>

\(^1\) Range of scores possible is 1-5, with lower scores representing lower perceptions of the videoconferencing experience.

In response to the qualitative items of the VFS, consultees provided anecdotal feedback about their experience using the web-based videoconferencing technology that were summarized into four themes: (a) the need for a larger screen, (b) initial discomfort with the technology, (c) difficulty with the streaming process, and (d) convenience of the process. Hugh’s mother and teacher expressed the need for a larger screen after their initial CBC meeting (i.e., CNII). Devon and Ryan’s teachers requested the same after their respective Conjoint Needs Analysis Interviews (CNAI). Providing consultees with a larger screen was not possible due to limited equipment at each school; however, consultants made adjustments to zoom in closer on their faces during subsequent meetings as the camera and projector allowed.

Following the first stage, the Conjoint Needs Identification Interview (CNII), Ryan’s mother and Devon’s mother and teacher reported initial discomfort with setting up and using the technology. Discomfort with the set-up was not mentioned again by
these consultees or any others. Regarding use of the technology, consultees noted technical difficulties with the web-based videoconferencing streaming process throughout the interviews. Hope’s teacher reported minor difficulties during the second stage of CBC (i.e., CNAI); Hugh’s teacher reported sound delays during the CNAI and first Conjoint Plan Evaluation Interview (CPEI); and Devon’s mother and teacher noted short-lived delays in the video stream during the CNAI and CPEI. Ryan’s mother and teacher did not report any concerns related to technical difficulties. The Principal Investigator responded to this feedback by problem-solving with the teacher or the school’s technology personnel to maximize videoconferencing speed and connectivity (i.e., closing all unnecessary programs prior to meetings and using Ethernet connections instead of wireless).

Overall, multiple consultees highlighted the convenience of the web-based videoconferencing. For instance, Hope’s mother and teacher indicated that the convenience of web-based videoconferencing was the part of the process they enjoyed most, and Hugh’s mother and teacher noted the absence of a need for travel as the biggest strength of the process. Devon’s mother and teacher also noted its convenience and the ease of scheduling it facilitated. Ryan’s mother and teacher shared similar thoughts regarding the consultant’s ability to easily communicate with them without the need for additional travel.

Treatment Integrity

CBC-D Integrity

The integrity of CBC-D interviews was also assessed using the *CBC Fidelity Measure Matrices* (Sheridan, 2012). All CBC-D interviews were video-recorded and
coded by trained coders for adherence and quality of CBC-D interview objectives. Additionally, 36% were coded by a second trained coder to assess coding reliability. Each CBC-D interview consisted of specific objectives defining accuracy and quality of delivery by consultants. The Conjoint Needs Identification Interviews, Conjoint Needs Analysis Interviews and Conjoint Plan Evaluation Interviews consisted of 10, 15 and 11 objectives, respectively (See Appendix K). Interrater reliability was calculated by summing exact agreements of objectives met among coders and dividing by the total number of CBC-D interview objectives. This yielded an interrater reliability of 98%. Overall, 96% of CBC-D interview objectives were met by consultants, with 94% of the CBC-D interview objectives being completed in a highly effective manner, indicating high CBC-D integrity.

Dosage ranged from 2.3 to 4.5 hours of exposure to CBC-D and differed for each participant. The relative large range of dosage is explained by the inclusion of a second, final Conjoint Plan Evaluation Interview (CPEI) for Devon and Hugh’s parents and teachers. Thus, parents and teachers for Devon (4.4 hours) and Hugh (4.5 hours) were exposed to a greater dosage of CBC-D compared to Hope (2.9 hours) and Ryan (2.3 hours).

**Individualized Intervention Integrity**

The adherence dimension of treatment integrity was assessed to understand the fidelity with which participating parents and teachers implemented the individualized behavior plans as designed. Home and School Plan Summary Forms (PSFs) were used to collect information on consultee treatment integrity. Consultees were prompted to complete the form daily. Individualized behavior plan steps (e.g., praising compliance,
completing Home-School note) were listed as individualized steps on the Home and School PSFs. Consultee self-reports of treatment integrity data are summarized in Table 4.9. Specifically, the percentage of PSFs returned by consultees and the self-reported number of PSF steps completed are reported. Percentages of steps completed were calculated by dividing the number of steps reported as completed by the total number of steps possible for the days data were returned. Overall, treatment integrity was high across cases at home and school on days integrity data were self-reported; however, there are significant amounts of missing data from Hope’s mother and Devon’s mother and teacher.
### Table 4.9. 
**Self-Report of Treatment Integrity across Participants**

<table>
<thead>
<tr>
<th>Child (Reporter)</th>
<th>Percentage of Plan Summary Forms Returned</th>
<th>Percentage of Plan Summary Form Steps Completed$^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hope (Parent)</td>
<td>42%</td>
<td>96%</td>
</tr>
<tr>
<td>Hope (Teacher)</td>
<td>100%</td>
<td>95%</td>
</tr>
<tr>
<td>Hugh (Parent)</td>
<td>100%</td>
<td>97%</td>
</tr>
<tr>
<td>Hugh (Teacher)</td>
<td>97%</td>
<td>97%</td>
</tr>
<tr>
<td>Devon (Parent)</td>
<td>36%</td>
<td>100%</td>
</tr>
<tr>
<td>Devon (Teacher)</td>
<td>40%</td>
<td>88%</td>
</tr>
<tr>
<td>Ryan (Parent)</td>
<td>100%</td>
<td>99%</td>
</tr>
<tr>
<td>Ryan (Teacher)</td>
<td>100%</td>
<td>94%</td>
</tr>
</tbody>
</table>

$^1$ The percentage of Plan Summary Form steps completed is based on consultee self-report.

**Hope.** At home, Hope’s mother completed 42% of her Home Plan Summary Forms. Of the data collected, she reported implementing 96% of the home intervention plan steps during Hope’s morning routine. This indicated a high level of treatment integrity at home for integrity data that were collected. At school, Hope’s teacher completed 100% of her School Plan Summary Forms. Of the data collected, she reported implementing 95% of the school intervention plan steps during Hope’s reading group time. This indicated a high level of treatment integrity at school.

**Hugh.** At home, Hugh’s mother completed 100% of her Home Plan Summary Forms. Of the data collected, she reported implementing 97% of the home intervention plan steps during Hugh’s morning routine. This indicated a high level of treatment
integrity at home. At school, Hugh’s teacher completed 97% of her School Plan Summary Forms. Of the data collected, she reported implementing 97% of the school intervention plan steps during Hugh’s morning seatwork. This indicated a high level of treatment integrity at school.

**Devon.** At home, Devon’s mother completed 36% of her Home Plan Summary Forms. Of the data collected, she reported implementing 100% of the home intervention plan steps during Devon’s dinner routine. This indicated a high level of treatment integrity at home for integrity data that were collected. At school, Devon’s teacher completed 40% of her School Plan Summary Forms. Of the data collected, she reported implementing 88% of the school intervention plan steps during Devon’s writing time. This indicated a high level of treatment integrity at school for integrity data that were collected.

**Ryan.** At home, Ryan’s mother completed 100% of her Home Plan Summary Forms. Of the data collected, she reported implementing 99% of the home intervention plan steps during Ryan’s homework time. This indicated a high level of treatment integrity at home. At school, Ryan’s teacher completed 100% of her School Plan Summary Forms. Of the data collected, she reported implementing 94% of the school intervention plan steps during Ryan’s whole group reading time. This indicated a high level of treatment integrity at school.
Chapter 5: Discussion

The purpose of this study was to evaluate the efficacy and acceptability of Conjoint Behavioral Consultation via Distance delivery (CBC-D) for improving child compliance at home and school. Specific research questions included: (a) What are the immediate effects of CBC-D on child compliance at home and school? (b) How acceptable is CBC-D to consultees (i.e., parents and teachers)? and (c) What do parents and teachers report about the change in their relationship following CBC-D? The efficacy of the intervention was assessed using a multiple baseline across participants design. The impact of CBC-D on child compliance was evaluated using visual inspection and statistical aids. The acceptability of CBC-D and the parent-teacher relationship were assessed via consultee report. Additional measures of parent and teacher feedback about the videoconferencing process and treatment integrity are also discussed.

Summary of Outcomes

Compliance

Compliance data were collected through parent and teacher daily reports of child compliance behavior. Results for the first research question examining the efficacy of CBC-D were mixed but generally did not provide support for CBC-D as an effective intervention for increasing child compliance at home and school. The presence of ceiling effects at baseline for the majority of compliance data limited the sensitivity needed to detect treatment effects.

Parent- and teacher report of child compliance. Of the four participants, only Hope’s school compliance data represented a clear treatment effect of unanimous agreement from each indicator. For example, Hope’s teacher-reported mean rating of
daily compliance increased by greater than 20% between baseline and treatment phases. Additionally, an immediate change in compliance was observed from baseline to treatment phase, and visual improvement in level and trend was demonstrated. Finally, compliance data met criteria for CDC and PAND above chance level following the introduction of the individualized intervention plan. The remaining parent and teacher daily report data demonstrated mixed effects but mostly failed to support the efficacy of CBC-D. Positive mean changes were observed at home and school for all participants. Immediate changes were observed only for Hope at home and school, Hugh and Devon at home, and Ryan at school. Positive trend changes were seen only for Hope and Devon at school. Overall, the positive results for Hope are not sufficient within a multiple baseline across participants design to assume a functional relationship between the improved behavior and the implementation of the individualized intervention.

The lack of treatment effects found in this study are in contrast to previous research on the CBC model as an effective treatment for childhood behavioral problems (Guli, 2005; Sheridan et al., 2001; Sheridan et al., 2006; Sheridan et al., 2012; Sheridan et al., 2013). Given the abundance of research support for CBC, the lack of findings in this study may indicate that virtual participation of the consultant and consultees limits the capacity for CBC to effectively address concerns with children’s noncompliance. Research in industrial/organizational psychology has documented the importance of presence (i.e., the subjective experience of being in one place or environment, even when one is physically situated in another) when investigating the impact of virtual environments on participant experience (Alexander, Brunye, Sidman, & Weil, 2005; Pierce & Aguinis, 1997; Witmer & Singer, 1998). It may be that the distance delivery
aspect of CBC, including the minor technical difficulties noted by consultees, negatively impacted the ability of consultees to be fully present in the consultation process. The high acceptability and videoconferencing feedback scores indicate consultees did not perceive the technology to have negatively impacted their experience; however, those measures did not account for all the aspects used to measure presence such as control, sensory, distraction and realism factors (Witmer & Singer, 1998). The use of web-based distance technology as a delivery system may have affected consultees’ presence by reducing their involvement with and immersion in the CBC process. In this study, control factors (e.g., degree of control, environment modifiability), the strongest predictor for the experience of presence (Witmer & Singer, 1998), were highly controlled and standardized by the consultants potentially affecting consultees’ ability to fully engage in the consultation. Additionally, the remote involvement by the consultant could have detracted from the meaningfulness of the process and sense of connection with the consultant, creating a perception of the consultation process as artificial by consultees.

Though it is possible the data in this study demonstrate that the introduction of distance delivery to CBC is ineffective for improving child compliance, the minimal baseline variability in compliance data and ceiling effects at baseline severely limited the sensitivity of the compliance analyses to detect treatment effects. With the exception of Hugh’s data at home, all parent and teacher baseline means were at or above 7.00 (out of 10), with a range of 7.00 to 8.36 on the DBR. High baselines are problematic because they leave little room to document treatment gains and create difficulty visually analyzing the data. Additionally, the CDC and PAND statistical aids were impacted by the high baseline data. The mean line in CDC is raised 0.25 standard deviations to reduce Type I
errors; however, with the high baselines, compliance ratings would have needed to reach the maximum (i.e., 10), or in some cases above the maximum, to demonstrate an effect using CDC. With regard to PAND, any DBR rating of 10 during baseline automatically creates a ceiling effect and a PAND score of 0%, as all data points overlap with the maximum compliance rating at baseline.

In all cases, the means increased from baseline to treatment, indicating that parents and teachers perceived general improvements in child compliance following implementation of intervention. However, given the limited ability to detect treatment effects that resulted from the ceiling effect within the baseline data, the gathering of corroborating data via the other treatment effect indicators was not possible in most cases. Hope’s school data were the only data to overcome the ceiling effect limitation. It should be noted that her baseline data did not include a score of 9 or 10, providing some, though still minimal, room for CDC and PAND analyses to detect effects. It is possible that the treatment effects for Hope’s school data were robust enough to overcome the ceiling effect limitations, as she had only two scores below a 9 during the intervention phase. Though it would have made interpretation easier, it is not reasonable to assume that the interventions would have completely eliminated all compliance concerns immediately and continuously as some noncompliance is developmentally appropriate for elementary age children.

There was one instance in which ceiling effects did not limit compliance data interpretation. Hugh’s home behavior data did not have a ceiling effect at baseline, though it did have a score of 10 that eliminated PAND as a useful indicator, and treatment effects were still not found outside of a positive change in mean and
immediacy. Hugh’s home data were highly variable across both phases; however, there
was an immediate, stable and strong improvement in his behavior during the first week of
intervention. These stable effects did not maintain and the remaining data were highly
variable, minimizing the initial evidence of a treatment effect. As with Hope’s evidence
of a treatment effect, the absence of a treatment effect in one case resistant to ceiling
effects within a multiple baseline across participants design does not warrant the
conclusion that CBC-D fails to improve compliance.

Overall, the high baseline means suggest that the selection criteria used to identify
children with compliance concerns may have been too lenient to distinguish children with
significant enough behavior concerns. Specifically, the criteria used for the Behavior
Needs Screening Tool (BNST) that has been used successfully across two randomized
control trials of CBC may not have been rigorous enough to screen for children with
severe needs, which is necessary within small n designs. Identifying children who
exhibited significant difficulties with compliance would have allowed for more
opportunities to detect treatment effects across all indicators. It may have been more
prudent to use the Noncompliance Frequency factor of the Response Style Questionnaire
(RSQ) as the only eligibility criteria as it most closely maps onto the dependent measure
used in this study. Based solely on the Noncompliance Frequency factor of the RSQ
which was most closely associated with the DBR measurement system, only Hugh would
have been eligible for the study. Furthermore, Hugh’s behavior at home was the only case
not affected by the ceiling effect; however, the RSQ was completed by the teacher, and
Hugh still presented with a high baseline at school. The RSQ appeared to have
distinguished the participants in this study from typical same-gender classroom peers, but
that difference in scores may not have translated to a measurable difference using the DBRs to measure compliance. Ultimately, the screening measures used in this study may not have been sensitive enough to identify children with significant behavior concerns.

Acceptability

The second research question investigated the acceptability of CBC-D. Parents and teachers perceived CBC-D as a highly acceptable intervention for child compliance as rated by the Acceptability factor of the Behavior Intervention Rating Scale (BIRS; Von Brock & Elliot, 1987). Parent ratings ranged from 4.20 to 5.53 on a 6-point Likert-type scale (1= low perceived acceptability; 6= high perceived acceptability), and teacher ratings ranged from 4.47 to 5.80 on the same 6-point scale. These data are consistent with previous CBC research on social validity (Freer & Watson, 1999; Sheridan et al., 2001; Sheridan et al., 2004; Sheridan et al., 2012; Sheridan & Steck, 1995) and consultation using web-based videoconferencing (Gibson et al., 2010). Furthermore, the overall mean ratings of CBC-D acceptability among teachers (5.05) were similar to ratings among teachers (5.09) in an ongoing randomized controlled trial of traditional CBC in rural communities (Sheridan, 2010) and teacher ratings (5.08) from a randomized trial of traditional CBC in an urban setting (Sheridan et al., 2012). Parent ratings across studies were both high, indicating positive perceptions of CBC and CBC-D as acceptable interventions; however, ratings were, on average, higher for parents receiving on-site CBC (5.07) than parents receiving CBC-D (4.83). These data suggest that CBC-D is acceptable for both parents and teachers for addressing child behavior in rural communities and as acceptable as traditional CBC for teachers; however, given the small sample size in this study, further research is warranted.
It should be noted that the lowest acceptability ratings among parents (i.e., Devon’s mother) and teachers (i.e., Hope’s teacher) were from the only participants to indicate discomfort using web-based videoconferencing technology prior to the study. These lower ratings of acceptability may be impacted by the consultee’s discomfort and lack of familiarity with distance technology. Future research investigating a relationship between initial comfort with technology and the acceptability of web-based interventions may provide useful information for screening those most open to a web-based intervention.

**Parent-Teacher Relationship**

Results related to the third research question were promising. Changes in parent and teacher perceptions of the parent-teacher relationship following CBC-D were noted. Seven of the eight consultees reported perceived improvements in the parent-teacher relationship after the completion of CBC-D. Using the Parent-Teacher Relationship Scale (PTRS; Vickers & Minke, 1995), improvements ranged from 0.4 to 1.33 on the 5-point Likert-type scale. The parent-teacher relationship has been shown to mediate the effects of CBC on children’s disruptive behaviors (Sheridan et al., 2012). Given the small n design, mediation analyses were not possible; however, future studies could investigate whether the impact of the parent-teacher relationship on treatment outcomes can be replicated when CBC is delivered through distance technology. Overall, these results indicate that CBC-D can improve the perceived parent-teacher relationship for rural parents and teachers.

The parent-teacher relationship improvements observed in this study are similar to those from a randomized controlled trial of traditional CBC within rural communities.
The average increase in the perceived parent-teacher relationship after CBC-D among parents (+.45) was greater than that observed in traditional CBC (+.29). The average increase among teachers in CBC-D (+.30) was slightly less than that reported in traditional CBC (+.31). Though additional research is necessary, these similarities suggest that the introduction of distance technology as the CBC delivery medium does not diminish the positive effects of CBC on the parent-teacher relationship and may enhance it for parents.

It is interesting to note that, despite the absence of treatment effects on child behavior, parents and teachers still perceived improvements in their relationship following the CBC-D intervention. This suggests that the perceived increases in the parent-teacher relationship are not contingent on a robust improvement in child behavior as a result of the intervention. Instead, the processes of CBC-D, such as parents and teachers joining in a problem-solving partnership, may have influenced the relationship. Previous research has demonstrated that parents and teachers report increased competence in the problem-solving process following CBC (Holmes, Witte, Coutts, Smith, Sheridan & Kunz, 2013; Sheridan et al., 2013), and it may be the collaborative problem-solving inherent to CBC that influences parent and teacher perceptions about their relationship. Future research, however, is necessary to investigate the processes by which improvements in the parent-teacher relationship occur within CBC.

It is also worth noting that Hope’s mother reported the greatest improvement in the perceived parent-teacher relationship. Hope’s behavior at school demonstrated the only treatment effect; though speculative, the large improvement in the perceived parent-teacher relationship by Hope’s mother may have stemmed from her attributing the school
improvements to the teacher’s intervention efforts. Additionally, Hugh’s mother was the only consultee to report a perceived decrease in the parent-teacher relationship (i.e., a decrease in rating by .25). This decrease may be due to a ceiling effect at baseline, as Hugh’s mother’s score of 4.83 out of a possible 5, the highest baseline across consultees, left little room for improvement. Another possible explanation for the decrease could be the lack of treatment effect and high variability of compliance reported for Hugh at home.

**Videoconferencing Feedback**

One unexpected finding that was not originally proposed as a research question involved parent and teacher ratings of their web-based videoconferencing experience. At the conclusion of each interview, parents and teachers completed the Videoconferencing Feedback Scale (VFS), a 5-point Likert-type scale measuring their perceptions on three factors of the web-based videoconferencing process (i.e., usability, interaction and satisfaction), with higher ratings indicating more positive perceptions. Overall, mean ratings ranged from 4.17 to 4.96, indicating that, across all meetings, parents and teachers rated the process favorably. Additionally, parent and teacher perceptions of their ability to effectively interact with the consultant, as well as their satisfaction with the web-based videoconferencing technology, increased after each interview. This trend was not found on the usability factor as mean parent and teacher ratings increased from the first interview to the second but decreased after the third interview to just below the initial interview mean for both parents and teachers.

The increased ratings for the interaction and satisfaction factors following each interview are not necessarily surprising, as the VFS was intended as a formative measure for adjusting the web-based videoconferencing process based on consultee feedback.
However, given the multiple baseline across participants design, it is reasonable to hypothesize that the VFS data would stabilize following feedback from the initial interviews with the first participant (i.e., Hope’s mother and teacher). Stabilization did not occur following the initial interviews with Hope’s parent and teacher, suggesting that there is no general preference in the web-based videoconferencing style for these dyads of parents and teachers. Another possible explanation for the increasing trend over time could be that participants’ ratings increased as a function of added comfort and experience with the web-based videoconferencing process. Additional research examining the potential impact of increased exposure to web-based videoconferencing on participants’ comfort and satisfaction may be warranted.

The qualitative VFS data are consistent with the quantitative data in that parents and teachers reported increased comfort with the process and fewer technical difficulties as the meetings progressed. Consultees commonly expressed a desire for a larger screen to view the consultant and shared documents. This was not possible for the present study, as the only available resource at the children’s schools was a 13.3 inch laptop computer. However, an increased screen size for consultees should be considered in future research that uses web-based videoconferencing. Additionally, consultee reports of technical difficulties with the streaming process appear to have only minor impacts on quantitative VFS satisfaction and BIRS acceptability data, suggesting that consultees will tolerate some delays in sound or video in exchange for the convenience and costs saved in travel. In response to the feedback regarding difficulties with the streaming process, the Principal Investigator (i.e., PI) either consulted with the participating school’s technology personnel or the teacher to maximize connectivity speed. Overall, these VFS data
highlight the importance of collecting participant feedback and using the information formatively to improve the web-based videoconferencing experience for participants.

**Treatment Integrity**

**CBC-D integrity.** Trained, independent coders evaluated the integrity with which CBC-D was implemented, yielding high rates for each consultant across cases. Adherence (96%) and quality (94%) ratings indicated that CBC can be implemented as intended and with quality through remote consultant participation via the use of web-based distance technology software. These data suggest that the adherence and quality of CBC delivery are in no way contingent on the physical presence of the consultant.

Dosage differed for each participant and ranged from 2.3 to 4.5 hours of exposure to CBC-D. Parents and teachers for Devon (4.4 hours) and Hugh (4.5 hours) each participated in a second Conjoint Plan Evaluation Interview (CPEI) that accounted for the difference in dosage compared to Hope (2.9 hours) and Ryan (2.3 hours). Given the lack of treatment effects, there does not appear to be an impact on dosage of CBC-D on child compliance. In fact, Hope’s school data were the only data to show a treatment effect and her parents and teachers participated in fewer hours than Hugh and Devon’s consultee pairs.

Previous research on the dosage of on-site CBC in rural communities found that the three CBC interviews (i.e., CNII, CNAI, CPEI) required just under three hours to complete (Holmes, Coutts, Sheridan, Kunz, Smith, & Witte, 2012). Although no firm conclusions can be drawn given the small sample size, it may be that Hope’s parents and teachers received the optimal dosage of CBC-D (2.9 hours), in line with previous CBC research, that may have accounted for the positive effects found for Hope at school. Other
CBC-D cases received a lower dosage (i.e., Ryan’s parents and teacher receiving 2.3 hours) or greater dosage (i.e., Hugh and Devon’s parents and teachers receiving 4.5 and 4.4 hours, respectively) of CBC-D than what was reported in on-site implementation of CBC within rural communities.

**Individualized intervention integrity.** Adherence treatment integrity data were also collected through parent and teacher self-reports of implementing the individualized behavioral intervention packages at home and school, respectively. High rates of behavioral intervention integrity were reported across consultees and settings, ranging from 88% to 100% of daily plan step implementation on days integrity data were self-reported. However, fewer than 50% of treatment integrity data were collected for Hope at home (42%) and Devon at home (36%) and school (40%). The low return rates compromise the ability to interpret the impact of treatment integrity on treatment effectiveness in those settings.

A review of treatment integrity research by Sanetti and Kratochwill (2008) suggests that higher rates of intervention integrity are generally correlated with more positive outcomes; however, in this study, this relationship was observed only for Hope at school. Hope’s teacher reported 95% integrity of daily behavioral intervention plan steps, and a clear treatment effect on Hope’s compliance was observed via teacher daily report. Overall, the data suggest the effectiveness of the behavioral plan interventions on child compliance was not impacted by the degree to which parents and teachers reported implementing the plans at home and school.

Reliance on self-report data as the primary means of adherence measurement makes interpreting the potential role of behavioral intervention treatment integrity on
treatment effectiveness difficult, given that self-report data are inherently subjective and may be influenced by social desirability and bias. This can possibly lead to inaccurate and inflated reports of actual implementation. Future research should complement subjective self-report measures with additional objective measures, such as direct observation of implementation and permanent product data (e.g., chart moves).

**Study Evaluation**

**Strengths**

The purpose of this study was to evaluate CBC-D as an effective and viable intervention for childhood compliance concerns with a sample of rural elementary children, their parents and teachers. Decades of research on CBC have demonstrated that it is an effective model for reducing child problem behavior across home and school environments (Sheridan et al., 2001; Sheridan et al., 2012). Despite this, CBC requires costs in terms of time and travel to and from meetings. These costs become more salient for rural communities, which face additional barriers to accessing specialized services (Owens et al., 2008). A new wave of ongoing research is investigating the potential for advances in web-based technology to yield alternative means of delivering services to people with limited access.

CBC-D addresses many of the barriers faced by rural communities by eliminating the need for extensive travel by parents and teachers or an out-of-town consultant. This study investigated the efficacy and acceptability of CBC when implemented using distance technology software and a consultant who participates virtually. To date, only one other study has investigated the use of web-based distance technology as a means of delivering school-based consultation for a child with autism (Gibson et al., 2010).
Though no determination regarding the efficacy of CBC-D could be made due to sample and measurement limitations, the study found promising results surrounding the acceptability of CBC-D, the parent-teacher relationship, consultees’ feedback about the videoconferencing process and treatment integrity for this small sample. No other known interventions have investigated parents’ acceptability and experience in school-based, distance-delivered interventions. Additionally, parents and teachers invested in the process, returning daily behavior data, initiating weekly video-recordings, returning treatment integrity data, and attending and participating in multiple web-based meetings.

Another strength of this study was the collection of two levels of treatment integrity data. Specifically, the integrity with which CBC-D was implemented by consultants and the individualized intervention treatment integrity by parents and teachers were assessed. As stated earlier, previous research has documented the importance of treatment integrity with regard to treatment effects (Sanetti & Kratochwill, 2008); however, despite the established importance of measuring treatment integrity in intervention research, it is still not commonly reported in research studies (McIntyre, Gresham, DiGennaro, & Reed, 2007). Also uncommon in current research is the multidimensional measurement of treatment integrity. This study measured CBC-D integrity across three independent dimensions: adherence, quality and dosage. The high rates of adherence and quality dimensions of integrity reported in this study suggest that the introduction of distance delivery does not interfere with a trained consultant's ability to adhere to the CBC objectives and to do so with high quality. The dosage information allows for future contrast with traditional CBC research to provide additional context of how distance delivery may impact the amount of time needed for CBC-D.
Overall, the adherence with which parents and teachers implemented the individualized interventions was very high, with a range of 88% to 100%, on days integrity data were self-reported. Though the return rate was below 50% for Hope’s home intervention integrity (42%) and Devon’s home (36%) and school (40%) data, the overall collection rate was strong, with all other collection rates exceeding 97%. The collection of adherence data also provides evidence to rule out its impact on the lack of treatment effect. Though interpretation of the impact of CBC-D on compliance was limited, the high rates of parent- and teacher-reported treatment integrity minimize the likelihood that the absence of effects stemmed from poor intervention implementation by the consultees. Instead, the lack of effect more likely originates from the selection criteria being too lenient, insufficient measurement sensitivity and interrater agreement, or CBC-D’s ineffectiveness. Future intervention research should continue collecting treatment integrity data as an aid for accurately interpreting results.

Finally, the multiple baseline across participants design used in this study is a rigorous one, meeting the evidence standards set forth by the What Works Clearinghouse (Kratochwill et al., 2010). Had clear and consistent treatment effects been revealed in this study, the design’s rigor would have provided strong empirical support for the efficacy of CBC-D on child compliance by controlling for threats to internal validity (e.g., history, testing, maturation) via the staggered introduction of the intervention across participants. The effects found for Hope at school were promising, as well, but did not meet the burden of proof required by the design.
Limitations

A number of limitations should be considered when interpreting the results of this study. Four categories of limitations were present: measurement, sample, internal validity and external validity.

**Measurement limitations.** Several measurement limitations should be noted that impact the ability to confidently interpret compliance and secondary outcome data. As previously discussed, the high levels of baseline parent and teacher daily report data led to difficulty determining treatment gains. The ceiling effects limited the ability to evaluate treatment effects through visual analysis, CDC and PAND by reducing the sensitivity for detecting treatment gains to a small measurement window. The treatment effect for Hope at school, in spite of the ceiling effect, offers promise; however, Hugh’s home data, which were not subject to a ceiling effect, temper this. Future research investigating CBC-D would benefit from the piloting of screening measures and using baseline data to ensure that the selected sample provides baseline data that allows for more sensitive effect detection.

Second, the lack of sufficient interrater agreement in parent and teacher daily reported compliance also limits the ability to make decisive conclusions about the efficacy of CBC-D. Despite research supporting DBRs as a reliable measure of daily behavior comparable to direct observations (Chafouleas, McDougal, Riley-Tillman, Panahon, & Hilt, 2005; Christ et al., 2009; Riley-Tillman et al., 2008), the percentages of interrater agreement found in this study failed to match what is traditionally deemed acceptable. The lack of sufficient interrater agreement between consultee reports of compliance and direct observations indicates that parents and teachers were not
consistently measuring compliance as defined in this study. In the event that clear
treatment effects had been demonstrated, conclusions about the efficacy of CBC-D would
have been limited by low interrater agreement ratings. Additionally, low interrater
agreement ratings have the potential to mask actual treatment effects, though visual
analyses of the direct, independent observation data were consistent in demonstrating no
clear treatment effect of CBC-D on child compliance. Though problematic, it is unlikely
that low interrater agreement contributed to the absence of a treatment effect given that
46% of all compliance data points, excluding Devon’s home data, were coded for
interrater agreement using direct observation and produced similar results (i.e., no clear
treatment effect).

One possible explanation for the low interrater agreement may be the use of a
standardized definition of compliance for each child. The preselected compliance
definition was used as a way of standardizing the target behavior for each case to increase
the internal validity of the study. By using the same compliance definition, parents and
teachers were supposed to be measuring the same behavior at home and school for all
child participants. However, in clinical work, one step of the CBC process entails
identifying and defining a target behavior that takes into account individual differences in
child behavior. The standardized definition may have missed some of the nuance about
each child’s compliance or misrepresented parents’ and teachers’ conceptualizations of
compliance, leading to observer drift. It is not unreasonable for parents and teachers to
have different thresholds and expectations for compliance. For instance, a parent may
naturally define compliance as completing or initiating a task within 5 seconds of a
command, whereas a teacher may believe compliance could be attained within a 15-
second window. Observer drift is a common threat in observation research; however, the Principal Investigator’s (i.e., PI) feedback and subsequent retraining of consultees did not improve the interrater agreement of parent and teacher ratings of compliance. It is possible the training and subsequent retraining were not sufficient to produce more accurate consultee ratings; however, the PI used procedures found to be effective in previous DBR-SIS research (Kilgus et al, 2012). Additionally, research on the effectiveness of training on DBR-SIS interrater agreement is mixed with two studies demonstrating no significant differences in rating accuracy between trained and untrained raters (Chafouleas et al., 2005; LeBel, Kilgus, Briesch, & Chafouleas, 2010) and one study demonstrating that direct training procedures increased rater accuracy (Schlientz, Riley-Tillman, Briesch, Walcott, & Chafouleas, 2009).

Furthermore, the definition used for compliance in this study may have been too complex for consultees to accurately measure compliance. The procedures used in this study required consultees to estimate the number of times a child was given a command and the child’s response within 10 seconds (i.e., compliance or noncompliance) and then compute the percentage into a rating. The multistep procedure for calculating compliance is well suited for video-recorded observations as there is the ability to pause or re-watch an interaction; however, it may have been too complex for parents and teachers to accurately rate in a live setting with competing responsibilities. Additionally, the discrepancy between consultee ratings and direct observations may be due to the lack of DBR research investigating the psychometric properties of compliance as a target behavior. The majority of DBR research documenting comparable ratings using DBRs
and direct observations has focused on academic engagement and disruptive behavior definitions. It may be that not all behaviors function in the same way when using DBRs.

Further complications with the DBR measurement system include the use of compliance percentage as the primary metric. When comparing compliance data across participants, percentages are advantageous as they provide an equivalent comparison for each participant; however, in this study not all compliance percentage data points were equivalent. Specifically, students did not experience identical opportunities to respond; thus, compliance percentage reflected different levels of performance across participants. For instance, two participants may have received DBR ratings of 10 (suggesting 100% compliance, but one participant may have received and complied with 15 commands, whereas the other received and complied with two commands. These significant details are masked when using DBRs and further complicate the ability to make confident conclusions about CBC-D’s efficacy on child compliance. Overall, given the complexity of the compliance definition and measurement and the lack of DBR research using compliance as a target behavior, this study would have benefitted from piloting of the compliance DBR for rating accuracy and suitability as a dependent variable.

Finally, this study incorporated a great deal of self-report data, which can be subject to social desirability and bias. It is possible that the acceptability of CBC-D, the parent-teacher relationship, treatment integrity and the web-based videoconferencing feedback may have been rated more positively based on the relationships established among parents, teachers and consultants, as well as the clear intent to assess CBC-D’s impact on child behavior. Conclusions based on these scores should be tempered, and empirical replication is necessary to confirm an effect or lack thereof.
Sample limitations. Concerns related to sample may have precluded treatment effects from being detected with the analyses used in this study. The high compliance baselines across home and school suggest that the children selected for this study were not exhibiting rates of behavior that allowed for sensitive measurement of treatment effects. Based on the screening measures used, Hugh was the only child that consistently met criteria across both screeners. His home data, though highly variable, provided an opportunity to demonstrate a clear treatment effect. Future research examining a sample with more behavioral deficits may be warranted to more accurately evaluate the efficacy of CBC-D.

Though Hugh’s screening data suggest he would be an appropriate candidate for the current study, other variables differentiated him from the rest of the sample and reduced the homogeneity of participants. Hope, Devon and Ryan were first-graders with ages ranging between 6 and 7; Hugh was a 10-year-old third-grader. Hugh was older than the other three participants, coming into the study after having been held back in school twice. These differences may have caused the CBC-D intervention to have a different impact on his behavior than the others. Additionally, Hugh and his mother had an extensive history with school personnel through Individualized Education Plan meetings and multiple grade retentions. This history, along with Hugh’s demonstrated lack of treatment effects at home, may have impacted his mother’s post-intervention rating of the parent-teacher relationship. Her rating was the only one to decrease over the course of the intervention. Overall, Hugh’s behavioral deficits made him the most suitable for inclusion in the present study when compared to the rest of the sample; however, his
demographics and educational history also significantly differed from the other three participants, potentially further confounding interpretation.

**Internal validity limitations.** This study included several limitations related to design and internal validity. Multiple baseline across participant designs are structured so that participants serve as their own controls while the intervention is applied to one participant at a time. Experimental control is demonstrated when effects on the dependent variable are replicated across participants over time upon the introduction of the independent variable (i.e., CBC-D). In this study, clear treatment effects were seen only for Hope at school, based on teacher-reported compliance. This one instance of a treatment effect, without replication for other participants, does not rule out other possible causes such as maturation (e.g., Hope’s noncompliant behaviors naturally decreased as she matured) and history (e.g., an event unrelated to CBC-D influenced Hope’s pattern of data). Despite the promise of Hope’s school data, the majority of data in this study do not demonstrate experimental control of a functional relationship between the introduction of CBC-D and compliance.

The purpose of this study was to investigate the viability of delivering CBC via distance; however, not all contact between consultees and project personnel was done remotely. An initial on-site meeting between the Principal Investigator (i.e., PI) and parents and teachers, respectively, was done at the outset to increase face validity of the study during recruitment. This on-site meeting could potentially have confounded the consultee perceptions of the process. This confound may have had a greater impact for consultation involving Ryan as the PI also served as the consultant for this case. In the other three cases, the second consultant’s only interaction with consultees was remote.
The only other school-based videoconferencing intervention delivery study also incorporated an initial on-site meeting between the consultant and teacher (Gibson et al., 2010). More research is needed to determine how much, if any, on-site interaction could support the development of connection between the consultant and consultees, or improve consultees’ perceptions of or engagement in the consultation process.

Another limitation involves gaps in measurement of child compliance due to interruptions in the children’s schedules and missing data. Hope and Ryan each shared the same spring break, during which data were not collected at home or school due to the disruption in the children’s normal routines. These breaks were not shared by other participants and may have impacted the ability to interpret effects had more evidence of a treatment effect been present. Additionally, Devon was sick for a week during baseline, resulting in missing home behavior data prior to the start of intervention. There are also missing interrater agreement data from Devon’s home due to his mother’s discomfort with the video-recording procedures.

Finally, the length and dosage of CBC-D differed across participants. Devon and Hugh’s parents and teachers participated in an additional Conjoint Problem Evaluation Interview (CPEI). Each consultation team made alterations to their individualized intervention plans during the first CPEI, deciding that there was a need to meet for a second CPEI to evaluate the impact of the alterations. This is a common practice within CBC and behavioral consultation; however, the differences in dosage and treatment length weaken the internal validity of the study.

**External validity limitations.** Limitations surrounding the external validity in this study exist, restricting the ability to generalize the results found therein. First, the
consultants in this study each had formal CBC training and multiple years of experience studying CBC; therefore, it is unclear whether the high rates of CBC-D treatment integrity found could be replicated if CBC-D was implemented by less experienced consultants. Second, compliance was the only child behavior targeted in this study, limiting the extent to which results can be generalized to other behaviors. Finally, the participants in this study consisted of three males and one female, ages 6 to 10, and parents and teachers from rural Nebraska. The acceptability and parent-teacher relationship results from this study cannot be expanded to children of other ages, nor to parents and teachers from other geographic locations.

**Implications and Future Directions**

**Practice**

Rural communities are faced with many barriers to accessing services (Owens et al., 2008), but advancements in web-based distance technology offer an alternative, cost-efficient means of intervention delivery. As such, it is necessary to identify potential evidence-based interventions that could be delivered from a distance. Though no clear evidence emerged for CBC-D’s effect on child compliance, data did support that CBC-D can be implemented with high rates of integrity and is a highly acceptable intervention for rural parents and teachers. Additionally, positive results in line with previous CBC research were found for CBC-D’s impact on the parent-teacher relationship.

CBC has traditionally been conducted via on-site interactions among parents, teachers and a consultant. Results of this study indicate that the removal of the consultant from on-site interactions did not negatively impact consultee reports of acceptability or CBC’s impact on the parent-teacher relationship. Additionally, the use of web-based
videoconferencing was not viewed as a barrier to the process; consultees reported liking
the convenience of the technology, though, future implementation of CBC-D or similar
web-based videoconferencing interventions may benefit from the use of a larger screen to
improve consultees’ view of the consultant and shared documentation. These positive
results indicate that rural parents and teachers view the use of web-based
videoconferencing to address child concerns as an acceptable method of service delivery
and, by working together can positively influence their perceptions of the parent-teacher
relationship.

Research

This initial study of CBC-D suggests the need for more research that addresses its
limitations in examining the efficacy of the intervention for children in rural
communities. The sample selection, high baselines and subsequent ceiling effects in this
study precluded any confident interpretation of CBC-D’s impact on child compliance.
Given these limitations, along with the improvements in Hope’s school behavior and
positive secondary outcomes found in this study (i.e., acceptability, parent-teacher
relationship, treatment integrity), it is reasonable to recommend that additional research
be conducted to further investigate the efficacy of CBC-D. Traditional CBC has
undergone a strong series of research studies to establish evidence of its effectiveness for
supporting children with school-related concerns (Galloway & Sheridan, 1994; Guli,
2005; Sheridan et al., 2001; Sheridan et al., 2012), and research on CBC-D should follow
in kind. CBC-D should be investigated thoroughly using rigorous small n designs with a
variety of child behaviors to establish initial evidence for efficacy before advancing to
larger-scale randomized controlled designs. Additionally, future research on distance
delivered services would benefit from measuring the impact of the perception of presence in the virtual environment for participants. Witmer and Singer (1998) developed a presence questionnaire and an immersive tendencies questionnaire that have demonstrated acceptable psychometric properties. Future research investigating the influence of initial on-site interactions on consultees’ experiences with and perceptions of web-based videoconferencing interventions is necessary to determine the optimal strategy for initiating remote interventions.

Furthermore, future research on CBC-D would benefit from including a variety of target behaviors and the use of individualized target behavior definitions as opposed to a standardized definition. The lack of DBR interrater agreement in this study may owe to the fact that a standardized definition of compliance was used for all participants at home and school. As a result, this study may not have truly measured compliance as seen by the parents and teachers. Future research should investigate differences in interrater agreement ratings as a result of using standardized target behavior definitions and individualized target behavior definitions.

The impact of CBC-D on the parent-teacher relationship was an intriguing finding that warrants further empirical investigation. The parent-teacher relationship has already been documented as a mediator in CBC’s effect on child behavior (Sheridan et al., 2012), and it will be beneficial for future studies to continue assessing the parent-teacher relationship. This study also measured the integrity with which individualized interventions were implemented by consultees. It is vital for intervention research studies to continue collecting and reporting treatment integrity data. Continued collection and
reporting will allow for more advanced analyses and evaluations of the potential link between treatment integrity and outcomes.

Finally, future research should apply CBC-D within diverse populations to better understand potential characteristics that may affect treatment efficacy. This study included three male children and one female child from rural Nebraska and included only compliance as a target behavior. Future studies should investigate CBC-D’s impact and acceptability with a larger variety of ages and ethnicities, more balance in gender, and different rural locations to help clarify for whom the CBC-D process is most effective and acceptable.

Conclusions

Results from this preliminary study of Conjoint Behavioral Consultation via Distance delivery (CBC-D) are mixed. Data did not support a clear treatment effect of CBC-D on child compliance, suggesting that CBC-D may not be an effective intervention with the present sample; however, sensitivity for detecting treatment effects was compromised due to high rates of compliance at baseline, creating a ceiling effect. Given the substantial empirical support for traditional CBC, additional research investigating the efficacy of CBC-D with a higher-needs sample will help clarify its viability as an intervention for improving child behavior.

Data did support CBC-D as an acceptable intervention that can enhance the perceived strength of the parent-teacher relationship for the present sample of rural parents and teachers. Furthermore, the high ratings of CBC-D treatment integrity provide initial evidence that web-based videoconferencing by trained consultants is a feasible delivery method for CBC. Overall, limitations precluded this study from answering the
first research question about the efficacy of CBC-D; however, the acceptability, parent-teacher relationship and treatment integrity data are promising and provide support for further research investigating CBC-D as a viable intervention for rural communities. Future research should build off this study by addressing the noted limitations and replicating the secondary findings related to acceptability, the parent-teacher relationship and treatment integrity.
References


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Journal of Educational Psychology, 97, 617-629. doi:10.1037/0022-0663.97.4.617


DIRECT BEHAVIOR RATING

Child's Name: ___________________________ Date(s): ________________ Circle one: Home or School

Instructions: Write the target behavior in the space provided. Insert the dates for which you are providing information. Circle a point value (1-6) that corresponds to the behavior as you have observed it. Connect the ratings on the graph to monitor progress.

Target Behavior: XXXX conforms to a specific request or command issued by an adult within 10 seconds.

Goal: ____________________________________________________________________________

<table>
<thead>
<tr>
<th>1 = Never (0%)</th>
<th>2 = Rarely (1 - 20%)</th>
<th>3 = Sometimes (21-40%)</th>
<th>4 = Often (41-60%)</th>
<th>5 = Very Often (61-80%)</th>
<th>6 = Almost Always (81-100%)</th>
</tr>
</thead>
</table>

Circle a point value (1-6) that corresponds to the behavior as you have observed it over each day.

<table>
<thead>
<tr>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
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</thead>
<tbody>
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<td>1</td>
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</tbody>
</table>
Appendix B: Behavior Intervention Rating Scale – Parent Version

For the following questions, please fill in the space indicating how strongly you agree or disagree with the statement.

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Disagree Just a Little Bit</th>
<th>Agree Just a Little Bit</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. This was an acceptable model of consultation for the identified problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. Most parents would find this model of consultation suitable for the problem addressed.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. The consultation model was effective in changing the identified problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. I would suggest the use of this consultation model to other parents.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. My child's behavior problem was severe enough to warrant use of this consultation model.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. Most parents would find this model of consultation suitable for the behavior problem addressed.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>7. I would be willing to use this model of consultation again.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. The consultation model did not result in negative side-effects for my child.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. The consultation model would be appropriate for a variety of children.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. This consultation model is consistent with those I have used before.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11. This model of consultation was a fair way to handle my child's problem behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>12. This model of consultation was reasonable for the behavior problem addressed.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Disagree Just a Little Bit</td>
<td>Agree Just a Little Bit</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
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</tr>
<tr>
<td>13.</td>
<td>I liked the procedures used in this model of consultation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14.</td>
<td>This model of consultation was a good way to handle the identified behavior problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15.</td>
<td>Overall, the consultation procedures were beneficial for my child.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

### Appendix C: Parent-Teacher Relationship Scale

The following statements concern your experiences with your child's teacher. Please read each item and use the 5-point scale to indicate the degree to which you feel the statement is true about your experiences with your child's teacher.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Almost Never</th>
<th>Once in a While</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. We trust each other.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. It is difficult for us to work together.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. We cooperate with each other.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Communication is difficult between us.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I respect this teacher.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. This teacher respects me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. We are sensitive to each other’s feelings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. We have different views of right and wrong.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. When there is a problem with my child, this teacher is all talk and no action.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. This teacher keeps his or her promises to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. When there is a behavior problem, I have to solve it without getting help from this teacher.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. When things aren’t going well, it takes too long to work them out.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. We understand each other.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. We see my child differently.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
15. We agree about who should do what regarding my child.

<table>
<thead>
<tr>
<th>Almost</th>
<th>Never</th>
<th>Once in a While</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

16. I expect more from this teacher than I get.

<table>
<thead>
<tr>
<th>Almost</th>
<th>Never</th>
<th>Once in a While</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

17. We have similar expectations of my child.

<table>
<thead>
<tr>
<th>Almost</th>
<th>Never</th>
<th>Once in a While</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

18. The teacher tells me when he or she is pleased.

<table>
<thead>
<tr>
<th>Almost</th>
<th>Never</th>
<th>Once in a While</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

19. I don’t like the way this teacher talks to me.

<table>
<thead>
<tr>
<th>Almost</th>
<th>Never</th>
<th>Once in a While</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

20. I tell this teacher when I am pleased.

<table>
<thead>
<tr>
<th>Almost</th>
<th>Never</th>
<th>Once in a While</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

21. I tell this teacher when I am concerned.

<table>
<thead>
<tr>
<th>Almost</th>
<th>Never</th>
<th>Once in a While</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

22. I tell this teacher when I am worried.

<table>
<thead>
<tr>
<th>Almost</th>
<th>Never</th>
<th>Once in a While</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

23. I ask this teacher’s opinion about my child’s progress.

<table>
<thead>
<tr>
<th>Almost</th>
<th>Never</th>
<th>Once in a While</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

24. I ask this teacher for suggestions.

<table>
<thead>
<tr>
<th>Almost</th>
<th>Never</th>
<th>Once in a While</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Appendix D: Videoconferencing Feedback Scale

Please complete the following scale based on your opinion about today’s consultation meeting.

<table>
<thead>
<tr>
<th>Usability of Technology</th>
<th>Negative</th>
<th>Somewhat Negative</th>
<th>Neutral</th>
<th>Somewhat Positive</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To what extent do you feel the consultant was able to hear you over the videoconferencing?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. To what extent were you able to hear the consultant over the videoconferencing?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. To what extent were you able to see the consultant over the videoconferencing?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Overall I thought the picture quality of the videoconferencing was…?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Before this videoconferencing meeting, how did you feel about using videoconferencing?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Was the consultant’s image on the computer an acceptable size and distance for you?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. To what extent do you feel videoconferencing was a useful way to accomplish the objectives of the meeting?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consultant/Consultee Interaction</th>
<th>Negative</th>
<th>Somewhat Negative</th>
<th>Neutral</th>
<th>Somewhat Positive</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. How comfortable did you feel during the videoconferencing experience?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. How carefully did the consultant listen to what you had to say?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. To what extent did you understand the consultant’s questions?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. To what extent did you feel you could trust the consultant?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. How comfortable were you with the speed at which the consultant spoke?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Satisfaction with Process</td>
<td>Negative</td>
<td>Somewhat Negative</td>
<td>Neutral</td>
<td>Somewhat Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------</td>
<td>-------------------</td>
<td>---------</td>
<td>-------------------</td>
<td>----------</td>
</tr>
<tr>
<td>13. Overall, how satisfied were you with this videoconferencing meeting?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. To what extent did this videoconference meeting affect your preference to use videoconferencing for children’s behavioral concerns in the future?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

**Open-Ended Feedback**

15. What did you like most about using videoconferencing to accomplish the meeting objectives?

16. What was most difficult about using videoconferencing to accomplish the meeting objectives?

17. What changes would you make to using videoconferencing in the future?
Appendix E: Response Style Questionnaire

Grade: _____  Date: ___________  Student Initials: ________  Student Gender: ________

Please identify the child in your classroom with the most concerning noncompliant behaviors and answer the following questions.

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does what you say the first or second time.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Follows your directions.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Is a good listener.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Behaves well when told what to do.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Disobeys you.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Starts doing something else to avoid doing what you said.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. Tries to destroy things.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Ignores you.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. Seems agitated.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. Yells at you.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. Gives poor excuses for why he/she is not following directions.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. Breaks things.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Seems sad.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. Hits, kicks or bites you.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. Seems mad.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. Throws things at you.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. Threatens you.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. Bends the truth about not following directions.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
19. Tells you no. | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

20. Acts like he/she doesn’t hear you. | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

21. Calls you names. | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

22. Gives you an ultimatum, such as “You better let me or else…” | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

23. Says he/she can do what he/she wants instead. | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

24. Says mean things to you. | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

25. Seems irritated. | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

26. Says he/she is going to hit you. | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

27. Physically attacks you. | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

28. Seems angry. | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

29. Seems disappointed. | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

30. Says he/she doesn’t want to do what you have asked, without giving an explanation. | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

31. Makes up reasons that aren’t true to get out of doing what he/she is supposed to. | Never | Rarely | Sometimes | Often | Almost Always |
--- | --- | --- | --- | --- | --- |
0 | 1 | 2 | 3 | 4 |

Appendix F: Behavior Needs Screening Tool

Teacher Name_______________________ School Name_______________________

**Noncompliance** refers to a failure to conform to a specific request or command issued by an adult within 10 seconds.

Please rate the following three items for only the top 3 students you identified from your class as exhibiting noncompliant behavior to the greatest degree.

Student Initials______________________________________________________________

1. The severity of noncompliant behaviors.

<table>
<thead>
<tr>
<th>Very Mild</th>
<th>Somewhat Mild</th>
<th>Moderate</th>
<th>Somewhat Severe</th>
<th>Very Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

2. The frequency of noncompliant behaviors.

<table>
<thead>
<tr>
<th>Very Mild</th>
<th>Somewhat Mild</th>
<th>Moderate</th>
<th>Somewhat Severe</th>
<th>Very Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

3. The need for additional intervention.

<table>
<thead>
<tr>
<th>No Need</th>
<th>Moderate Need</th>
<th>Significant Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Appendix G: Videoconferencing Etiquette Form

Teacher/Parent Tips

1. Choose a room that limits the number of possible interruptions or distractions (e.g., people coming in or out of room; big enough to fit everyone comfortably).

2. Ensure that the consultant can hear and see you at the beginning of each meeting.

3. When speaking remember to look at the camera as it gives consultant the impression you are making eye contact with them.

4. Speak using normal volume and tone. The microphones are sensitive so you do not need to raise your voice or yell to be heard.

5. Always wait until other speakers have finished before speaking and use names to direct questions to specific people to avoid confusion.

6. Give each person plenty of time to answer your questions or make a comment. Ensure they have finished before you speak again.

7. If there are windows in the room, close any drapes or blinds. Daylight is a variable light source and can conflict with interior room lighting.

8. Restrict unnecessary movement. The video at each site will become blurry if there is constant movement and the camera has to continually refocus.

9. Use natural gestures when you speak.

10. Make sure the camera captures as much of each person as possible so as to simulate what could be seen if the other person were in the room with you.

Information for this form was derived from free internet publications from the following sources: the University of Virginia Office of Telemedicine, POLYCOM, and Charles Sturt University.
Appendix H: Technology Trouble-Shooting Guide

I. What to do if you cannot join the WebEx meeting?

a. If the joining process of the WebEx meeting takes more than 5 minutes, call the consultant to let him/her know of the delay and then close that window and try to join through the email a second time.

b. If the second attempt does not work, let the consultant know and he/she will set up a new meeting through WebEx and follow the same procedures above for the new meeting.

c. If the second meeting attempt does not work, coordinate with the consultant to either reschedule the meeting or conduct the meeting by phone. If during school hours, contact your school technology support personnel for assistance. The consultant will be in touch with our CYFS technology support to problem-solve.

II. What to do in the event there is an audio/video crash and you are disconnected from the WebEx server?

a. If you are disconnected from WebEx, call the consultant’s cell phone immediately to discuss next steps for getting re-connected.

b. The consultant will set up another meeting and you can join following the same directions used for joining a WebEx meeting.

III. What to do if the video stops working or freezes?

a. If the video freezes or stops working but the audio is normal, check to see if the computer is plugged in using the Ethernet cord.

b. If the Ethernet cord is not plugged in, plug it in and continue with the meeting.

c. If the Ethernet cord is plugged in, continue with the meeting as normal using audio-only communication.
Appendix I: CBC Interview Forms

Conjoint Needs Identification Interview (CNII)

Child’s Name: _______________________________ Date: __________
Parent’s Name: _______________________________ Age: __________
Teacher’s Name: _______________________________ Grade: __________
School: ___________________________________________
Consultant’s Name: _______________________________

Consultant Note: The goals of the CNII are to:

Behavioral goals:

- Jointly identify and define child’s priorities in behavioral terms.
- Jointly establish a procedure to collect baseline data across setting.

Relationship building goals:

- Identify strengths of the child, family, and school.
- Establish joint responsibility in goal setting and decision making.
- Establish/improve working relationships between parents and teacher, and between the consultant and consultees.
- Validate shared goals of supporting the child.
- Increase communication and knowledge regarding the child, goals, concerns, and culture of family and school.

Consultant and Case Goals for Interview:

______________________________________________________________________________________________
______________________________________________________________________________________________
______________________________________________________________________________________________
______________________________________________________________________________________________
______________________________________________________________________________________________
______________________________________________________________________________________________
______________________________________________________________________________________________
______________________________________________________________________________________________
______________________________________________________________________________________________
______________________________________________________________________________________________

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Conjoint Needs Identification Interview (CNII)

SOCIAL OPENING

Establish a friendly supportive atmosphere (e.g., position of the chairs, nonverbal communication); demonstrate interest for the consultee (e.g., ask about past events)

Notes:

OPEN UP DIALOGUE

Establish the attitude that everyone’s information is vital; use inclusive language; emphasize the expertise of everyone involved; discuss the importance and roles of each participant (i.e., provide information, collect/set-up assessment and observations); discuss steps of the meeting

Notes:

DISCUSS CHILD, FAMILY, AND TEACHER STRENGTHS

Discuss things that are going well; discuss likes and dislikes; establish importance of building upon strengths of all when addressing priorities

Notes:

Home School
**DISCUSS GOALS AND DESIRES**

Discuss goals, aspirations, and desires for the child in the short and long term; emphasize importance of consultees’ identified goals and sharing of information regarding developmental appropriateness of expectations

<table>
<thead>
<tr>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Home</th>
<th>School</th>
</tr>
</thead>
</table>

**SELECT NEEDS**

Discuss what might get in the way of the goals and desires; explore general concerns

<table>
<thead>
<tr>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Home</th>
<th>School</th>
</tr>
</thead>
</table>

**SUMMARIZE/Validate Goals and Needs.** Begin building a bridge for shared goals and cross-setting similarities.
SELECT/DEFINE THE PRIORITY

Discuss importance of selecting one priority; select a priority based on goals and desires; define the priority in concrete, observable terms

Notes:

Home                      School

SUMMARIZE/Validate the definition of the priority

SELECT A FOCUS/SETTING

Discuss importance of focus; answer where and when the priority behavior occurs in specific terms; select a focus or a place to start

Notes:

Home                      School
WHAT WORKS/WHAT DOESN’T?

Discuss what has already been tried; point out strengths from what has already worked to be used later in coming up with a plan; emphasize strengths of consultees

Notes:

<table>
<thead>
<tr>
<th>Home</th>
<th>School</th>
</tr>
</thead>
</table>

COLLECT INFORMATION

Discuss the rationale for collecting information; select a specific time, place and procedure; provide consultees with charts to record information; discuss rationale of watching what happens before and after the priority behavior, as well as specific patterns that occur; establish times for consultant to observe

Notes:

What will be observed? | Home | School
Where will observation occur?
How will it be recorded?
When will observation begin?

Provide parents and teachers with data collection forms

SUMMARIZE/Validate Data Collection Procedures
MEET AGAIN

Discuss steps of the next meeting, establish time and place to meet

CLOSING

Summarize what was accomplished at the meeting, emphasizing consultees’ expertise, strengths, and how this information will help the child to be successful; exchange phone numbers and e-mail addresses; let parents and teachers know they are free to contact you with questions and concerns and remind them you will check in to see how information gathering is going

Notes:
Conjoint Needs Analysis Interview (CNAI)

Child’s Name: _____________________  Date: __________

Parent’s Name: _____________________  Age: __________

Teacher’s Name: _____________________  Grade: __________

School: _______________________________

Consultant’s Name: _____________________

Consultant Note: The goals of the CNAI are to:

Behavioral goals:

  o Evaluate information collected across home and school.
  o Collaboratively develop developmentally appropriate goals for priority behavior across home and school.
  o Discuss what is happening before and after the priority behavior, as well as specific patterns that occur, during the focused time/setting.
  o Collaboratively develop a plan built upon strengths and competencies to address the priority behavior across home and school.
  o Reaffirm information collection procedures.

Relationship building goals:

  o Use inclusive language to strengthen partnerships between home and school
  o Encourage and validate sharing of parents’ and teachers’ perspectives of the priority behavior
  o Foster an environment that facilitates “give-and-take” communication across settings.
  o Promote collaborative decision-making and shared responsibility for plan development.

Consultant and Case Goals for Interview:

____________________________________________________________________________

____________________________________________________________________________

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Conjoint Needs Analysis Interview (CNAI)

SOCIAL OPENING

Establish a friendly supportive atmosphere (e.g., position of the chairs, nonverbal communication); demonstrate interest for the consultee (e.g., ask about past events)

Notes:

OPEN UP DIALOGUE

Re-emphasize the attitude that everyone’s input is vital; continue to use inclusive language; discuss steps of the meeting

Notes:

DISCUSS INFORMATION COLLECTED/SET GOALS

Restate the definition of the priority; discuss information collected; set jointly determined, developmentally appropriate goals based on information collected

Notes:

Home School

SUMMARIZE information collected and connect to goals set
**WHAT’S HAPPENING?**

Discuss what is happening before and after the priority behavior, as well as specific patterns that occur, during the focused time/setting; emphasize this information will help to understand why this behavior is happening and how changes can be made.

**Before**

<table>
<thead>
<tr>
<th>Notes :</th>
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<tbody>
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<td>Home</td>
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**After**

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<td>Home</td>
<td>School</td>
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**Other Patterns**

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<td>Home</td>
<td>School</td>
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</table>
WHY IS IT HAPPENING?

Summarize information gathered, as well as what’s happening during the focused time/setting (organize and summarize relevant information such as attention that is given, key people that affect the occurrence of the priority behavior, skills needed to perform the desired behavior); discuss reasons why the priority behavior is happening.

Notes:

Home       School

WHAT TO DO?

Select a focus for change based on why the priority behavior is happening; restate child, teacher and family strengths; jointly develop a plan across home and school, building on these strengths; write down a summary of steps of the plan for parents and teachers; provide an opportunity for parents and teachers to ask questions; model plan procedures if necessary.

Notes:

Home       School

Summarize plan; Provide parents and teachers with Plan Worksheet.
COLLECT INFORMATION

Re-emphasize the rationale for collecting information; select a specific time, place and procedure; provide parents and teachers with charts to record information.

Notes:

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<th>Home</th>
<th>School</th>
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<tr>
<td>What will be observed?</td>
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<td>Where will observation occur?</td>
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<tr>
<td>How will it be recorded?</td>
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<tr>
<td>When will observation begin?</td>
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</table>

SUMMARIZE/Validate Data Collection Procedures
Provide parents and teachers with data collection form

MEET AGAIN

Discuss steps of the next meeting; establish time and place to meet

CLOSING

Summarize what was accomplished at the meeting, emphasizing consultees’ expertise, strengths, and how this information will help the child to be successful; let consultees know they are free to contact you with questions and concerns and remind them you will communicate frequently to see how the plan is going.

Notes:
Conjoint Plan Evaluation Interview (CPEI)

Child’s Name: _______________________________  Date: ____________
Parent’s Name: _____________________________  Age: ____________
Teacher’s Name: _____________________________  Grade: ____________
School: ______________________________________
Consultant’s Name: ___________________________

Consultant Note: The goals of the CPEI are to:

*Behavioral goals:*
  - Determine if the goals for the priority behavior have been met.
  - Evaluate what worked and what didn’t.
  - Discuss continuation or termination of plan.
  - Schedule additional interview if necessary, or terminate consultation.

*Relationship building goals:*
  - Continue to promote open communication and collaborative decision-making across the home and school settings.
  - Reinforce joint efforts in addressing needs.
  - Discuss caregivers’ and teachers’ perceptions of the plan and process.
  - Reinforce caregivers’ and teachers’ strengths and competencies for addressing future needs for the child.
  - Establish means for caregivers and teachers to continue to partner in the future.

Consultant and Case Goals for Interview:
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________

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Conjoint Plan Evaluation Interview (CPEI)

SOCIAL OPENING

Establish a friendly supportive atmosphere (e.g., position of the chairs, nonverbal communication); demonstrate interest for the consultee (e.g., ask about past events)

Notes:

OPEN UP DIALOGUE

Re-emphasize the attitude that everyone’s input is vital; continue to use inclusive language; discuss steps of the meeting

Notes:

HOW DID IT WORK/WHAT HAPPENED?

Restate the plan and the goals; discuss how the plan worked and if the goals were met; decide where to go from here (e.g., modify plan, set a new goal, use plan in another setting, end consultation)

Notes:

Home School
CHANGE PLAN

Discuss what worked and what didn’t, emphasizing strengths of the plan; it may be necessary to re-evaluate what is happening before and after, as well as specific patterns, and why the priority behavior is occurring; refer to previous interview forms.

Notes:

| Home | School |

CONTINUE THE PLAN

Discuss how to continue positive changes over time; discuss continuing the plan (e.g., other times and settings) OR gradually removing the plan.

Notes:

| Home | School |
DISCUSS NEED FOR FUTURE MEETING

Discuss if a formal meeting is necessary; discuss informal methods (e.g., e-mail, phone calls, home school notes), emphasizing the value of continued communication; discuss plan for follow-up and provide caregivers and teachers with extra plan worksheets and data collection forms

Notes:

<table>
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<th>Home</th>
<th>School</th>
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</table>

WHAT WORKED/WHAT DIDN’T

Summarize the plan and the partnership building process, emphasizing collaborative decision making, strengths, expertise, and home school communication; discuss what caregivers and teachers thought about why the behavior changed, as well as what worked and what didn’t with the plan and the process; discuss how you might use similar ideas to address future needs, emphasizing specific plans to address priorities, as well as the collaborative decision-making process; discuss if caregivers and teachers were satisfied with the results

Notes:

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END CONSULTATION

Discuss ways to keep in touch with each other
# Appendix J: Plan Summary Form

## Hugh’s Plan Summary Form at School

**Date** (Monday of week):  

Please indicate if you completed each step by circling Yes or No. Circle NA if the step is not applicable due to circumstances like student behavior, schedule change or absence.

**Goal:** Hugh will comply with 90% of directions given during his morning routine at school.

<table>
<thead>
<tr>
<th>Plan Steps</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
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</thead>
<tbody>
<tr>
<td>1. Review Hugh’s e-mail from home. Provide him with praise if he got a good report from home (<em>see Effective Praise handout</em>)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td></td>
<td>No</td>
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<td>NA</td>
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<tr>
<td>2. Each morning, provide Hugh with his morning checklist and remind him that he can earn tickets if he starts his tasks right away and completes them within a reasonable amount of time</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>NA</td>
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<tr>
<td>3. Provide Hugh with labeled praise when he starts a task right away and completes it within a reasonable amount of time (<em>see Effective Praise handout</em>) and allow him to check the task off of his checklist</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>4. Avoid arguing with Hugh by ignoring instances of noncompliance (within reason)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>5. If Hugh starts and completes most of his morning tasks (i.e., 6 out of 7) within a reasonable amount of time, provide him with a ticket</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>6. Let Hugh choose a reward from his reward menu if he receives 10 tickets and provide him with that reward</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>7. Send an e-mail home each day with Hugh rating for the day, if he earned a ticket and/or reward, and at least one positive comment about his day</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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Appendix K: CBC Fidelity Measure Matrices

Fidelity Measure Matrix: Meeting 1: Conjoint Needs Identification Interview (CNII)

**Purpose:** To assess the adherence and quality with which the structural and relational objectives of problem solving are met during parent-teacher meetings.

**Definitions of Participants:** The term “parent” refers to at least one representative of the home setting (e.g., mom, dad, guardian, etc.) who provides direct care to the child. The term “teacher” refers to at least one representative from the school setting (e.g., classroom teacher, special education teacher, resource teacher, or related service provider) who provides instruction or services to the child in an educational setting. The term “facilitator” refers to the consultant whose role is to facilitate the meeting between the teacher and the parent.

**How to Use and Score:** Use the measure for core meeting objectives (structural and relational) when the purpose of the meeting is to identify the needs of the child. This measure is appropriate to use when there is at least one home representative and at least one school representative participating in the meeting.

**For each objective:**
- Determine the description that best captures the quality with which the objective was accomplished (i.e., 0, 1, or 2).
  - In the **Score** box, fill in the bubble in that corresponds with the score (i.e., 0, 1, 2). *Do not make any additional marks in this box.*
  - Fill in bubbles:

| Like this: | 0 |
| Not like this: | 0 | 1 | 2 |

- Use the **Notes** box to record any important information about coding decisions.

- **While listening to the meeting, tally the number of positive, encouraging, supportive statements, or reflections AND negative statements.**
  - **Encouraging Statements:** The meeting facilitator praises or emphasizes specific and concrete parent/teacher behaviors, efforts, or verbal contributions during the meeting, and their impact on the problem solving process (e.g., expressions of “great,” “good job,” “way to go,” “thank you”).
  - **Empathetic Statements:** After a parent/teacher makes a statement or if there is an indication from what the facilitator says that the parent/teacher has previously expressed their perspective on a topic, the meeting facilitator shows an ability to communicate a shared perspective with the parent/teacher, and puts the situation in perspective through an understanding of the parent/teachers' experiences (e.g., “I see where you are coming from,” “I can see how that could be frustrating,” “I know you guys are already running a tight schedule”).
  - **Reflections:** The meeting facilitator listens for and responds to the feelings of the parent/teacher at appropriate times by restating what he or she is experiencing in the meeting facilitator's own words (e.g., “You seem to be feeling pretty frustrated.”)
  - **Negative Statements:** When the parent/teacher makes a negative expression about the process, another meeting participant (e.g., “You don’t care about my child”), or the character of the child of focus (e.g., expression that the child is “manipulative,” “mean”). Identification of the needs of the child (“the child is noncompliant”) is not considered a negative statement.
• Circle the negative statements that were redirected by the consultant
  o **Redirections:** The meeting facilitator changes the course of the discussion in an effort to establish or maintain a constructive problem solving process.

For **total scores** (see last page of coding form):
• Record the total number (i.e., positive statement tallies) of constructive, encouraging, supportive statements or reflections.
• Record the percentage of redirections made by the meeting facilitator in response to negative statements made by the parent and/or teacher (i.e., number of redirections/total number of negative statements).
• Record the overall occurrence score using bubbles.
  o Code each 0 as a score of 0. Code each 1 or 2 as a score of 1.
• Record the quality index using bubbles.
  o Add up scores for all items (i.e., 0, 1, or 2).
• Record the duration (in minutes) of the meeting
  o The meeting **starts** when the facilitator gives a verbal cue to initiate the meeting (e.g., “Let’s begin”) and the meeting **ends** when the facilitator gives a verbal cue to end the meeting (e.g., “Our next meeting is scheduled for...”).
<table>
<thead>
<tr>
<th></th>
<th>Goals</th>
<th>Objectives</th>
<th>0 (Not Effective)</th>
<th>1 (Moderately Effective)</th>
<th>2 (Highly Effective)</th>
<th>Tallies</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Meeting participants collaboratively discussed strengths and needs of the child</td>
<td>Discussed the strengths of the child</td>
<td>• Participants did not describe the child's general strengths</td>
<td>• Either the teacher or the parents (but not both) described the child's general strengths or agreed with strengths described by someone else in the meeting</td>
<td>• Both the teacher AND the parent described the child's general strengths or agreed with strengths described by someone else in the meeting</td>
<td>Negative Statements (circle redirections):</td>
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<td>Positive Statements:</td>
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<th>Objectives</th>
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<th>Tallies</th>
<th>Score</th>
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<tbody>
<tr>
<td>2.</td>
<td>Meeting participants collaboratively reviewed the preselected target behavior</td>
<td>Review the target behavioral definition of noncompliance</td>
<td>• Participants did not review the target behavior</td>
<td>• The target behavior was reviewed AND EITHER</td>
<td>• The target behavior was reviewed AND</td>
<td>Negative Statements (circle redirections):</td>
<td>0 Not Effective</td>
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<td></td>
<td>• Agreed upon by one participant (e.g., parent, teacher, facilitator)</td>
<td>• Agreed upon by at least the parent AND the teacher</td>
<td>Positive Statements:</td>
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<td>2 Highly Effective</td>
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Notes:
### Meeting 1: Conjoint Needs Identification Interview (CNII)

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<th>Tallies</th>
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<tbody>
<tr>
<td>3.</td>
<td>Defined the target behavior objectively and measurably</td>
<td>- The target behavior was not defined objectively and measurably (e.g., unobservable or subjective terms were used)</td>
<td>- The target behavior was defined objectively and measurably (i.e., observable terms were used and subjective terms were clarified) AND</td>
<td>- The target behavior was defined objectively and measurably (i.e., observable terms were used and subjective terms were clarified) AND</td>
<td>Both the teacher and the parent acknowledged or agreed with the definition of the target behavior</td>
<td>Negative Statements (circle redactions):</td>
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**Notes:**
### Meeting 1: Conjoint Needs Identification Interview (CNII)

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<tbody>
<tr>
<td>4.</td>
<td>Selected and clarified a priority setting in which to address the target behavior</td>
<td>• Participants did not identify a target setting that included a specific time and place</td>
<td>• A specific time and/or location was indicated AND</td>
<td>• Both the teacher and/or location was indicated AND</td>
<td>• Both the teacher and/or location was indicated AND</td>
<td>Negative Statements (circle redactions):</td>
<td>0</td>
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<td>Positive Statements:</td>
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<tbody>
<tr>
<td>5.</td>
<td>Identified previous strategies for what has worked in the past and what has not worked in the past to address the target behavior.</td>
<td>Participants did not identify previous strategies for what has worked in the past and what has not worked in the past.</td>
<td>Previous strategies were identified AND Either the teacher or the parent but not both contributed to, acknowledged or agreed with the previous strategies for addressing the target behavior</td>
<td>Previous strategies were identified AND Both the teacher AND the parent contributed to, acknowledged or agreed with the previous strategies for addressing the target behavior</td>
<td>Negative Statements (circle directions): Positive Statements:</td>
<td>0 Not Effective</td>
<td>1 Moderately Effective</td>
</tr>
</tbody>
</table>

Notes:
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<tr>
<th>Item</th>
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</thead>
<tbody>
<tr>
<td>6.</td>
<td>Baseline data collection procedures using the Direct Behavior Rating were reviewed</td>
<td>Established a procedure for baseline data collection that included: <em>procedural details</em> (i.e., who, what, when, where and how) AND <em>measurement details</em> (e.g., a measure of frequency, duration, intensity or latency)</td>
<td>- Participants did not delineate the procedural and measurement details of baseline data collection</td>
<td>- A procedure for collecting baseline data was established AND - Only one participant was assigned roles</td>
<td>- A procedure for collecting baseline data was established AND - Both the teacher AND the parent were assigned roles</td>
<td>Negative Statements (circle redirections):</td>
<td>0</td>
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</tbody>
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**Notes:**
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<tbody>
<tr>
<td>7</td>
<td>Meeting facilitator fostered and developed a working relationship among all participants</td>
<td>Meeting facilitator developed a working relationship with participants</td>
<td>• Provided no positive, encouraging, or supportive statements or reflections OR • Made statements and reflections that negatively impacted relationships among meeting participants</td>
<td>• Provided 3 or fewer positive, encouraging, empathetic statements or reflections • Responded constructively or nonverbally (e.g., ignoring) redirected less than 50% of negative statements</td>
<td>• Provided 4 or more positive, encouraging, empathetic statements or reflections • Responded constructively or redirected 20% or more negative statements</td>
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<th>Objectives</th>
<th>0 (Not Effective)</th>
<th>1 (Moderately Effective)</th>
<th>2 (Highly Effective)</th>
<th>Tallies</th>
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<td>8.</td>
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<td>Facilitator validated participants' ideas and responded to disagreement appropriately</td>
<td>- If participants did not generate ideas in support of student outcomes, the facilitator did not invite participants’ ideas, observations or suggestions OR.</td>
<td>- If participants did not generate ideas in support of student outcomes, the facilitator invited them to share their ideas, observations, or suggestions in support of student outcomes OR.</td>
<td>- If participants did not generate ideas in support of student outcomes, the facilitator invited them to share their ideas, observations, or suggestions in support of student outcomes OR.</td>
<td>0 Not Effective</td>
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<td>- Facilitator ignored or was not openly supportive of participants’ ideas, observations, or suggestions in support of student outcomes OR.</td>
<td>- Facilitator acknowledged or responded constructively to less than 50% of ideas, observations or suggestions provided by participants OR.</td>
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<td>- If disagreement, conflict or confusion were present, facilitator did not ensure a resolution</td>
<td>- If disagreement, conflict or confusion were present, facilitator made a decision in the absence of generating an open discussion</td>
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<td>9.</td>
<td>Participants fostered a working relationship with each other</td>
<td>Joint responsibility was established among participants for the student’s identified need(s)</td>
<td>• Roles and/or responsibilities were not clearly established for any participant</td>
<td>• Roles and/or responsibilities were clearly established AND • Responsibility regarding baseline data collection was assumed by or delegated to only one participant (i.e., parent, teacher, and facilitator)</td>
<td>• Roles and/or responsibilities were clearly established for parent, teacher, and facilitator AND • Responsibility regarding baseline data collection was shared among the participants (i.e., parent, teacher, and facilitator)</td>
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<td>10.</td>
<td>Participants engaged in open and multidirectional communication</td>
<td>Open and multidirectional communication was facilitated and all participants were heard</td>
<td>• One participant (either the teacher, parent, facilitator, or other) dominated the discussion</td>
<td>• One of the teacher or parent maintained involvement throughout the discussion without dominating the conversation AND • The other teacher or parent did not engage in the process or share pertinent information</td>
<td>• Both the teacher and parent maintained involvement throughout the discussion without dominating the conversation</td>
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<td>Not Effective</td>
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Total Scores

- Total number of constructive, encouraging, supportive statements or reflections: ____________
- Percentage of redirections made by facilitator in response to negative statements made by parents and/or teachers: ____________
  - To derive percentage calculate the total number of redirections made by the facilitator (i.e., circled negative statement tallies): ____ / total number of negative statements made by parent or teacher (i.e., negative statement tallies): _______
- Duration of meeting: ______ minutes ______ seconds
- Occurrence: code each 0 as a score of 0. Code each 1 or 2 as a score of 1. Indicate the TOTAL score (i.e. out of 10): ___________
- Quality Index: add up scores for all 10 items (can earn 0, 1, or 2). TOTAL score (i.e., out of 20): ___________
Fidelity Measure Matrix: Meeting 2: Conjoint Needs Analysis Interview (CNAI)

**Purpose:** To assess the adherence and quality with which the structural and relational objectives of problem solving are met during parent-teacher meetings.

**Definitions of Participants:** The term “parent” refers to at least one representative of the home setting (e.g., mom, dad, guardian, etc.) who provides direct care to the child. The term “teacher” refers to at least one representative from the school setting (e.g., classroom teacher, special education teacher, resource teacher, or related service provider) who provides instruction or services to the child in an educational setting. The term “facilitator” refers to the consultant whose role is to facilitate the meeting between the teacher and the parent.

**How to Use and Score** Use the measure for core meeting objectives (structural and relational) when the purpose of the meeting is to identify the needs of the child. This measure is appropriate to use when there is at least one home representative and at least one school representative participating in the meeting.

**For each objective:**
- Determine the description that best captures the quality with which the objective was accomplished (i.e., 0, 1, or 2).
  - In the **Score** box, fill in the bubble that corresponds with the score (i.e., 0, 1, 2). *Do not make any additional marks in this box.*
  - Fill in bubbles:
    - Like this:
    - Not like this:
  - Use the **Notes** box to record any important information about coding decisions

- While listening to the meeting, tally the number of positive, encouraging, supportive statements, or reflections AND negative statements.
  - **Encouraging Statements:** The meeting facilitator praises or emphasizes specific and concrete parent-teacher behaviors, efforts, or verbal contributions during the meeting, and their impact on the problem-solving process (e.g., expressions of “great,” “good job,” “way to go,” “thank you!”).
  - **Empathetic Statements:** After a parent/teacher makes a statement or if there is an indication from what the facilitator says that the parent/teacher has previously expressed their perspective on a topic, the meeting facilitator shows an ability to communicate a shared perspective with the parent/teacher, and puts the situation in perspective through an understanding of the parent/teachers’ experiences (e.g., “I see where you are coming from.” “I can see how that could be frustrating.” “I know you guys are already running a tight schedule”).
  - **Reflections:** The meeting facilitator listens for and responds to the feelings of the parent/teacher at appropriate times by restating what he or she is experiencing in the meeting facilitator’s own words (e.g., “You seem to be feeling pretty frustrated.”)
  - **Negative Statements:** When the parent/teacher makes a negative expression about the process, another meeting participant (e.g., “You don’t care about my child”), or the character of the child of focus (e.g., expression that the child is “manipulative,” “mean”). Identification of the needs of the child (“the child is noncompliant”) is not considered a negative statement.
• Circle the negative statements that were redirected by the consultant
  o **Redirections:** The meeting facilitator changes the course of the discussion in an effort to establish or maintain a constructive problem solving process.

For total scores (see last page of coding form):
• Record the total number (i.e., positive statement tallies) of constructive, encouraging, supportive statements or reflections.
• Record the percentage of redirections made by the meeting facilitator in response to negative statements made by the parent and/or teacher (i.e., number of redirections/total number of negative statements).
• Record the overall occurrence score using bubbles.
  o Code each 0 as a score of 0. Code each 1 or 2 as a score of 1.
• Record the quality index using bubbles.
  o Add up scores for all items (i.e., 0, 1, or 2).
• Record the duration (in minutes) of the meeting
  o The meeting **starts** when the facilitator gives a verbal cue to initiate the meeting (e.g., “Let’s begin”) and the meeting **ends** when the facilitator gives a verbal cue to end the meeting (e.g., “Our next meeting is scheduled for…”).
### Meeting 2: Conjoint Needs Analysis Interview (CNAI)

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<tr>
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<tbody>
<tr>
<td>1.</td>
<td>Meeting participants collaboratively shared and reviewed baseline information</td>
<td>Discussed the baseline data (actual data collected prior to plan implementation) of the target behavior</td>
<td>• Participants did not collect or discuss baseline data</td>
<td>• Either the teacher or the parent (but not both) shared discussed baseline data they collected</td>
<td>• Both the teacher AND the parent shared discussed baseline data</td>
<td>Negative Statements (circle directions):</td>
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<td>Positive Statements:</td>
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<td>2.</td>
<td>Meeting participants agreed upon a goal for behavior change</td>
<td>Baseline data were used to set the goal; the goal was objective, measureable, and related to the behavior targeted for change</td>
<td>• Either no goal was set, or a goal was set without being informed by baseline data</td>
<td>• The goal set was informed by the baseline data AND • Either the teacher or the parent (but not both) set or agreed to the goal</td>
<td>• The goal set was informed by the baseline data AND • The teacher and the parent set or agreed to the goal</td>
<td>Negative Statements (circle redactions): Positive Statements:</td>
<td>0 Not Effective 1 Moderately Effective 2 Highly Effective</td>
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<td>3.</td>
<td>Meeting participants collaboratively discussed the function of the behavior through use of baseline data (e.g., data about the frequency, intensity, duration of the target behavior, and conditions that elicit or maintain the target behavior)</td>
<td>Discussed the function of the behavior through the use of baseline data</td>
<td>Participants did not discuss the function of the behavior</td>
<td>The function of the target behavior was discussed AND Either the teacher or the parent but not both contributed to the discussion of the function of the target behavior AND The parent and teacher agreed OR If different perspectives were shared, they were dismissed or not validated</td>
<td>The function of the target behavior was discussed AND Both the teacher AND the parent contributed to the discussion of the function of the target behavior AND The parent and teacher agreed OR If different perspectives were shared, they were validated, discussed and a mutual consensus was reached</td>
<td>Negative Statements (circle redactions):</td>
<td>0 Not Effective</td>
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<td>4.</td>
<td>Participants collaboratively developed an intervention plan</td>
<td>Developed an intervention plan that addressed the function of the target behavior, was informed by the baseline data, and addressed the key conditions (i.e., establishing operations, antecedents, and consequences) that elicit or maintain the behavior</td>
<td>• Participants did not develop an intervention plan</td>
<td>• Some, but not all, plan components were developed collaboratively by all participants (i.e., each participant contributed to the development of the plan) OR • Plan components (all or some) were developed collaboratively by all participants (i.e., each participant acknowledged or agreed to the plan) OR • Plan components (all or some) were decided upon by the facilitator and either the parent or the teacher but not both OR • Plan components (all or some) were decided on by one participant (e.g., parent, teacher, facilitator)</td>
<td>• All plan components were developed collaboratively by all participants (i.e., each participant contributed to the development of the plan)</td>
<td>Negative Statements (circle redactions):</td>
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<td>Positive Statements:</td>
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<tr>
<td>5.</td>
<td>Developed a plan that included a reward component</td>
<td>Plan omitted a reward component</td>
<td>Stated that the plan included a reward component AND</td>
<td>Developed a plan that included a reward component that is contingent on the target behavior AND</td>
<td>Negative Statements (circle redirections):</td>
<td>0</td>
<td>Not Effective</td>
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<td></td>
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<td></td>
<td>Did not identify reward ideas OR</td>
<td>Identified reward ideas AND</td>
<td>Positive Statements:</td>
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<td>Moderately Effective</td>
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<td>The timing of the reward delivery was not discussed OR</td>
<td>Discussed the timing of the reward delivery AND</td>
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<td>Highly Effective</td>
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<td>Either the teacher or the parent (but not both) contributed to or agreed with reward component</td>
<td>The teacher and the parent contributed to or agreed with the reward component</td>
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<td>6</td>
<td></td>
<td>Developed a plan that included a communication method between home and school</td>
<td>• Plan omitted a home-school communication method</td>
<td>• Developed a plan that included a communication method between home and school AND</td>
<td>• Developed a plan that included a communication method between home and school (communication is bi-directional) AND</td>
<td>- Negative Statements (circle redactions):</td>
<td>0</td>
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|       |       | Did not discuss the method (e.g., note, email, phone call) and/or the schedule (e.g., every day, once per week) OR | | | | | |
|       |       | The method and schedule were decided on by one participant and the other participants acknowledged or agreed | | | | | |

| Notes: |       | | | | | | |

|       | Positive Statements: | 1 | Moderately Effective |
|       |                        |   |                        |

|       |                        | 2 | Highly Effective |
|       |                        |   |                        |
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<td>7.</td>
<td>Developed a plan that included a component to address the hypothesized function of the behavior (e.g., attention, escape)</td>
<td>• Plan omitted a component designed to address the function of the behavior, including the key components that elicit or maintain the behavior</td>
<td>• Developed a plan that included a component to address the function of the behavior, including the key components that elicit or maintain the behavior AND • The component was decided on by the facilitator and the parent and/or teacher acknowledged or agreed</td>
<td>• Developed a plan that included a component to address the function of the behavior, including the key components that elicit or maintain the behavior AND • The component was developed collaboratively (i.e., each participant contributed to the development of the component)</td>
<td>Negative Statements (circle redirection):</td>
<td>0  Not Effective</td>
<td>1  Moderately Effective</td>
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<td>8.</td>
<td>Developed a plan that was acknowledged as feasible (e.g., amount of time required for delivery, ease of use of materials)</td>
<td>• There was not discussion of the feasibility of the plan OR • Concerns were expressed about the feasibility of the plan, but were not acknowledged by the facilitator AND • No adjustments were made and no consensus about the plan was reached</td>
<td>• Plan was acknowledged as not feasible (e.g., too cumbersome, too much time required for delivery, materials were complex) OR • Concerns were expressed about the feasibility of the plan and were acknowledged by the facilitator, but no adjustments were made and no consensus about the plan was reached OR • Concerns were expressed about the feasibility of the plan and adjustments were made to address some concerns, but not all concerns expressed</td>
<td>• Developed a plan that was acknowledged as feasible (e.g., amount of time required for delivery, ease of use of materials) AND • The plan was feasible OR • If concerns about feasibility of the plan were expressed, adjustments were made and consensus about the plan was reached</td>
<td>Negative Statements (circle redactions):</td>
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| 9.   | Meeting participants collaboratively confirmed and agreed upon intervention data collection procedures | Confirmed a procedure for intervention data collection that was consistent with the baseline data collection procedure | • Participants did not delineate the procedural and measurement details of data collection OR  
• No participants indicated an understanding of their responsibilities in data collection procedures (e.g., either indicated a lack of understanding without eventual clarification and understanding; or confirmation of their understanding was not sought) | • A procedure for collecting data was confirmed for home or school AND  
• At least one participant (i.e., teacher, parent, or consultant) emphasized the importance of collecting intervention data to evaluate the effectiveness of the plan | • A procedure for collecting data was confirmed AND  
• All participants acknowledged that they would continue to collect data during the intervention implementation phase AND  
• At least one participant emphasized the importance of collecting intervention data to evaluate the effectiveness of the plan | Negative Statements (circle directions):  
Positive Statements: | 0 Not Effective | 1 Moderately Effective | 2 Highly Effective |

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<td>10.</td>
<td>Facilitate a discussion of next steps in consultation process.</td>
<td>Jointly and clearly establish next steps (e.g., time to meet again) of the process</td>
<td>• Facilitator did not discuss next steps</td>
<td>• Next steps were discussed AND • Responsibility was assumed by or delegated to one participant (i.e., parent, teacher, or facilitator)</td>
<td>• Next steps were discussed by parent, teacher, and facilitator AND • Responsibility was assumed by all participants (e.g., all agreed to attend next meeting).</td>
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<td>11.</td>
<td>Meeting facilitator maintained a working relationship among all meeting participants</td>
<td>Meeting facilitator maintained a working relationship with participants</td>
<td>• Provided no positive, encouraging, or supportive statements or reflections OR • Facilitator made statements and reflections that negatively impacted relationships among meeting participants</td>
<td>• Provided 1-3 positive, encouraging, empathetic statements or reflections OR • If parent and/or teacher made negative statements, the facilitator responded constructively or verbally or non-verbally (e.g., ignoring) redirected less than 50% of negative statements</td>
<td>• Provided 4 or more positive, encouraging, empathetic statements or reflections AND • If parent and/or teacher made negative statements, the facilitator responded constructively or redirected 50% or more negative statements</td>
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<td>12.</td>
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<td>Facilitator validated participants' ideas and responded to disagreement appropriately</td>
<td>• If participants did not generate ideas in support of student outcomes, the facilitator did not invite participants' ideas, observations or suggestions OR.</td>
<td>• If participants did not generate ideas in support of student outcomes, the facilitator invited them to share their ideas, observations, or suggestions in support of student outcomes OR.</td>
<td>• If participants did not generate ideas in support of student outcomes, the facilitator invited them to share their ideas, observations, or suggestions in support of student outcomes OR.</td>
<td>• Facilitator acknowledged or responded positively to more than 50% of ideas, observations or suggestions provided by participants AND.</td>
<td>0</td>
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<td>• Facilitator ignored or was not openly supportive of participants' ideas, observations, or suggestions in support of student outcomes OR.</td>
<td>• Facilitator acknowledged or responded constructively to less than 50% of ideas, observations or suggestions provided by participants OR.</td>
<td>• Facilitator acknowledged or responded constructively to less than 50% of ideas, observations or suggestions provided by participants OR.</td>
<td>• Facilitator ensured that decisions were made that reflected consensus agreement</td>
<td>1</td>
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<td>• If disagreement, conflict or confusion were present, facilitator did not ensure a resolution</td>
<td>• If disagreement, conflict or confusion were present, facilitator made a decision as the expert without generating an open discussion.</td>
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<td>13.</td>
<td>Participants maintained a working relationship with each other</td>
<td>Joint responsibility was established or maintained among participants for the student's plans to intervene based on student's identified need(s)</td>
<td>• Roles and/or responsibilities were not clearly established for any participant OR • Responsibility regarding plan implementation was not assumed by any participants</td>
<td>• Roles and/or responsibilities were clearly established for parent, teacher, and facilitator AND • Responsibility regarding plan implementation was shared by all participants (i.e., parent, teacher, facilitator) OR • Responsibility regarding plan implementation was assumed by or delegated to only one participant (i.e., parent, teacher, or facilitator)</td>
<td>• Roles and/or responsibilities were clearly established for parent, teacher, and facilitator AND • Responsibility regarding plan implementation and data collection was shared by all participants (i.e., parent, teacher, or facilitator)</td>
<td>0</td>
<td>Not Effective</td>
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<tr>
<td>14.</td>
<td>Participants engaged in open and multi-directional communication</td>
<td>Open and multi-directional communication was facilitated and all participants were heard</td>
<td>• One participant (either the teacher, parent, facilitator, or other) dominated the discussion</td>
<td>• One of the teacher or parent maintained involvement throughout the discussion without dominating the conversation AND • The other teacher or parent did not engage in the process or share pertinent information</td>
<td>• Both the teacher and parent maintained involvement throughout the discussion without dominating the conversation</td>
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<td>0 Not Effective</td>
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</table>
| 15.  | Meeting was conducted in accordance with the iterative nature of problem-solving | Facilitator demonstrated competence and knowledge about the problem-solving process  
• The parent or teacher expressed they wanted to change or modify the target behavior and/or target time AND  
• No adjustments were made to the target behavior definition and data collection procedures | • The parent or teacher expressed they wanted to change or modify the target behavior and/or target time AND  
• Facilitator made adjustments to the target behavior definition and/or target time AND  
• No procedure for collecting additional baseline data was determined | • The parent or teacher expressed they wanted to change or modify the target behavior and/or target time AND  
• Facilitator made adjustments to the target behavior definition and/or target time AND  
• A procedure for collecting additional baseline data was determined | N/A  
Not applicable | 0  
Not Effective | 1  
Moderately Effective | 2  
Highly Effective
Total Scores

- Total number of constructive, encouraging, supportive statements or reflections: ________________
- Percentage of redirections made by facilitator in response to negative statements made by parents and/or teachers: ________________
  - To derive percentage calculate the total number of redirections made by the facilitator (i.e., circled negative statement tallies): ______ / total number of negative statements made by parent or teacher (i.e., negative statement tallies): ______
- Duration of meeting: ______ minutes ______ seconds
- Occurrence: code each 0 as a score of 0. Code each 1 or 2 as a score of 1. Indicate the TOTAL score (i.e. out of 14 or 15): ______________
- Quality Index: add up scores for all items (can earn 0, 1, or 2). TOTAL score (i.e., out of 28 or 30): ______________
CBC Fidelity Matrix: Meeting 3: Conjoint Plan Evaluation Interview (CPEI)

**Purpose:** To assess the adherence and quality with which the structural and relational objectives of problem solving are met during parent-teacher meetings.

**Definitions of Participants:** The term “parent” refers to at least one representative of the home setting (e.g., mom, dad, guardian, etc.) who provides direct care to the child. The term “teacher” refers to at least one representative from the school setting (e.g., classroom teacher, special education teacher, resource teacher, or related service provider) who provides instruction or services to the child in an educational setting. The term “facilitator” refers to the consultant whose role is to facilitate the meeting between the teacher and the parent.

**How to Use and Score:** Use the measure for core meeting objectives (structural and relational) when the purpose of the meeting is to identify the needs of the child. This measure is appropriate to use when there is at least one home representative and at least one school representative participating in the meeting.

**For each objective:**
- Determine the description that best captures the quality with which the objective was accomplished (i.e., 0, 1, or 2).
  - In the Score box, fill in the bubble in that corresponds with the score (i.e., 0, 1, 2). *Do not make any additional marks in this box.*
  - Fill in bubbles:
    - **Like this:**
    - **Not like this:**

  - Use the Notes box to record any important information about coding decisions.

- While listening to the meeting, tally the number of positive, encouraging, supportive statements, or reflections AND negative statements.
  - **Encouraging Statements:** The meeting facilitator praises or emphasizes specific and concrete parent/teacher behaviors, efforts, or verbal contributions during the meeting, and their impact on the problem solving process (e.g., expressions of “great,” “good job,” “way to go,” “thank you”).
  - **Empathetic Statements:** After a parent/teacher makes a statement or if there is an indication from what the facilitator says that the parent/teacher has previously expressed their perspective on a topic, the meeting facilitator shows an ability to communicate a shared perspective with the parent/teacher, and puts the situation in perspective through an understanding of the parent/teachers’ experiences (e.g., “I see where you are coming from,” “I can see how that could be frustrating,” “I know you guys are already running a tight schedule”).
  - **Reflections:** The meeting facilitator listens for and responds to the feelings of the parent/teacher at appropriate times by restating what he or she is experiencing in the meeting facilitator’s own words (e.g., “You seem to be feeling pretty frustrated.”)
  - **Negative Statements:** When the parent/teacher makes a negative expression about the process, another meeting participant (e.g., “You don’t care about my child”), or the character of the child of focus (e.g., expression that the child is “manipulative,” “mean”). Identification of the needs of the child (“the child is noncompliant”) is not considered a negative statement.
• Circle the negative statements that were redirected by the consultant.
  o Redirections: The meeting facilitator changes the course of the discussion in an effort to establish or maintain a constructive problem solving process.

For total scores (see last page of coding form):
• Record the total number (i.e., positive statement tallies) of constructive, encouraging, supportive statements or reflections.
• Record the percentage of redirections made by the meeting facilitator in response to negative statements made by the parent and/or teacher (i.e., number of redirections/total number of negative statements).
• Record the overall occurrence score using bubbles.
  o Code each 0 as a score of 0. Code each 1 or 2 as a score of 1.
• Record the quality index using bubbles.
  o Add up scores for all items (i.e., 0, 1, or 2).
• Record the duration (in minutes) of the meeting.
  o The meeting starts when the facilitator gives a verbal cue to initiate the meeting (e.g., “Let’s begin”) and the meeting ends when the facilitator gives a verbal cue to end the meeting (e.g., “Our next meeting is scheduled for…”).
<table>
<thead>
<tr>
<th>Item</th>
<th>Goals</th>
<th>Objectives</th>
<th>0 (Not Effective)</th>
<th>1 (Moderately Effective)</th>
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<th>Tallies</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Meeting participants collaboratively shared and reviewed data collected during plan implementation</td>
<td>Discussed the baseline and intervention data (actual data collected prior to and during plan implementation) regarding the target behavior through visual analysis</td>
<td>• Participants did not collect or discuss plan implementation data OR • Participants did collect and discuss plan implementation data, but they did not compare it to baseline data</td>
<td>• The facilitator and either the teacher or the parent (but not both) shared discussed plan implementation data they collected and compared to baseline data</td>
<td>• Both the teacher AND the parent shared discussed plan implementation data and compared to baseline data</td>
<td>Negative Statements (circle redirections): Positive Statements:</td>
<td>0 Not Effective</td>
</tr>
<tr>
<td>Item</td>
<td>Goals</td>
<td>Objectives</td>
<td>0 (Not Effective)</td>
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<td>2</td>
<td>Meeting participants determined if the goal for behavior change was met in applicable settings</td>
<td>Baseline and plan implementation data were used to inform decisions about whether the goal was met</td>
<td>• Either there was no discussion of whether the goal was met OR</td>
<td>• There was discussion about whether the goal was met AND</td>
<td>• There was discussion about whether the goal was met AND</td>
<td>Negative Statements (circle redactions):</td>
<td>Not Effective</td>
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<td></td>
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<td>• The discussion of whether the goal was met was not informed by the baseline and plan implementation data</td>
<td>• The decision was informed by the baseline and plan implementation data AND</td>
<td>• The decision was informed by the baseline and plan implementation data AND</td>
<td>Positive Statements:</td>
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<td>• The facilitator and either the teacher or the parent (but not both) contributed to or agreed with discussion about whether the goal was met</td>
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Notes:
### Meeting 3: Conjoint Plan Evaluation Interview (CPEI)

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<th>Score</th>
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</thead>
<tbody>
<tr>
<td>3.</td>
<td>Meeting participants evaluated the effectiveness of the plan at producing change in the target behavior&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Meeting participants discussed the plan and its role in affecting change in the target behavior</td>
<td>Participants did not discuss the plan for effecting change in the target behavior OR</td>
<td>Participants discussed the plan (e.g., what worked well and what did not work well) to effect change in the target behavior AND</td>
<td>The teacher and the parent discussed the plan (e.g., what worked well and what did not work well) to effect change in the target behavior AND</td>
<td>Negative Statements (circle directions):</td>
<td>0</td>
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<td></td>
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<td></td>
<td>The participants discussed what they liked and did not like but did not discuss the effect of the plan in the target behavior change OR</td>
<td>The facilitator discussed plan effectiveness with no input or agreement</td>
<td>The facilitator and either the parent or the teacher (but not both) contributed to or agreed with the discussion</td>
<td>Positive Statements:</td>
<td>1</td>
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<td></td>
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<td></td>
<td>The facilitator discussed plan effectiveness with no input or agreement</td>
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<sup>1</sup>Participants do not have to conclude that the plan was responsible for effecting change, but it is the discussion that is coded.
<table>
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<tbody>
<tr>
<td>4.</td>
<td></td>
<td>Meeting participants discussed the plan’s feasibility</td>
<td>Participants did not discuss the plan’s feasibility</td>
<td>Either the teacher or the parent contributed to discussion of plan feasibility</td>
<td>The teacher and the parents discussed plan feasibility</td>
<td>Negative Statements (circle redactions):</td>
<td></td>
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**Notes:**

<table>
<thead>
<tr>
<th>Score</th>
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### Meeting 3: Conjoint Plan Evaluation Interview (CPEI)

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<tbody>
<tr>
<td>5.</td>
<td>Meeting participants determined the need to continue, change, or remove the plan in applicable settings based on baseline and plan implementation data with regard to goal attainment</td>
<td>Baseline and plan implementation data were used to inform decisions about whether or not to continue, change, or remove the plan</td>
<td>- Participants did not discuss the need to continue, change, or remove the plan OR - A discussion about continuation, change, or termination occurred, but it was not based on data</td>
<td>- The facilitator and either the parent or teacher (but not both) discussed the need to continue, change, or terminate the plan AND - The discussion was informed by baseline and plan implementation data</td>
<td>- Both the parent and the teacher discussed the need to continue, change, or remove the plan AND - The discussion was informed by baseline and plan implementation data</td>
<td>Negative Statements (circle redaction):</td>
<td>0</td>
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<td>Positive Statements:</td>
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**Notes:**

2 Decision to continue, change, or remove plan and relevant procedures does not need to be consistent across settings, but must be discussed.
<table>
<thead>
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<td>6.</td>
<td></td>
<td>Meeting participants discussed either specific procedures for how to continue the plan (i.e., who, what, when, where and how) or discussed terminating the plan</td>
<td>• Participants did not discuss how to continue the plan OR • A discussion occurred that did not describe specific procedures for plan continuation OR • There was no discussion or consensus to terminate the plan</td>
<td>• The facilitator and either the parent or teacher (but not both) discussed specific procedures for how to continue the plan OR • The facilitator and either the parent or teacher (but not both) discussed and reached consensus about terminating the plan</td>
<td>• The teacher and the parent discussed specific procedures for how to continue the plan OR • The parent and the teacher discussed and reached consensus about terminating the plan</td>
<td>Negative Statements (circle redirections):</td>
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# Meeting 3: Conjoint Plan Evaluation Interview (CPEI)

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<tbody>
<tr>
<td>7.</td>
<td>Meeting participants collaboratively determined the need for future communication</td>
<td>Meeting participants discussed plans for future communication (e.g., meeting, email, telephone, home school note) that included specific procedures (i.e., who, what, when, where, and how)</td>
<td>● Participants did not discuss plans for future communication OR. ● Plans for future communication were discussed but did not include specific procedures (i.e., who, what, when, where, and how) OR. ● If participants disagreed about appropriate methods of future communication, either there was no discussion or no consensus</td>
<td>● Participants discussed plans for future communication that included specific procedures AND. ● The facilitator and either the teacher or the parent but not both contributed to the discussion OR. ● If participants disagreed about appropriate methods of future communication, there was some discussion and a consensus was reached AND. ● Established one-way communication with emphasis on home or school</td>
<td>● Participants discussed plans for future communication that included specific procedures AND. ● Each participant contributed to or agreed with the discussion OR. ● If participants disagreed about appropriate methods of future communication, there was discussion and a consensus was reached AND. ● Ensured possibility of two-way communication between home and school</td>
<td>Negative Statements (circle redactions):</td>
<td>0 Not Effective</td>
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<td>Positive Statements:</td>
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<tbody>
<tr>
<td>8.</td>
<td>Meeting facilitator maintained a working relationship among all meeting participants</td>
<td>Meeting facilitator maintained a working relationship among all meeting participants</td>
<td>Provided no positive, encouraging, or supportive statements or reflections OR Made statements and reflections that negatively impacted relationships among meeting participants</td>
<td>Provided 3 or fewer positive, encouraging, empathic statements or reflections OR Responded constructively or verbally or nonverbally (e.g., ignoring) redirected less than 50% of negative statements</td>
<td>Provided 4 or more positive, encouraging, empathic statements or reflections AND Responded constructively or redirected 50% or more negative statements</td>
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Notes:
### Meeting 3: Conjoint Plan Evaluation Interview (CPEI)

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<tr>
<td>9.</td>
<td></td>
<td>Facilitator validated participants' ideas and responded to disagreement appropriately.</td>
<td>• If participants did not generate ideas in support of student outcomes, the facilitator did not invite participants' ideas, observations, or suggestions OR.</td>
<td>• If participants did not generate ideas in support of student outcomes, the facilitator invited them to share their ideas, observations, or suggestions in support of student outcomes OR.</td>
<td>• If participants did not generate ideas in support of student outcomes, the facilitator invited them to share their ideas, observations, or suggestions in support of student outcomes OR.</td>
<td>• Facilitator acknowledged or responded constructively to less than 50% of ideas; observations or suggestions provided by participants OR.</td>
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**Notes:**

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203
### Meeting 3: Conjoint Plan Evaluation Interview (CPEI)

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<th>Tallies</th>
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<tbody>
<tr>
<td>10.</td>
<td>Participants maintained a working relationship with each other</td>
<td>Joint responsibility was established or maintained among participants</td>
<td>• Roles and/or responsibilities were not clearly established for any participant</td>
<td>• Roles and/or responsibilities were clearly established for parent, teacher, and facilitator AND • Responsibility regarding continued communication and plan generalization was assumed by or delegated to only one participant (i.e., parent, teacher, or facilitator)</td>
<td>• Roles and/or responsibilities were clearly established for parent, teacher, and facilitator AND • Responsibility regarding continued communication and plan generalization was shared among the participants (i.e., parent, teacher, and facilitator)</td>
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<td>2 Highly Effective</td>
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**Notes:**
### Meeting 3: Conjoint Plan Evaluation Interview (CPET)

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<tbody>
<tr>
<td>11.</td>
<td>Participants engaged in open and multi-directional communication</td>
<td>Open and multi-directional communication was facilitated and all participants were heard</td>
<td>• One participant (either the teacher, parent, facilitator, or other) dominated the discussion</td>
<td>• One of the teacher or parent maintained involvement throughout the discussion without dominating the conversation AND</td>
<td>• Both the teacher and parent maintained involvement throughout the discussion without dominating the conversation</td>
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**Notes:**

<table>
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<tr>
<td>2</td>
<td>Highly Effective</td>
</tr>
</tbody>
</table>
Total Scores

- Total number of constructive, encouraging, supportive statements or reflections: ________________
- Percentage of redirections made by facilitator in response to negative statements made by parents and or teachers: ________________
  - To derive percentage calculate the total number of redirections made by the facilitator (i.e., circled negative statement tallies): ______ / total number of negative statements made by parent or teacher (i.e., negative statement tallies): ______
- Duration of meeting: ________ minutes ________ seconds
- Occurrence: code each 0 as a score of 0. Code each 1 or 2 as a score of 1. Indicate the TOTAL score (i.e. out of 11): ______________
- Quality Index: add up scores for all items (can earn 0, 1, or 2). TOTAL score (i.e., out of 22): ______________