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Communication Partner Experience in Autism Spectrum Disorder: a Case Study

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UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

COMMUNICATION PARTNER EXPERIENCE IN
AUTISM SPECTRUM DISORDER:
A CASE STUDY

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

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College of Education and Behavioral Sciences
School of Special Education
December, 2015

This Dissertation by: Pamela Charlie Marie Buckley

Entitled: *Communication Partner Experience in Autism Spectrum Disorder: A Case Study*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in the College of Education and Behavioral Sciences in School of Special Education, Program of

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ABSTRACT

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For the purpose of this dissertation, the term *communication partner* described any individual in a position to provide or support opportunities for communication. Communication partners have been discussed in current literature in the areas of augmentative and alternative communication (AAC), severe disabilities, aphasia, and autism spectrum disorder (ASD). The role, characteristics, and responsibilities of a communication partner are most comprehensively described in the aphasia literature.

It is likely that individuals with ASD would have more opportunities for social interaction and engagement if supported by skilled and informed communication partners. The communicative success of individuals with ASD may depend on the skills of their communication partners. We need to better understand how communication partners supporting individuals with ASD perceive their role in supporting social interactions and conversation.

The purpose of this study was to explore an educational team's perceptions of their role as a communication partner. The Individualized Educational Program (IEP) team of a high school student with ASD was the focus of this qualitative study. The team's perceptions were investigated through in-depth interviews, and the following propositions were considered: (a) How do perceptions of the role of a communication

partner differ based on the adults' level of training or experience with students with autism spectrum disorder?; (b) What, if anything, do team members perceive they need in terms of information and/or training in order to be adequately prepared as effective communication partners?; and (c) What are the barriers and/or supports in the school setting that affect the role of a communication partner?

Data from artifacts, observations, and interviews from 13 members of the student's IEP team were analyzed. All data were brought together in NVivo qualitative data analysis software for open and then axial coding. Data analysis resulted in themes describing the communication partner experience of the student and the IEP team. Implications for practice and recommendations for future research were presented regarding the strategies, skills, and knowledge needed to be an effective communication partner for individuals with ASD.

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CHAPTER I

INTRODUCTION

Background

Communication is a dynamic and transactional process during which a communicator and a communication partner continually influence one another. The success of a communicative interaction is dependent on the communication skills of each individual participating in the exchange (Kent-Walsh & Mcnaughton, 2005). Providing support for individuals with complex communication needs can be a challenge because it requires skills and techniques that need to be taught through guided practice (Binger & Kent-Walsh, 2012).

The strategies and characteristics needed by communication partners have been noted throughout the literature as they relate to aphasia, severe disabilities, autism, and individuals using augmentative and alternative communication. There is not one definition of a communication partner; however, a communication partner is consistently described as any person in a position to support communicative interactions for individuals with communication and or language impairments.

As discussed in the area of aphasia, partners can increase access to communication by providing “a communication ramp,” which may require new or additional skills for communication partners (Kagan, 1998) Adults may not inherently possess the skills and techniques to support communication. In fact, adults supporting

individuals with disabilities often respond to individuals who cannot effectively communicate in ways that do not facilitate language and communication development. For example, they might ask only yes/no questions, take the majority of the conversational turns, or allow insufficient response time, all of which allow fewer opportunities for the individual to engage in reciprocal communication (Kent-Walsh, Binger, & Hasham, 2010).

The greatest amount of research regarding communication partner training has been in the area of aphasia (Simmons-Mackie, Cherney, Raymer, Armstrong, & Holland, 2009; Simmons-Mackie, Raymer, Armstrong, Holland, & Cherney, 2010; Turner & Whitworth, 2006b). The American Speech and Hearing Association (ASHA, n.d.) defines aphasia as an acquired language disorder resulting from damage to the parts of the brain that contain language. The most common cause of aphasia is stroke, but it can also be caused by other injuries to the brain, including trauma or infection. Depending on the location and the severity of the injury, aphasia can affect any or all of the following: speaking, listening, reading, and writing, with deficits in expressive language, receptive language, or both. Often, reading and writing are more impaired than spoken language. Individuals with aphasia may be unable to interpret abstract language and may have difficulty accessing opportunities for conversation and social inclusion. Communication breakdowns become commonplace for these individuals; often adults who previously had typical language and communication skills and whose communication partners did not need to provide support prior to the brain injury (ASHA, n.d.).

Research in aphasia describes training communication partners to support all communicative interactions and recommends looking at a systems approach wherein all

potential partners receive education and training and are supported by the whole system or organization (Simmons-Mackie, 2013). There are several approaches to communication partner training discussed in the aphasia literature (Turner & Whitworth, 2006b). These approaches focus on the specific strategies that should be considered for training (e.g., turn-taking, giving time, showing interest, using multimodal communication, and verifying understanding) (Simmons-Mackie, 2013) and the characteristics that would make a person a good communication partner candidate (Turner & Whitworth, 2006a). Authors in the area of aphasia suggest that the competence of individuals with aphasia can be masked by language disorders, but can be revealed through the skill of a trained communication partner (Kagan, 1998, Turner & Whitworth, 2006b).

Research in training partners to support augmentative and alternative communication (AAC) has focused on teaching various partners (parents, teachers, and educational assistants) to understand the communication system as well as the skills needed to support AAC. Individuals using AAC may or may not have intellectual disabilities and may or may not have physical disabilities. AAC use is seen in individuals with severe disabilities who are nonverbal and may have limited motor movement. It is also used with individuals who have the ability to speak, but do not use spoken language to effectively communicate, as seen in autism spectrum disorders (ASD). Systems can be used to replace or supplement both spoken and written language. An individual learning to use AAC has the same language and communication challenges as any language learner, but also must learn a “symbol system” that represents language, and then must use the symbol system to communicate. Current research in communication partner

training in AAC has discussed the importance of providing training for communication partners (Beukelman, 2005; Binger & Kent-Walsh, 2012; Culp & Carlisle, 1988; Douglas, 2012; Green et al., 2010; Light, Binger, Agate, & Ramsay, 1999; Mirenda & Iacono, 2009).

Comprehensive programs to train communication partners to support AAC have been around since the 1980s. Partners in Augmentative Communication Training (PACT) (Culp & Carlisle, 1988) outlines procedures for observing communication attitudes and interactions skills of the AAC user in the communication. In more recent years, step-by-step training has been researched, including an eight-step program by Kent-Walsh and McNaughton (2005). The program includes a pretest, teaching, and practicing very specific skills such as modeling how to answer a question. Final steps include post-tests and assessing generalization of newly learned skills. The majority of the research in AAC reported that communication partners, including educational assistants, teachers, and family members, were capable of learning strategies to promote the communication using the AAC system (Douglas, 2012; Kent-Walsh et al., 2010; Kent-Walsh & Rosa-Lugo, 2006; Light et al., 1999; Starble, Hutchins, Favro, Prelock, & Bitner, 2005; Stiebel, 1999).

Research in the area of AAC used by individuals with ASD has reported less consistent results. Although it is suggested that the current technology can support the social communication needs of individuals with ASD, the few studies that have been completed show inconsistent results in AAC use (Hong, Ganz, Gilliland, & Ninci, 2014; Nunes & Hanline, 2007; Prizant, 2006; Trembath, Iacono, Lyon, West, & Johnson, 2013). In a book on the topic, *Autism Spectrum Disorders and AAC* (Mirenda & Iacono,

2009), the Social Communication Emotional Regulation Transactional Support model (SCERTS) (Prizant, 2006) was recommended as a comprehensive approach to look at the needs of the AAC user and the communication partner.

Autism, by definition of the disorder, presents persistent deficits in social communication and social interaction across multiple contexts (American Psychiatric Association and Psychiatry Online, 2013). The majority of current literature regarding communication partners of individuals with ASD focuses on teaching partners to implement specific interventions (e.g., applied behavior analysis, Pivotal Response Training [Koegel & Koegel, 2006], milieu teaching, and Picture Exchange Communication System [Bondy & Frost, 2001]). Communication partners, parents, and educators were successfully taught specific skills such as identifying opportunities for communication, modifying the environment, and supporting opportunities for initiation and turn-taking interactions. The various skills taught to the communication partner depended on the intervention (Goldstein, 2002; Meadan, Ostrosky, Zaghlawan, & Yu, 2009).

Two programs in current literature discuss a comprehensive skill set needed by communication partners in order to support individuals with ASD, *More than Words—Hanen* (Sussman, 1999) and SCERTS (Prizant, 2006). *More than Words—Hanen* teaches parents to facilitate their child's communication and language by maximizing opportunities for communication skills and everyday situations. The program focuses on interactional styles and turn-taking strategies that promote verbal and nonverbal skills for children with ASD under the age of 5.

The SCERTS model describes specific goals for communication partners supporting communication at all language levels of development. The program is a comprehensive educational approach with an entire component, transactional support (TS), dedicated to the interpersonal support and the learning support provided to the individual with ASD. The program promotes increasing the partner's awareness of how to make interactions successful and having an investment in making necessary changes for the student's success. SCERTS also offers very specific characteristics needed by communication partners as TS. TSs may include interpersonal supports such as providing structure, fostering initiations, etc. as well as learning supports such as supporting a child's sense of organization, understanding of language, etc. TS is a priority in the SCERTS model for families and professionals. Currently, there is very little research on the SCERTS model as a whole. The research that does exist is very positive (Molteni, Guldberg, & Logan, 2013).

Across the research, there are common expectations of communication partners. In every area, partners are expected to identify opportunities for communication, modify or use the environment to support communication, and support opportunities for initiation and turn-taking interactions. Clearly, the role of communication partner is a complicated one that likely requires additional training and knowledge (Binger & Kent-Walsh, 2012; Prizant, 2006).

Theoretical Framework

Communication is a dynamic phenomenon continually affected by those involved in the interaction and by conditions in the environment. Therefore, the role of "communication partner" is complex. There are many ideas to consider as we look at this role in supporting individuals with ASD. First, we need to be aware of the attitudes of

communication partners. We need to evaluate their attitude in accepting the communication style of the person they are supporting and their feelings about changing their own way of interacting. Communication partners may need to change their interaction styles, and their attitude toward this change should be considered (Molteni et al., 2013). Attitudes and acceptance of the individual with the disability also need to be considered (Turner & Whitworth, 2006a). Ideally, they would be cognizant of the communication needs of their partner and willing to make the changes needed in order for individuals with disabilities to be successful. Because there are interaction styles that promote engagement and communication more than others, adults may have to be open to changing their style. For example, many adults take on the role of “nurturer” and do most of the talking for the student. Others might be very directive and tell the student what they need to say. Some adults move through conversations very quickly, not allowing the student to take a turn. The true “dance” of communication is best supported by an adult who is aware of the student’s agenda or intent and who can support the student in taking balanced conversational turns (Manolson & Hanen Centre, 1992). The adult must presume the competence of the individual who they are supporting (Jorgensen, 2005).

We also need to identify specific information and skills that individuals need in order to be effective communication partners. The idea of a “responsive communication partner” has been presented in various treatment models for ASD (e.g., *More than Words—Hanen* [Sussman, 1999], SCERTS [Prizant, 2006], Greenspan Floortime Approach for Children with Developmental Delays [Greenspan Floortime Approach for Children with Developmental Delays, n.d.], Early Start Denver Model [Rogers, 2009]).

There are commonly known communication partner strategies that are considered responsive behaviors, such as following the child's lead, establishing joint attention, and imitation. However, the targets of these interventions focus on teaching skills to the individual with ASD and do not necessarily consider the attitudes and the skills needed by the communication partner. We need to focus on enhancing the communication skills of communication partners, including their interactional style and their ability to modify the environment, in order to provide opportunities for interactions (Prizant, 2006; Rubin & Laurent, 2004).

We must also consider the dynamics of the educational team, their support for each other, and the support from the system in which they work. Because successful communication often relies on environmental supports as well as support from other people in the environment, entire teams may need to be trained in order to provide optimal opportunities for individuals with ASD (Prizant, 2006; Smidt, Balandin, Reed, & Sigafoos, 2007). One team member may need to "set the stage" for engagement, while another prompts the student to take a turn. Each team member needs to understand the intent and the desired outcome of the interaction. Every member of the team needs to be supported by each other and by the organizational setting in order to successfully identify opportunities and modify the environment to promote communication.

Statement of the Problem

ASD, by definition of the disorder, includes deficits in language and communication (American Psychiatric Association et al., 2013). Therefore, it is likely that individuals with ASD would have more communicative opportunities and more successful communicative interactions if supported by skilled and informed communication partners. As seen in the aphasia and AAC literature, the task of being an

effective communication partner is complex, requiring an understanding of the disability being supported, the communication environment, and the strategies and or skills needed to support communication. Communication partners of individuals with ASD may need an understanding of the communication deficits related to ASD as well as specific skills.

Individuals with ASD may be more successful if their communication partners could effectively support all communication opportunities at any level of language use. Positive outcomes for individuals with ASD are strongly correlated with social communicative competence (National Research Council on Autism, 2001). Interventions for ASD need to address social competence and need to do so across every activity, every social partner, and every social context (Mirenda & Iacono, 2009). The communicative success of an individual with ASD may depend on the skills of their communication partners.

We need to better understand the phenomenon of supporting individuals with ASD across partners and contexts. Many students with ASD are provided with few opportunities to communicate during the school day (Chiang, 2009). Providing and arranging for more communicative opportunities during the school day by trained communication partners, when the student is motivated, may meaningfully improve communication (Koegel, Matos-Freden, Lang, & Koegel, 2012). We currently need research to define the most important areas to teach effective and efficient teacher training methods and to define methods for keeping special education staff apprised of the latest research findings (Koegel et al., 2012). In order to begin to address the needs of a communication partner supporting students with ASD, we need to look at the phenomenon from communication partner's perspective.

Purpose of the Study

The purpose of this qualitative case study was to investigate an educational team's perceptions of their role as a communication partner when supporting a student with ASD. The purpose was not to consider their ability in implementing a specific intervention, but rather to consider their experience of being on the "other side" of any communicative interaction with a student with ASD who is capable of verbal interactions. In order to support and empower individuals as effective communication partners, we need to better understand how they perceive their role in supporting communication and to begin to recognize whether they understand their importance as a communication partner.

Individualized Education Program (IEP) teams should be aware of a student's strengths and needs in the area of communication, but have they considered their role in supporting that student in all communicative interactions? Do they know how to support the student and to provide opportunities for communication? Are they aware of the communication barriers associated with ASD? Do IEP team members recognize the many functions of communication, environmental supports, and engagement and turn-taking strategies involved in communicative interactions? This study explored these questions with the IEP team of a high school student with ASD. The answers to these questions allowed for greater understanding of where to begin in communication partner training for individuals who support students with ASD. The results of this study will lead to discussions on whether communication partners supporting individuals with ASD do, in fact, need training and what that training might look like.

Nature of the Study

This qualitative case study investigated a real and current phenomenon. A variety of methods, including interviews, observations, and artifacts were used to create a theory about the experience of communication partners for individuals with ASD. The study explored the experience of communication partners supporting a student with ASD in a high school setting from the perspective of the participants.

The resulting data from this study provided insight to the kind and amount of information the participants find useful and their perceptions of the necessary training needed to successfully support students with ASD. Observations of interactions with the team and the student were also performed in order to see whether the participants' reported information could be seen in their interactions with the student and with each other. All information was analyzed to create a theory on the experience of being a communication partner for individuals with ASD.

Research Questions

- Q1 How does the IEP team of a student with ASD perceive their role as a communication partner?

Further propositions included:

- Q2 How do perceptions of the role of a communication partner differ based on the adults' level of training or experience with students with autism spectrum disorder?
- Q3 What, if anything, do team members perceive they need in terms of information and/or training in order to be adequately prepared as effective communication partners?
- Q4 What are the barriers and/or supports in the school setting that affect the role of a communication partner?

Significance of the Study

This study helped us gain insight to how IEP team members perceive their role as a communication partner for a verbal student with ASD and provided information on their specific needs for that role. The data will help us to understand the needs of communication partners supporting individuals with ASD. The results will help us to understand whether educational team members recognize the impact that they can make on students simply by providing and supporting opportunities for communication. The participants in this study self-reported how they would benefit from training. We can now consider what communication partner training needs to entail. The results may lead researchers to certain skills, strategies, or interactional styles that need further consideration.

With a greater understanding of the needs of a communication partner, we can better support individuals as communication partners. Ultimately, better outcomes for students may depend on adults learning to be communication partners. Especially as we strive to include students with ASD in general education classrooms, we need to provide educators with the skills and expertise required to meet the individual communication needs of students (Koegel et al., 2012).

Definition of Terms

Alternative and augmentative communication (AAC). Alternative and augmentative communication includes all forms of communication, other than oral speech. Examples of these augmentative aids include picture and symbol communication boards and electronic devices. AAC can be used to supplement existing speech or replace speech that is not functional. AAC aids and devices are used to enhance their communication and can be a permanent or a temporary aid (ASHA, 2014).

Aphasia. Aphasia is an acquired neurogenic language disorder due to brain injury, affecting all language modalities. Varying degrees of impairment can be seen in production or comprehension of speech, written expression, and reading comprehension. Typically cognitive skills such as memory and executive function skills are intact; however, that is not always the case. Other speech and language impairments and auditory and visual deficits may co-occur. Outcomes of aphasia vary from person to person, depending on the location and the severity of the lesion site (ASHA, 2014).

Autism spectrum disorder (ASD). Autism spectrum disorder is characterized by persistent deficits in social communication and social interaction across multiple contexts including: deficits in social-emotional reciprocity, deficits in nonverbal communication behaviors used for social interaction, and deficits in developing, understating, and maintaining relationships. It is also characterized by restrictive, repetitive patterns of behavior, interests, or activities. Symptoms must be present in early development. Symptoms vary in severity and may or may not accompany intellectual impairment, but cause impairment in social, occupational, or other important areas of functioning. Support is required at every level of severity (American Psychiatric Association et al., 2013).

Communication partner. For the purpose of this study, a communication partner is an individual that is in a position of supporting communication in any interaction. This support may be by providing opportunities for communication or adapting the environment. Communication partners may support communicative interaction by changing their own behavior or using specific strategies to promote engagement. Strategies might include such behaviors as prompting a person to take turns, waiting for a

response, accepting all forms of communication, etc. The communication partners discussed in this study were adults supporting an individual with a communication disorder in any communicative exchange.

Transactional model. The transactional model describes communication development as bidirectional and reciprocal. Interactions between children and their environment change over time and affect each other in a reciprocal fashion (McLean & Snyder, 1978).

Summary

Individuals who struggle to communicate rely on their communication partner. There is some discussion in the current literature regarding communication partners. However, the role and the responsibilities of communication partners have not been well defined. Common themes relating to the role of a communication partner include: identifying opportunities for communication, modifying or using the environment to promote opportunities for interaction, and using strategies that promote engagement and turn-taking. These themes are seen in the areas of AAC, severe disabilities, aphasia, and ASD.

It is likely that communication partners would understand and be better prepared for their role as a communication partner if they were given information about the disability and specific skills or strategies to support communication. Communication partners may need various skills and knowledge that address specific based on the needs of the student and the communication barriers presented by the different disabilities.

The purpose of the current qualitative case study was to investigate an educational team's perception of their role as a communication partner in supporting a student with

ASD. We can begin to explore the needs of a team by understanding their awareness of their role as a communication partner and the skills needed to support the student's communication. Then, we can begin to discuss how to support a team in this role.

CHAPTER II

LITERATURE REVIEW

In current literature communication, partner training is discussed as it relates to individuals with various disabilities. This review will include literature that addresses communication partners who support individuals with aphasia, severe disabilities such as cerebral palsy, and those with ASD. Literature regarding communication partners supporting the use of alternative and augmentative communication (AAC) will also be reviewed. The greatest amount of research regarding communication partner training is in the area of aphasia, where researchers have addressed who should be trained and have identified strategies that need to be targeted, the characteristics or interaction styles of communication partners, and the broader organizational support need to support communication partners (Kagan, 1998; Rayner & Marshall, 2003; Simmons-Mackie et al., 2010; Turner & Whitworth, 2006a).

Research in the area of AAC suggests that communication partners must understand and use various communication systems, but also need additional knowledge in order to provide communicative opportunities for users of AAC (Beukelman, 2005). The research presents very specific skills needed by communication partners as part of comprehensive training programs (Binger & Kent-Walsh, 2012; Culp & Carlisle, 1988; Kent-Walsh & Rosa-Lugo, 2006). Current research in AAC includes training communication partners of individuals with severe disabilities where the AAC system is

an alternative for spoken language (Sigafoos, Arthur-Kelly, & Butterfield, 2006).

Research is also presented where AAC is used as a supplement for improving speech and language (Binger & Kent-Walsh, 2012; Culp & Carlisle, 1988; Kent-Walsh et al., 2010; Kent-Walsh & Rosa-Lugo, 2006). Autism is one of the disabilities addressed in the AAC literature (Mirenda & Iacono, 2009; Thunberg, Sandberg, & Ahlsén, 2009; Trembath et al., 2013).

The bulk of current ASD literature related to communication partners is found in studies determining whether adults are able to implement specific therapeutic or instructional interventions. Some of the interventions discussed require a responsive partner and specific skills needed by the partner for that intervention (Goldstein, 2002; Meadan et al., 2009). Two programs, Social Communication Emotional Regulation Transactional Support (SCERTS) (Prizant, 2006) and *More than Words--Hanan* (Sussman, 1999), describe comprehensive skills and strategies needed to support communication for individuals with ASD across environments and partners. The experience of being a communication partner for an individual with ASD is not well addressed in current literature

Augmentative and Alternative Communication (AAC)

In the area of AAC, researchers clearly state that we must not only target the communication competence of the AAC user, we must also look at the communication skills of communication partners. We need interventions that target the communication skills of the partner as well as the AAC user (Kent-Walsh & Rosa-Lugo, 2006). Binger and Kent-Walsh (2012) recognize the challenges present in communication partner training and recommend the following:

- Identify partner behaviors that result in desired client skills and are clearly linked to client outcomes.
- Select well-defined, easily identifiable, and easily quantifiable client skills and partner techniques that change quickly.
- Practice the selected technique with the client.
- Start small; after you achieve initial success, expand.

Beukelman (2005) states that communication partners supporting individual users of AAC need an understanding of the communication system being used, an acceptance of the system, and the skills to interact appropriately with the individual in order to optimize communicative opportunities. They must be able to understand the message conveyed through a communication system and provide the necessary support to optimize the use of the AAC system. Communication partners must have “a social and strategic competence in modeling the device. Failure to consider communication partner skills in the assessment process will almost always result in implementation failure later on” (Beukelman, 2005, p. 157).

Partners in Augmentative Communication Training (PACT) (Culp & Carlisle, 1988) is a program that also focuses on teaching AAC users and their communication partners to improve conversational interactions. The guide targets communication behaviors, communication assessment, communication intervention, and psychological considerations. The PACT program includes Communication Assessment Guidelines that introduces procedures for observing communication attitudes and interaction skills of the AAC user and of the partner. The program also presents Communication Intervention Guidelines to develop intervention goals for both partners.

A more recent comprehensive training approach proposed by Kent-Walsh and McNaughton (2005) taught communication partners to use specific strategies in a variety of environments. The program focused on the following four skills: (a) use of extended conversational pause or expectant delay, (b) being responsive to communicative attempts, (c) using open-ended questions, and (d) modeling use of AAC system. Eight steps were suggested for training:

- Pretest and solicit the communication partner's commitment to learning the targeted strategy.
- Describe the communication partner interaction strategy.
- Demonstrate the communication partner strategy.
- Provide verbal practice of the communication partner interaction strategy.
- Practice implementing the communication partner strategy in controlled contexts (e.g., role play with trainer).
- Practice implementing the communication partner interaction strategy in natural contexts.
- Complete post-test and solicit the parent's commitment to long-term implementation of the communication partner interaction strategy.
- Demonstrate generalized use of the communication partner interaction strategy.

The same authors investigated the effects of their training model on various communication partners. In a single-subject multiple-probe-across-participants design, parents learned to implement a communication partner strategy in storybook reading activities (Kent-Walsh et al., 2010). The strategy included the following steps: (a) read

and provide an aided AAC model, (b) ask a *wh*- question and provide an aided AAC model, and (c) answer the *wh*- question and provide an aided AAC model. An expectant delay was provided after each step, and a contingent response was provided following each communicative turn that the child took. Trainers worked with parent-child dyads in their homes. All six parents were able to implement the strategy after 2-2½ hours of training. The children in the study demonstrated significant increased turn-taking and used a wider range of semantic concepts. The authors concluded that the approach is promising, citing positive effects in other studies that used the model with Latino parents (Rosa-Lugo & Kent-Walsh, 2008) and with educational assistants (Binger, Kent-Walsh, Ewing, & Taylor, 2010).

Educational assistants have a significant amount of responsibility in supporting children who use AAC, but they receive little instruction on how to do so (Kent-Walsh & Light, 2003). Research suggests that educational assistants often fail to engage in behaviors that promote the communication growth of individuals using AAC and may benefit from training (Douglas, 2011).

A review of seven studies teaching educational assistants to support the communication of individuals who use AAC (Douglas, 2012) noted consistent positive changes for individuals using AAC devices after their communication partners received training. Six of the seven studies used single-subject multiple-baseline designs, and one used an experimental group design. The participants in the studies were in self-contained classrooms, inclusive classrooms, and residential settings. In all seven studies, AAC users demonstrated increased communication when their communication partners increased the use of the targeted strategies.

The reviewed studies included many components from the model presented by Kent-Walsh and Mcnaughton (2005): pretest, strategy demonstration, controlled practice and feedback, advanced practice, and post-test. The majority of the studies implemented six of the stages, suggesting that these components may be key components in designing a promising approach to communication partner training. These positive results indicated that the educational assistants were able to learn to prompt the use of the device, recognize communicative attempts, and respond to communicative attempts.

The researcher who performed the above review also completed another study to measure the effect of online communication partner training for educational assistants (Douglas, 2011). A single-subject multiple-baseline probe design was utilized with three participants. Educational assistants were taught a three-step procedure to promote the communication development of young children: (a) provide opportunities for communication, (b) wait for the child's communication, and (c) respond to the child's communication. Instruction included five 10- to 15-minute modules including the following components: (a) PowerPoint slides accompanied by narration from the instructor, (b) brief video clips of educational assistants using the target skills with a child embedded into the presentation, (c) quiz questions to confirm knowledge of the strategy steps, and (d) application activities.

This study also presented positive results. All of the children in the study increased communication turns after educational assistants participated in the online training, and each paraeducator provided an increased number of responses to child communication turns. However, the study addressed important issues to consider in future communication partner training research. This training targeted a number of skills,

including providing an opportunity, waiting, and responding. Reviewers questioned whether or not one skill is more important than another and if all components are necessary. Also, the training included different instructional techniques (e.g., video models, testing of mnemonics, and identification of skills in videos) over several modules. The reviewers suggest that future research consider which instructional techniques are necessary and ascertain if certain strategies are more important than others (Douglas, 2011).

Wright (2006) conducted a study comparing three interventions designed to increase access to speech-generating devices (SGDs) in the classroom. A multi-probe design across the student-teacher dyad was used in four classrooms. The first intervention included providing a teacher with an SGD for an identified student. In the second intervention, the teacher was given a video model of how to use the SGD. In the third intervention, the researcher provided direct instruction on the use of the SGD, in addition to the video model. The results indicated that the identified student communicated more with the third intervention when compared to the first and second. The researcher also concluded that teachers were less likely to provide access to the SGD without direct instruction and support.

Two studies focusing on family-centered interventions discussed the importance of identifying routines and strategies based on the needs of the family. In one study, the investigator worked with a family in three different sessions where the needs of the family were identified regarding their ability to support AAC. The intervention focused on identifying priority communicative contexts, AAC device implementation and communication partner strategies such as modeling the use of the device, maintaining eye

contact, waiting for requests, and encouraging initiations. The parents reported high satisfaction with the relevance and the appropriateness of the training (Starble et al., 2005). In a multiple baseline design study across a child and parent dyad, researchers also discussed supporting AAC use within the family, helping them recognize communication opportunities within daily routines. Parents were taught a problem-solving intervention focusing on routines they had identified as important. Results indicated an increase in the use of the AAC system and increase in the parents' perceptions of their child's communication skills and their own ability to promote communication (Stiebel, 1999).

Severe Disabilities

Individuals with severe disabilities have difficulty acquiring communication skills, and the skills that they do have are highly controlled by their communication partners (Pennington, Goldbart, & Marshall, 2004). A small amount of research has addressed communication partner training for individuals with severe disabilities. The ages of the individuals with severe disabilities range from infancy to adulthood, with varying levels of cognitive impairment. Teachers, educational assistants, and parents have been included as communication partners.

A responsive communication partner is described by Sigafoos et al. (2006) as someone who creates numerous structured opportunities for teaching communication and can recognize and capture communication opportunities that are learner-initiated throughout the day and across multiple days and not just during training sessions (p. 11). The authors further describe responsive partners as being able to acknowledge pre-linguistic behavior, interpret behavior as being communicative, and respond to the

potential communicative act in ways that correspond to the presumed function of the behavior. Additional skills that should be considered include waiting for a response, giving an expectant look, acknowledging potential communicative acts, prompting transitions to symbolic forms of communication, and delivering reinforcement.

The Developing Communicative Interactions (DCI) training program (Sack & McLean, 1997) was developed to teach basic interactional skills at a paraprofessional level for service providers of school-aged students and with severe disabilities. The instruction was field tested and revised over a three-year period with paraprofessionals in nine states. The final training package focused on creating communication-rich environments with high expectations for communication from the individual with disabilities. The content of training was divided into four modules. The first was recognizing the framework for interaction, which includes ideas such as structuring the environment to promote interaction and establishing a common focus of attention followed by simple and then complex turn-taking. The second module focused on recognizing and responding to different forms of communication (symbolic and non-symbolic). The third module taught the communication partner to increase the level of understanding by gaining the individual's attention, matching the individual's level, and checking for understanding. The final module prepared the communication partner to recognize different communicative messages and increase the need and opportunity for communication. Each module included a list of observable competencies and a narrated videotape demonstrating all strategies. They also included an instructor's guide, worksheets, handouts; and recommendations for practice activities applying the major points presented.

The same year the DCI study was published, Siegel-Causey and Bashinski (1997) presented a framework offering practitioners insight into the communicative abilities of learners with multiple disabilities who do not yet use symbols for communication. The framework synthesized findings from developmental, educational, and clinical literature to provide educational and therapeutic intervention practices. The tri-focused framework included the learner, the partner, and the environmental context in which the learner's communication interactions take place, with each affecting and affected by the other. The focus of the framework includes understanding the learner, broadening the communication partner's role, and improving the environmental context.

In a systematic review of communication partner training of children with cerebral palsy (Pennington et al., 2004), only four studies were identified—three group studies and one single case study. The communication partner training targeted physical positioning of the conversational partner and child, creating communication opportunities, and responding to children's communicative signals. The reviewer concluded that although the studies reported positive outcomes (i.e., increased responsiveness, imitation, and face-to-face contact of communication partners), it did not provide “hard evidence.” Due to methodological flaws, it is not clear whether the interventions led to communicative change. Recommendations for further research included methodology that fairly evaluates effects of training. The reviewer also suggested that communication partner training needed to be refined in order to provide the most effective and efficient methods with which to meet the needs of the communication partners and the individuals they are supporting.

A study completed after the aforementioned review pointed out additional complications with communication partner training, especially for students with severe disabilities (Foreman, Arthur-Kelly, & Pascoe, 2007). This small study completed in Australia included six teachers and six educational assistants in special (segregated) schools. The participants received three half-day training sessions that presented basic concepts about communication and evidence-based strategies to support communication. Teachers and educational assistants completed self-report scales related to their communication skills, knowledge, and concerns prior to and at the conclusion of the training program. The staff reported improved skills and knowledge; however, this improvement was not seen in the communicative interactions of the students as observed in their classrooms.

Another study found temporary positive results training communication partners of adults with challenging behaviors (Smidt et al., 2007). The study consisted of a non-concurrent multiple probe across three settings. Eighteen staff members working in residential homes participated in four sessions focused on the use of AAC, increased use of praise, and increased use of shorter utterances. The training sessions included direct instruction and video analysis of the participants' interactions with adults with intellectual disabilities. Although the participants demonstrated an increased use of AAC and praise that resulted in a decrease in challenging behavior from the individuals with disabilities, these results were not sustained. The researchers recommended providing all staff in the organization with training and providing ongoing support.

Autism Spectrum Disorders (ASD) and Communication Partner Training

The majority of results reported in current literature discussing communication partners for students with ASD focuses on teaching parents and educators to implement interventions specifically designed to address the disability. The various interventions may have adults use communication strategies to teach targeted language or communication behavior. For example, pivotal response treatment (PRT) targets pivotal areas of a child's development, such as motivation, responsiveness to multiple cues, self-management, and social initiations (Koegel, Symon, & Koegel, 2002). Adults are trained to recognize and support these targets. The research regarding PRT and training of other interventions for autism focus on the effectiveness of the intervention on the child. The focus was not on the characteristics, needs, or attitudes of the conversation partner. However, when communication is seen as a transactional process, it is imperative that intervention focuses on both partners and the environment (Mirenda & Iacono, 2009).

AAC and Autism

There is some discussion of communication partner training for individuals with ASD who use AAC. Interventions should assist caregivers in learning to use strategies that support communication, such as clearly identifying communication opportunities, providing models of communicative behavior, and using natural consequences such as responding to what is thought to be the communicative intent and expanding on the intended message (Mirenda & Iacono, 2009).

Children with ASD frequently have difficulty with social aspects of communication. Much of the current research has focused on the communication of wants and needs. There has been less attention on social interaction skills in AAC,

although current high-tech AAC systems can support social interactions (Mirenda & Iacono, 2009)

The SCERTS model is recommended as a comprehensive approach for ASD that also applies to individuals who use AAC. The transactional support domain of SCERTS addresses social partners' communication styles and their consistency in supporting the AAC user across activities, interactive partners, and social contexts (Mirenda & Iacono, 2009). This model is discussed in detail later in this review.

There are a handful of studies that focus on the skills of individuals supporting AAC users with ASD that report inconsistent results in outcomes for children. In a single-subject design, Hong et al. (2014) successfully trained four study participants to implement a tablet computer-based AAC system used by adults with ASD. However, there was little improvement of the independent use of the AAC system. Thunberg et al. (2009) taught the parents of three different children to use speech-generating devices (SPGs) in home routines. SPGs are electronic devices that can produce electronic versions of digital speech. Results varied among the children and the activities with no conclusive results on the consistent use of communication partner skills or the use of the SPG by the child. The mother of a 4-year-old was taught to use four naturalistic teaching strategies, including environmental arrangement, requesting, commenting, and questions. The parent improved in two of the strategies, and the child's initiations and responses in use of the communication system increased (Nunes & Hanline, 2007). A qualitative study examining the views and experiences of support workers and family members of adults with autism revealed strong support for AAC for both the adults with ASD and their communication partners; however, the authors of the study pointed out

inconsistencies in the use of AAC due to organizational practices, limitation in the knowledge and skills of key stakeholders, and problematic attitudes (Trembath et al., 2013).

Educators as Communication Partners of Individuals with Autism

The ASD literature includes research wherein educators are trained to implement specific intervention plans using communication strategies. For example, two studies assessing the effectiveness of the Picture Exchange Communication System (PECS) in training teachers of children with autism have been conducted (Ganz et al., 2013; Howlin, Gordon, Pasco, Wade, & Charman, 2007). PECS begins by teaching an individual to give a picture of a desired item to a “communicative partner.” The system goes on to teach discrimination of pictures and how to put them together in sentences. In the more-advanced phases of PECS, individuals are taught to answer questions and to comment using pictures. However, these are generally interactions where there is only one communicative exchange (Bondy & Frost, 2001).

In a recent study (Ganz et al., 2013), three behavioral therapy graduate students working in a preschool classroom received instructional coaching to increase opportunities for preschool-aged children to use PECS to make requests in real-life contexts. The participants attended three hours of in-service training in a group workshop where the phases of PECS were explained and demonstrated. The participants practiced each phase and received constructive feedback. Results from a multiple-probe single-case design across therapists with generalization probes indicated that participants increased use of PECS in trained contexts, but demonstrated limited generalization to

untrained contexts. The investigators discussed the efficacy of “one shot” training and suggested that future research assess training involving coaching and ongoing support.

In a randomized controlled trial (Howlin et al., 2007), teachers were trained to use PECS in a two-day workshop plus six half-day, school-based training sessions. The teachers received ongoing support in the form of expert consultation over five months. Although results indicated a small increase of students’ initiations and use of symbols in the classroom, there was no evidence of improvement in other areas of communication, and the treatment effects were not maintained once consultation ceased.

Parents as Communication Partners for Individuals with Autism

To date, several literature reviews of training programs for parents of children with autism have been completed. Just as with educators, parent training typically focuses on the implementation of a specific intervention for autism. The following reviews describe parent training that included communication and language as part of the intervention.

The first review (Meadan et al., 2009) targeted studies that examined the effectiveness of parent-implemented interventions that focused on supporting or enhancing social and communication behavior of young children. Twelve studies (comparative, evaluation, and evaluation with a generalization component) all reported positive outcomes for parents and children. All of the studies took place in natural settings and routines in the home environment. Many interventions taught to parents target communication skills (e.g., PRT, Functional Communication Training [FCT], the Early Start Denver Model, and milieu teaching). Specific communication strategies

included in the training were responsive teaching, incidental teaching, expectant waiting, establishing joint attention, imitation, and animation. Although the studies reported that parents were able to learn and implement new strategies, only a few of the studies included information on fidelity of implementation and generalization. Information about other services or therapies the children received during interventions was not discussed.

Another review focusing on availability of parent training also described consistent positive outcomes for parents and their children, regardless of the training content or the training format (Suppo & Floyd, 2012). This review included home- and facility-based training, teaching parents a variety of complex skills such as environmental arrangement, visual strategies, and behavioral principles through a range of training methods (e.g., manuals, lectures, modeling, and coaching). The authors looked at 23 studies written between 2001 and 2010. Eight of these studies involved training the communication partner to use specific skills that encouraged communication such as imitating the child, being animated, waiting for a response, using routines, responding to initiations, using pictures or other AAC, establishing joint attention, and taking multiple turns in interactions. All parents in these 8 studies were able to learn and implement the communication strategies.

Seven of the 23 studies looked specifically at training parents to use PRT. Each of the studies using PRT models reported that parents were able to learn to implement the model, resulting in increased initiations by the child and increased parent-child interactions. The reviewers concluded that children are likely to benefit when parents are

trained, regardless of the training, but that parent training is not always available or accessible (Suppo & Floyd, 2012).

A review of 11 single-subject research designs (4 were included in the previous review) revealed similar findings (Patterson, Smith, & Mirenda, 2012). Studies examined interventions that have manuals and protocols and, therefore, are more likely to be replicable, including PRT, the Natural Language Paradigm (NLP), and the Early Start Denver Model. Other interventions included discrete trial teaching, reciprocal imitation training, milieu teaching, joint attention training, and supporting natural behaviors. All of the studies involved one-on-one intensive coaching for parents of preschool-aged children. The studies included very little information describing the children or the communication partner, making it difficult to gauge the influence of parent or child characteristics on the different interventions. The reviewers concluded that parents have the ability to learn and implement the intervention strategies over a short period of time in a clinical setting after one-on-one instruction; however, it is uncertain whether parents are able to extend or modify strategies needed as their child develops. The reviewers also suggested that researchers examine the efficacy of parent training involving these intervention protocols in group settings.

A review of methods for training parents of children with autism (Matson, Mahan, & Matson, 2009) suggested that communication be included as a topic for parent training. The focus of this review was on behaviorally oriented interventions for autism. The reviewers suggested that successful training should include specific operationally defined behaviors, establish consequences, and maintain consistency in programming. They concluded, however, that consumers need more research to know the best behavior

intervention training for their child, and that training needs may change over time. A lifelong treatment model of parent training was recommended.

Peers as Communication Partners in ASD

Peers may also be considered as potential communication partners, especially when considering increasing opportunities for engagement. Training peers to initiate interactions and to play with students with ASD has been addressed in the literature. In a recent report (Wong et al., 2015), Peer Mediated Instruction and Intervention (PMII), was recommended as an evidence-based practice in addressing social, communication, joint attention, play, school-readiness, and academic skills for individuals with ASD. Most of the studies cited in the report focused on teaching peers strategies to increase engagement in play; however, two of the studies noted increased peer interaction as a result of peer tutoring in reading (Kamps, Barbetta, Leonard, & Delquadri, 1994; Petursdottir, McComas, McMaster, & Horner, 2007). Two additional studies looked at the effects of the number of peers needing to be trained for maximum engagement (Carter, Cushing, Clark, & Kennedy, 2005).

Several of the studies focused on early intervention and play. Five of the studies cited by Wong et al. (2015) reported increased or improved social interactions when preschool peers were taught to initiate interactions or to ask the student with ASD to play (Carr & Darcy, 1990; Kohler, Strain, Maretsky, & DeCesare, 1990). In another study, kindergartners were taught to stay with, play with, and talk to a peer with ASD (Laushey & Heflin, 2000). This peer-buddy approach also reported increases in positive social interactions.

The remaining studies cited by Wong et al. (2015) reported increased interactions and engagement when elementary-school-aged children were trained to interact with their peers with ASD (Owen-DeSchryver, Carr, Cale, & Blakeley-Smith, 2008; Kamps, Potucek, Lopez, Kravits, & Kemmerer, 1997; Lee, Odom, & Loftin, 2007; Sasso, Mundschenk, Melloy, & Casey, 1998). In these studies, peers were taught to understand and appreciate differences and to build friendships. For example, peers were taught to identify when they could play with the student with ASD, to consider what they might talk about or play, how they might help the student learn to play, and what they would do if the student didn't respond or showed unusual behavior (Owen-DeSchryver et al., 2008). In all of the studies reviewed by Wong et al. (2015), PMII peers were able to learn new skills, producing increased opportunities for communication.

Hanen Programs

The Hanen Early Language Parent Program uses group settings and the guide *It Takes Two to Talk* (Manolson & Hanen Centre, 1992) to teach parents to follow a child's lead and to take multiple turns in interactions. The focus of the program is teaching parents and educators to be responsive to children using specific strategies (e.g., matching a child's rate, imitating a child's utterance and expanding it by one word, being face to face, and repeating new information) in daily routines, storybook reading, art, and music activities. The training includes six to eight weeks of small-group instruction and three home visits from a speech language pathologist.

The guide, *It Takes Two to Talk*, was investigated in a study with parents of preschool children with cerebral palsy (Pennington, Thomson, James, Martin, & McNally, 2009). Eleven children aged 19-36 months and their mothers were observed at

four months before and at one month before mothers attended *It Takes Two to Talk* training, and then again at one month and at four months after its completion. A quasi-experimental design was used to compare mother-child pairs at four data points. Following training, mothers initiated less and produced more responses and fewer requests. Children produced more initiations as well as more requests and provisions of information after training. Changes were maintained four months later. *It Takes Two to Talk* may be associated with positive communication change for this group, but investigators cautioned that the program may need to be adapted for children with cerebral palsy because these children may have difficulties producing readable signals, reduced access to vocabulary, and a slow communication rate. Parents of children with cerebral palsy may need to be more directive, using more questions and commands in order to provide their children with communicative opportunities.

More than Words - Hanen is a program that has adapted the Hanen model to address the needs of children on the autism spectrum. The program maintains the eight group sessions and three home visits and is based on a social theory of communication development including the following characteristics:

- allowing the child to initiate interactions (as opposed to the adult always doing the initiating)
- following the child's lead and basing interactions on what interests and motivates the child to communicate
- treating the child's communication as if it is meaningful (even if it isn't, or if the parent doesn't understand what the child is "saying") and being responsive even if the child's communication is unconventional
- using natural, everyday situations as the context for learning to communicate so that communication is about real-life, meaningful things
- using the natural repetition, structure, and predictability of everyday routines to make it easier for the child to learn
- using visual supports, such as gestures and visual aids (pictures, photos, or written words) to help the child understand what others are saying as well as to express himself

- setting up the environment to encourage communication—e.g., briefly interrupting an activity in a playful way, changing a familiar routine to elicit a response from the child, and putting things out of reach.

(What Does the Research Say about More Than Words® – The Hanen Program® for Parents of Children with Autism Spectrum Disorder? 2014)

A controlled trial was used to compare outcomes for parents and children following parents' participation in a *Hanen More than Words* program (McConachie, Randle, Hammal, & Le Couteur, 2005). In this study, the parents of 51 preschool children with ASD participated in the program. Some of the families attended the program immediately upon being referred for speech and language services, and others (the control group) attended a program later on. The groups were not random, but were determined according to families' scheduling attendance in a program. The main findings were that parents were able to learn the interaction strategies and that they were likely capable of supporting their children's communication development. The children whose parents attended a course had larger reported vocabulary. However, the course lasted for three months, and the data were taken four months after the course ended and were based on parent report. Therefore, it was concluded that parents' enhanced strategies may have had a positive effect on their child's development of vocabulary, but researchers could not determine that there is a causal link.

A case study including three children with ASD and their mothers revealed additional positive results (Girolametto, Sussman, & Weitzman, 2007). Following participation in a *More than Words – Hanen* program, participants used additional responsive interaction strategies, and the results indicated that the children had developed larger vocabularies, communicated more often, and participated in turn-taking routines more often. Two of the three children also showed increases in social initiations. The

researchers concluded by suggesting that we encourage parents to focus on all communication especially child initiations.

A randomized, controlled trial compared the *More than Words - Hanen* program to a “business as usual” control group (Carter et al., 2011). The parents of 62 toddlers with autism participated in the study. Parents were taught to structure everyday routines to provide opportunities for initiations and response. Routines included joint attention routines, daily living routines, and books and play. They were taught to respond to children in linguistic and non-linguistic ways that promoted two-way communication. The training sessions addressed early childhood communication development and interaction styles thought to enhance communication. Specific strategies included teaching parents to follow the child’s lead, to use visual supports, scaffolding, and peer interactions to increase opportunities for their child to use more mature and conventional means of communication. Children’s communication and parental responsivity were measured at three different times. The researchers could not find a main effect of treatment on child outcomes; however, some children had clear gains in communication. Another interesting finding from this study was that children demonstrating limited object interest showed more gains than children who had relatively high levels of object interest.

SCERTS

The SCERTS model is a comprehensive educational approach for children with disabilities, including autism spectrum disorders (Prizant, 2006). An integral part of the program includes teaching specific skills to conversational partners. These skills include recognizing how to structure activities so that children can recognize and anticipate their

turn and modifying interactions in order to keep the child successful and engaged. The communication partner skills focus on keeping children in reciprocal turn-taking interactions.

Since we focus on teaching the child new skills, not on teaching the communication partner, the role of a communication partner is often neglected when creating goals for children with autism (Rubin & Laurent, 2004). The SCERTS model targets social communication and emotional regulation with interpersonal and learning supports. Interpersonal support requires the identification of a communication partner's interaction styles and language that either support or provide barriers to successful interactions. Ideally, communication partners provide enough structure to support a child's attentional focus, situational understanding, emotional regulation, and a positive emotional experience. The communication partner needs to foster initiations, spontaneity, flexibility, and self-determination. In the realm of learning supports, the SCERTS model focuses on communication partners being able to design and implement visual and organizational supports to:

- Expand and enhance the development of a child's expressive communication.
- Support a child's understanding of language and nonverbal behavior.
- Support a child's sense of organization.
- Support the development of language, behavior, and metacognitive emotional regulation strategies.
- Adapt or modify curriculum goals that are language based to enable the child to succeed to the extent possible.

A social exchange requires that all partners bear some responsibility to make the exchange successful. This process involves increasing the partner's awareness, investment in change, and focused change (systematic assessment of change). The SCERTS model suggests that every communication partner has different strengths and needs; however, key characteristics of an effective communication partner include:

- Partner is responsive to the child (e.g., follows the child's focus of attention, recognizes signs of dysregulation, offers support, etc.).
- Partner fosters initiations (e.g., offers choices, waits for and encourages initiations, etc.).
- Partner respects child's independence (allows the child to take a break, interprets behavior as communicative, etc.).
- Partner sets the stage for engagement (e.g., secures the child's attention, uses appropriate proximity and nonverbal behavior to encourage interaction, etc.).
- Partner provides developmental support (e.g., attempts to repair communication breakdowns, provides guidance in interpreting other's feeling, etc.).
- Partner adjusts language output (e.g., uses nonverbal cues to support understanding, adjusts complexity of language to the child's developmental level, etc.).
- Partner models appropriate behavior (e.g., models a variety of communicative functions, models dramatic play, etc.).

(Prizant, 2006, SCERTS SAP—Observation Form)

Teaching specific skills to conversational partners is an integral part of the SCERTS program, but research has not been conducted on that aspect of the model. To date, only one study has been conducted on the SCERTS model. An interpretative phenomenological analysis at a residential special education school in London (Molteni et al., 2013) examined the SCERTS model, focusing on the multidisciplinary aspect of the model. Through observation, focus groups, semi-structured interviews, and questionnaires, three teams of professionals were involved with three different children. Interestingly, the research team concluded that the SCERTS model recognizes that a student's mastery of a task depends on feedback from the entire team.

Aphasia

Communication partner training as a treatment approach for aphasia has been well addressed in literature about individuals with aphasia that considers the impact of communication partner training on language, communication activity, psychosocial adjustment, and quality of life for adults with aphasia (Cherney, Simmons-Mackie, Raymer, Armstrong, & Holland, 2013; Simmons-Mackie et al., 2010; Turner & Whitworth, 2006b). Initially, the idea of communication partner training for individuals with aphasia was implemented to increase the individuals' engagement in society (Kagan, 1998). The various approaches were designed to decrease the psychosocial effects of aphasia by increasing the individuals' communicative access with the support of a trained partner (Turner & Whitworth, 2006b). In more recent aphasia literature, communication partner training is described as an environmental intervention that uses supports and strategies external to the person with aphasia to change the communication environment (Simmons-Mackie et al., 2010). Simmons-Mackie et al. defined the "end goal" of communication partner training as facilitating the participation in all communication activities. These researchers also discuss the importance of a system-wide approach to training communication.

Simmons-Mackie (2013) recognizes the value of communication partner training, but points out that direct training of potential partners does not ensure that practices will be implemented. The author suggested that experts take a broader approach in implementing evidence-based practice in organizations. Simmons-Mackie explained that it is not only necessary to decide what to teach communication partners (e.g., taking turns, giving sufficient time, showing interest and respect, multi-modal communication,

and verifying understanding), but also to identify who should be trained and to identify the key stakeholders influencing the practices that will be taught. The author also recommended that experts consider the stages associated with behavior change, with the first stage being awareness and knowledge of the new practices.

Three methods of communication partner training to support individuals with aphasia have been identified in the literature (Kagan, Black, Duchan, Simmons-Mackie, & Square, 2001; Turner & Whitworth, 2006b): Conversation Analysis Motivated Therapy, Supported Conversation for Adults with Aphasia, and Conversation Coaching. All three methods recognize the individual with aphasia as a partner in the conversational dyad.

Conversation Analysis Motivated Therapy is an approach that recognizes conversation as a collaborative process where success in conversation is the responsibility of both partners. Each participant's turn is shaped and related to the prior turn of each participant. Analysis of conversational interactions focuses on behaviors such as turn-taking and topic management in naturally occurring conversations (Turner & Whitworth, 2006b).

Supported Conversation for Adults with Aphasia also focuses on having partners share the communication load. This approach teaches communication partners to provide opportunities for communication in order to increase engagement in society. Communication partners encourage the individual with aphasia to use any and all means of communication. Partners are trained in acknowledging and revealing competence of the person with aphasia by ensuring comprehension and ability to respond and by verifying the response. Any individual can use these general strategies in varying

communication contexts. This approach is driven by the idea that “the competence of people with aphasia can be revealed through the skill of a trained conversational partner” (Turner & Whitworth, 2006b, p. 486).

The idea of “sharing the load” is also seen in Conversation Coaching, an approach in which the communication partner and the individual with aphasia select the communication strategies they want to work on and are then guided by a clinician or coach. The dyad practices communication scenarios involving verbal and nonverbal strategies. The targeted strategies are determined by the dyad, rather than the clinician (Turner & Whitworth, 2006b).

A systematic review of 31 studies, encompassing 11 group studies, 7 single-subject experimental designs, 5 qualitative studies, and 8 case studies from 1975-2008 (Simmons-Mackie et al., 2010), added insight to the landscape of communication partner training for individuals with aphasia with the following findings:

- Over half of the studies involved training the person with aphasia and the communication partner, while the rest focused on training communication partners only.
- The majority of the studies focused on training persons related to the individual with aphasia, and five of the studies addressed training healthcare providers or volunteers.
- Eighteen studies involved group training, 10 involved dyad training, and 3 involved training the conversation partner alone.

- The content of the training was not always presented in detail; however, six of the studies were predominantly devoted to education about aphasia, and five were devoted to psychosocial counseling.
- Twenty studies focused on training communication strategies involving role play and actual interaction between communication partners and individuals with aphasia, with trainers providing therapeutic feedback. Typically, therapy was presented in 1- to 2-hour sessions up to four times per week.
- Other interventions were in block form, such as workshops or camps; most took place in community or medical settings.
- The most recent research has focused on communication activity training involving real-life conversation between the dyad and other members of the community, rather than training focused on educational and psychosocial support.

The researchers performing the review concluded that, overall, a skilled communication partner is able to facilitate and support the communication of people with aphasia. However, these reviewers found inadequate evidence supporting statistical improvement in language impairment, psychosocial well-being, or quality of life for individuals with aphasia. The authors reported that these studies did not consistently report on the specific characteristics of the individuals being trained and felt that this could influence the outcome of partner training.

Turner and Whitworth (2006c) reviewed nine of the same studies reviewed by Simmons-Mackie et al. (2010) to see if they could identify the type of people who might benefit from communication partner training. The communication partners were family

members or adult volunteers. They concluded that the studies did not include enough detailed information about the communication partners (e.g., selection criteria and participant description) to determine clinical applicability of the studies. The reviewers recommended qualitative research that could begin to identify key variables in dyads and the effect of communication partner training on those dyads.

Cherney et al. (2013) studied 23 of the same studies reviewed by Mackie et al. (2010). This review pointed out the variability in methodological quality of research in communication partner training in aphasia. The researchers discussed group studies, single-subject designs, and qualitative studies. They noted that the research on communication partner training varied greatly, with group studies being much less rigorous than single-subject or qualitative studies. They noted that a failure to report methodological quality criteria contributed to low ratings of past research and recommended that future research use methodological rating scales that fit the research design.

In an additional study, Turner and Whitworth (2006a) explored experienced clinicians' perceptions of communication characteristics and attitudes of conversation partners of individuals with aphasia. The results of questionnaires suggested that a communication partner's attitude towards communication is more influential than the partner's conversational behavior in determining a good candidate for communication partner training. The authors used that information to create a Profile of Partner Candidacy for Conversation Training.

This profiling tool assists in predicting success of communication partner training. The tool identifies high- and low-candidacy communication partners. High-candidacy

qualities include attitudes that view conversation as a collaborative act and value the social function of conversation, acceptance of multi-modal communication, willingness to change own conversational style, and acceptance of the communication status of the person with aphasia. High-candidacy conversation behaviors include conversation repair (understanding the breakdown and facilitating conversation repair), turn-taking (accepting the turn of the person with aphasia, encouraging initiations, and avoiding over-questioning), topic management (co-constructing topics, maintaining topics by summarizing, or paraphrasing), and nonverbal skills (good listening skills including appropriate eye contact and using appropriate tone and volume). The authors suggested that deficits in these characteristics should be targets for successful communication partner training.

Two additional studies discussed the experience of the communication partner and the individual with aphasia. The first, by Paul and Sanders (2010), explored the needs of the communication partner, looking at interventions to improve education. Using a qualitative research design, nine participants were interviewed. The participants were adult children, spouses, or significant others and were included in the study if they were the primary communication partner and had been in that role since their partners' onset of aphasia. The researchers found that the needs of these communication partners were not being met. Some of the barriers in receiving education included: short hospital stays, healthcare workers' misperception of communication partner's needs, and an uncertainty as to who is responsible for providing health care. Communication partners stated that participating in therapy sessions, support groups, and one-on-one attention were helpful in learning how to support the individual with aphasia. The researchers

concluded that communication partners need information at a variety of levels and should consider the communication environment and both individuals in the dyad.

A later study (Johansson, Carlsson, & Sonnander, 2012) explored how people with aphasia experience conversations, looking at how they perceive their own and their partners' use of communication strategies. The participants included 11 adults with chronic aphasia. They reported enjoying conversations, even though, their aphasia negatively impacted their ability to engage in conversation. They noted the positive effects of skilled communication partners. This included the communication partner's knowledge and understanding of aphasia, their use of conversation strategies such as asking yes or no questions, writing down key words, showing interest, or giving the individual time to find the word they wanted. The researchers suggested that communication partner training should be included in aphasia rehabilitation.

Conclusions

Potential communication partners do not inherently possess the skills necessary to support individuals who struggle to communicate. Current literature regarding communication partner training suggests that individuals are capable of learning and using communication strategies, regardless of the disability of the individual they are supporting (Kent-Walsh et al., 2010; Matson et al., 2009; Patterson et al., 2012; Simmons-Mackie et al., 2010). There are common characteristics or concerns of communication partner training for supporting various disabilities. Across disabilities, communication partner training consistently involves: identifying opportunities for communication; modifying or using the environment to support communication; supporting opportunities for initiations, and turn-taking interactions.

The literature on AAC and individuals with severe disability also considered the communication partner's willingness to learn new skills and focused on supporting the individual's engagement in society. Researchers discussed the importance of teaching the communication partner to be aware of the environment and the individual with disability's access to communication and then to support opportunities for engagement. The focus of training was on teaching very specific, step-by-step strategies (e.g., asking a question and modeling the answer) in order to increase initiations and turn-taking (Binger et al., 2010; Culp & Carlisle, 1988; Douglas, 2012; Kent-Walsh & Light, 2003; Rosa-Lugo & Kent-Walsh, 2008).

In the field of autism, a few studies examined communication partner training, looking at comprehensive characteristics of the communication dyad (Prizant, 2006; Sussman, 1999). The majority of the literature in autism focused on training adults to be interventionists. Depending on the intervention, training may have included one or more of the noted topics (identifying opportunities for communication, modifying or using the environment to support communication, supporting opportunities for initiations, and turn-taking interactions) (Goldstein, 2002; Matson et al., 2009; Meadan et al., 2009; Suppo & Floyd, 2012). Peer-mediated interventions have also shown an increase in opportunities for engagement (Wong et al., 2015), suggesting peers are also potential communication partners.

The *More than Words - Hanen* program (Sussman, 1999) and the SCERTS model (Prizant, 2006) present a comprehensive look at attitudes, interaction styles, and strategies needed to be an effective communication partner for individuals with autism. Both of these models focus training on increasing opportunities for engagement and then

maintaining and extending turn-taking interactions. The adaptation and use of the environment to support communication is addressed in training, including the emotional effects that can be increased or reduced by environmental stimuli. Much like the aphasia literature, these models focus on the interaction. Turn-taking is based on shared control, recognizing that both people have an influence on the conversation (Manolson & Hanen Centre, 1992; Prizant, 2006; Sussman, 1999).

In the field of aphasia, current communication partner training might be described as comprehensive, as it addresses the previously noted topics and focuses on the needs of both individuals in the interaction. Communication partners of individuals with aphasia are taught to use all resources to capitalize on communication opportunities (e.g., text, pictures, and gestures might be included as strategies). The characteristics and strategies necessary to support conversation and engagement in society are considered as they impact both people in the interaction. The conversation and extended turn-taking was often the focus of training. The aphasia literature also addresses the attitudes of communication partners and their willingness to change their interaction style and to accept the individual with aphasia as a partner (Kagan, 1998; Simmons-Mackie, 2013; Turner & Whitworth, 2006c).

It is in the aphasia literature that role and the needs of the communication partner are best addressed. This complex role should be considered as it applies to all communication disorders, including ASD.

CHAPTER III

METHODOLOGY

Theoretical and Personal Research Stance

When communication is seen as a transactional process, it is important to consider the needs of a communication partner (Mirenda & Iacono, 2009). As presented in Chapter II, adults are capable of supporting language and communication skills in children with autism spectrum disorder (ASD), especially when given a specific intervention or communication strategy (Goldstein, 2002; Meadan et al., 2009). The discussion in aphasia literature has addressed many of the needs and characteristics of a communication partner supporting an individual whose language and communication needs to be accepted and supported, regardless of the severity. The reciprocity necessary in supporting all communication and providing opportunities for engagement across settings and partners is well addressed in aphasia literature (Kagan, 1998; McVicker et al., 2009; Simmons-Mackie, 2013; Turner & Whitworth, 2006c).

Communication deficits vary greatly for individuals with ASD; however, these individuals need support at every level (American Psychiatric Association et al., 2013). In order to provide the information and training needed by communication partners supporting individuals with ASD, it is important to understand how adults perceive their role as a communication partner. Focusing on the dyad of conversation, rather than

teaching language, provides a new understanding of the experience of the communication partner in this transactional process.

Research Design

With other disabilities in which communication and language are primary areas of need—such as aphasia—the role of a communication partner has been closely evaluated. The knowledge needed by communication partners and the specific skills and strategies to support the individual with a disability have been discussed (Kagan, 2001; McVicker et al., 2009; Simmons-Mackie, 2013; Turner & Whitworth, 2006c). However, the type and amount of information and skills needed to support all communicative interactions for individuals with ASD are not well addressed in the current literature. This study explored the experience of a communication partner as it was presented between a high school student with ASD and his Individualized Educational Program (IEP) team. A qualitative single case study was used to investigate the phenomenon of the communication dyad with the following questions:

- Q1 How does the IEP team of a student with ASD perceive their role as a communication partner?

Further propositions included:

- Q2 How do perceptions of the role of a communication partner differ based on the adults' level of training or experience with students with autism spectrum disorder?
- Q3 What, if anything, do team members perceive they need in terms of information and/or training in order to be adequately prepared as effective communication partners?
- Q4 What are the barriers and/or supports in the school setting that affect the role of a communication partner?

Qualitative methodology provided the opportunity to identify and understand the many factors that affect communicative success for individuals with ASD and their communication partners. Communication is complex, with many variables among people, contexts, and environments. All of these variables must be considered when examining the role of a communication partner.

The researcher employed a single case study that allowed the researcher to consider how and why this social phenomenon works. Yin (2013) provides a two-part definition of a case study. One part deals with the scope of a case study and describes the inquiry as one that investigates a contemporary phenomenon or case in depth and within its real-world context, where the boundaries between phenomenon and context may not be clearly evident. The other half of the definition describes the features of a case study as being able to:

Cope with situations where there are many more variables of interest than data points and as one result relies on multiple sources of evidence with data needing to converge in a triangulation fashion, and as another result benefits from prior development of theoretical positions to guide data collection and analysis. (pp. 16-17)

In the current study, the case was the experience of being a communication partner as part of an IEP team of an individual with high-functioning ASD. This phenomenon was studied in depth in its real-world context. IEP team members of a high school student were asked to share their experience as a communication partner, as individuals and as part of a team. Strategies used to ensure dependability and credibility included triangulation, investigator's position, and an audit trail.

Cross checking data using multiple sources of data (e.g., interviews, observations and artifacts), or triangulation, was one way of ensuring internal validity or credibility.

Multiple methods of data collection over different times and places strengthen a study by allowing for cross-data validity checks (Patton, 2002). The case study methodology is anchored in real-life situations, providing a holistic account of the phenomenon. By investigating the experience of the IEP team, or the case in this study, the researcher was able to shed light on this complex phenomenon. Readers can learn vicariously through the researcher's rich descriptions (Merriam, 2009). By illuminating meaning in this single case, readers can expand their own experiences, future research can be structured, and the knowledge base on this topic can be expanded (Merriam, 2009).

Artifacts including the student's most recent IEP and progress report were reviewed. In-depth interviews were conducted with 13 IEP team members. In order to further strengthen the study, the researcher, with a rich background in the areas of communication and autism, observed the team members in communicative interactions with the student. Observations were completed until the researcher had reached a point of saturation. Saturation occurs when no new data or information surfaces which ensures internal validity (Merriam, 2009).

Two people independently analyzing and coding the same data is another form of triangulation (Merriam, 2009). In this study, a second investigator independently coded 25% of the data coded by the primary researcher. They then compared and discussed their findings. A final strategy used by the researcher to ensure dependability and credibility was creating a detailed audit trail.

An audit trail describes how data were collected, how categories were derived, and how decisions were made throughout the process (Merriam, 2009). Although qualitative researchers do not expect others to replicate the study, the researcher

presented detailed information on how results were attained and analyzed. This detailed information and rich, thick descriptions allow readers to determine the extent to which this case matches their situation and whether information can be transferred.

There are, however, limitations to a single case qualitative study. The focus on a single case makes the issue of generalizability a greater concern than with other qualitative research (Merriam, 2009). However, if there are sufficient descriptive data, then transferability is possible. Transferability, or the ability to apply lessons learned from life events that are not random, was the goal of this qualitative research.

Another limitation to single-case study methodology is that of researcher bias. Research results depend on the sensitivity and the integrity of the researcher as the primary instrument of data collection (Merriam, 2009). In the current study, the primary investigator had an extensive background in communication partner training. With over 25 years as a speech language pathologist (SLP), the investigator stated the importance of looking at the communication dyad of conversation, rather than teaching one intervention program or even focusing on language development. From that perspective, the researcher relied on personal history to pursue a better understanding of the communication partner experience.

Participants and Site Selection

The IEP team and student were carefully selected for this study. Purposeful sampling, as used here, allows the researcher to capitalize on the “information-rich” experience of the case (Patton, 2002). This team, including the family, was purposefully selected for this in-depth study because of their interest and knowledge in supporting the communication skills of the student with ASD.

IEP Team

The IEP team of the identified freshman student diagnosed with high-functioning autism was the focus for this case study. The case was bounded by the IEP team that included the school principal and assistant principal, both parents, two special education teachers, four general education teachers, three educational assistants, a Statewide Assistive, Alternative and Augmentative Communication (SWAAC) professional, a speech language pathologist (SLP), the school psychologist, and an occupational therapist (OT).

Since receiving the diagnosis of severe autism when their son was 2 1/2 years old, the identified student's family has been actively involved in his academic, communication, social, and emotional intervention. Both parents, as key members of the IEP team, had worked with multiple professionals in the past, including the researcher. They had received extensive training in how to support their son, including gaining knowledge and skills as communication partners. They were highly motivated to participate in this study and felt positive about the capabilities of the high school IEP team members.

The high school IEP team members demonstrated a positive relationship with the student and his family. The family felt strongly supported when 15 professionals from the high school participated in the student's transition from middle school. The family and the team had developed positive collaboration and communication opportunities.

Student

This student was able to communicate his wants and needs; however, he needed support from adults in social situations. He was working on initiating and maintaining

conversations, initiating interactions with peers, and independently expressing his concerns or opinions. He worked with a speech language pathologist (SLP) once a week in a small social-skills group in school. Outside school hours, the student received private therapy one to two hours a week in reading, sports therapy, and specialized behavioral interventions with an autism specialist.

As part of the transition from middle school to high school, the IEP team decided that this student would attend general education classes 40–70% of the time and would be in an intensive learning classroom (ILC), which is a self-contained special education classroom, for the rest of his instruction. He attended general education classes in social studies, science, computer lab, and choir where the student was supported by a special education teacher or an educational assistant. The student needed one-on-one assistance in reading and writing tasks in the general education classroom. Reading, English/language arts, and math instruction were in the ILC.

Site

The site chosen for this case study was a public high school in a small rural town in the western United States where the identified student attended school. The school was the smallest and the highest performing of the five high schools in the district. The school had approximately 650 students in Grades 9 through 12. It was estimated that 50 students with mild to moderate needs were in the special education program. Approximately 5 to 10 students were in the ILC at a time. The special education program employed two full-time special education teachers and three full-time educational assistants.

Data Collection Procedures

The school district's Instruction Department granted permission for the study upon Institutional Review Board (IRB) approval from the University of Northern Colorado. Eighteen members of the IEP team were contacted via email. Thirteen members of the team agreed to participate in the study and signed an informed consent form (Appendix A). The identified student was asked to sign an assent form (Appendix B), and the parents of the student were asked to sign a permission form (Appendix C) and a consent form (Appendix A).

Interviews

Thirteen IEP team members participated in the study. Each participant was interviewed by the primary researcher. A semi-structured protocol with defined subject areas related to the research questions was used as a guide during these conversational interviews (Appendix D). The same protocol was used with all participants. The protocol questions elicited information on the participants' role (i.e., teacher, educational assistant, parent, etc.) with the identified student.

At the beginning of each interview, team members were asked to share their level of training or experience with communication and/or ASD. During the interview, participants were asked to describe their interactions in supporting communication for students with ASD, in general, and specifically for the identified student. The term *communication partner* was defined for each participant as any individual in a position to support all communication including conversation. The importance of recognizing opportunities for communication (e.g., having the student share his opinions and

explaining his ideas) was described. The idea of sustained engagement or conversation was presented as an opportunity for the student to recognize the needs of his listener.

Participants were encouraged to share their opinions and perceptions beyond the protocol questions. Specific questions were asked regarding the participants' awareness and understanding of their role as a communication partner. Subject areas included current and past experience as a communication partner, descriptions of the experience individually and as part of a team, and attitudes and opinions about strategies and supports needed to be an effective communication partner.

The occupational therapist (OT) was interviewed in her office off-site, and the State Wide Assistive Technology, Augmentative and Alternative Communication (SWAAAC) professional was interviewed via telephone. The special education teachers, the education assistants, the speech language pathologist (SLP), and the school psychologist were interviewed at the school in a quiet room, separate from the classroom. Those interviews occurred during school hours when participants were scheduled for a break. Both of the participating general education teachers were interviewed after school. The parents were interviewed in the evening hours in their home. The mother was interviewed by phone a second time in order to obtain more detailed information about her son's past and current communication skills. The length of the interviews ranged from 15 minutes to 50 minutes with an average length of 30 minutes.

Observations

Another source of data collection was direct observation of the participant interactions with the identified student in the school setting on seven days over a three-week period. The researcher observed participants in the intensive learning classroom (ILC) during social situations and when they were instructing the student. Observations were also conducted in the main lunchroom, in two general education classrooms, and during speech and language therapy in and out of the classroom. The student was observed in every part of the school day and was observed in some settings more than once (Table 1).

Table 1

High School Observations of IEP Team

Date of Observation	Place	Time
1-20-15	High school lunch room	10:45 - 11:00
1-20-15	ILC	11:00 – 3:30
1-22-15	ILC	9:00-12:30
1-22-15	Speech language therapy room	1:00 – 1:30
1-26-15	ILC	1:00 – 3:30
1-27-15	General education classroom (Geography)	9:30 – 10:00
1-27-15	Nurse's office	10:00 - 10:30
1-27-15	ILC	11:30 – 2:30
1-28-15	ILC	1:30-3:30
2-03-15	ILC	10:45 – 12:00
2-06-15	ILC	7:30 – 11:30
2-06-16	General education (Computer Science)	1:00 – 2:15

Field notes were taken on all communicative interactions with the identified student. Communication opportunities that were supported and those that were missed by the team were noted. Observations of the environment and the interactions among team members were also noted. Communicative interactions were described in detail, including the initiator of the interaction and the types and number of exchanges (e.g.,

questions, comments, requests or clarification etc.). The researcher observed every participant until a point of saturation was achieved and no new behaviors were noted.

Artifacts

Artifacts included the student's IEP and his most recent progress report, which were obtained from the student's mother. Progress monitoring data was requested, but not obtained for review. It should be noted that the researcher did not observe anyone taking data on the student's goals. There were two visual schedules, a calendar and a chore chart, posted in the room. The use of a communication book, to share information between home and school, was noted in the student's IEP; however, one was not being used.

Researcher Role

As the researcher, I had full responsibility for all data collection and analysis. In all qualitative research, the researcher is the primary instrument in data collection and analysis (Merriam, 2009). The primary researcher established 16 axial codes resulting from open coding. The axial codes were given to an independent researcher who then reviewed and independently coded 25% of the data. Both researchers agreed that all 16 axial codes could be further grouped into seven categories. The primary researcher identified the three themes that emerged from those categories.

Data Management

Observation notes, artifact notes, and audio recordings were transcribed verbatim and then stored electronically on the researcher's computer during collection and analysis. Data were imported into NVivo computer assisted qualitative data analysis software. In the software, each interview was labeled as a separate data source.

Observation notes were entered as separate sources according to the date of the observation. Both of the artifacts collected were entered as separate sources in NVivo. Twenty-five percent of the observation and interview sources were delivered to the second coder via flash drive. Coding by both investigators was completed using NVivo. At the completion of the study, all electronic files and original observation notes were transferred to the research advisor and stored for a period of three years. After that time, all files were destroyed.

Data Analysis

Strategies for Analysis

The propositions shape data collection and, therefore, present the priorities for analysis (Yin, 2013). The general strategy for analyzing the data was based on stated propositions using an interpretive or constructivist approach to describe the phenomenon. The investigators attended to every piece of data related to the research questions or propositions. Using the triangulation strategies previously discussed, the data were continually cross-checked and compared until all data sources were coded. Open and axial coding process is explained in the Interview Transcription section. Axial codes were condensed into the following themes: *demographics, existing skills, missed opportunities, student outcomes, training needs, collaboration, and barriers to collaboration*. Systematic descriptions of the data were presented from these themes.

These seven themes were discussed in answering the research questions and to further describe the phenomenon of the communication partner experience. Complete data analysis is presented in Chapter IV.

Interview Transcriptions

Each audio-taped interview was transcribed verbatim. A manageable coding scheme is important for data analysis (Patton, 2002, p. 463). Data analysis or category construction began with open coding. The process of open coding included identifying any segment of information that might have been useful in answering the research question, with the investigator being open to any possibility (Merriam, 2009). The open codes from the first transcript were then grouped to create an axial code list of 15 themes including: training in ASD, awareness of the communication partner role, barriers in being an effective communication partner, student behavior and anxiety, final perceptions about the role, general perceptions about the role, how communication is supported, I don't know what I don't know, communication is complicated, missed opportunities, team support, trial-and-error winging it, understanding or awareness of the student's needs, training needs, and demographic information.

The next interview was then read and coded the same way, comparing open and axial codes from the first interview. Yin (2013) stated that high-quality analysis includes attending to all data collected and using as much evidence as possible. Every piece of evidence or information from the remaining interviews, the artifacts, and the observations fit into one of these 15 axial codes.

Observations and Artifacts

Field notes were taken on the type (requests, protests, salutations, etc.) of interaction, the number of exchanges within the interaction, communication breakdowns, communication opportunities, and any other behavior that provided insight on how the participants interacted with the student. Field notes were labeled by date and entered as

separate sources in the NVivo software program. Artifacts were entered in NVivo in their original report form. The same coding process used for the interview data was used on all observation notes and artifacts.

Reliability

Coding reliability is increased by using multiple independent coders (Patton, 2002). In this analysis, a second investigator used the identified axial codes to analyze three observation transcriptions and four interview transcriptions and created an additional code labeled “student outcomes.” The two investigators then met to further analyze the axial codes. It was agreed that the codes could be refined into the following themes: *demographics, existing skills, missed opportunities, student outcomes, training needs, collaboration, and barriers to collaboration*. The investigators were in agreement that all coded data fell within one of the listed themes and could be analyzed as such.

Protection of Participants’ Rights

Informed consent was obtained from participants prior to any data collection (Appendix A). Participants were informed of the purpose of the study, and confidentiality was maintained in the reporting of the results. All audio recordings were destroyed once they were transcribed and saved electronically. All electronic files were destroyed after three years. Results of the study were made available to participants wanting that information.

Timeline

Once IRB approval was obtained, an invitation with a description of the study was sent to all 18 IEP team members. Once signed consent had been obtained from interested participants, interviews were scheduled. Observations began on the same day as the first

interview and continued for two weeks. All data collection was completed within two weeks. Data analysis was completed five weeks later.

Summary

This qualitative single-case study provided a holistic account of an IEP team's perception of their role as communication partners for a verbal student with ASD. By investigating the phenomenon in its real-world context, investigators were able to explore the needs of communication partners supporting students with ASD. Using multiple methods of data collection (interviews, artifacts, and observations) and step-by-step coding and analysis, the explanation of many interrelated variables involved in communication was possible. The results were intended to shed light on how the IEP team members experienced their role as communication partners and how greater understanding of this role might lead to better outcomes for students.

CHAPTER IV

DATA ANALYSIS

Introduction

This qualitative case study explored an IEP team's perception of their role as communication partners of a high school student with ASD. The study focused on the IEP team members' awareness of their role and considered the information and training needed to be effective communication partners. Interviews, artifacts, and observation data were gathered into one database using NVivo qualitative data analysis software. The data were then analyzed in stages.

The first stage involved open coding. Every piece of meaningful information was identified and coded. Open codes were then grouped into the following axial codes: training in ASD, awareness of the communication partner role, barriers in being an effective communication partner, student behavior and anxiety, final perceptions about the role, general perceptions about the role, how communication is supported, I don't know what I don't know, communication is complicated, missed opportunities, team support, trial-and-error winging it, understanding or awareness of the student's needs, training needs, and demographic information.

All information from axial codes was then compiled into the following themes: *demographics, existing skills, missed opportunities, student outcomes, training needs, collaboration, and barriers to collaboration*. These themes are presented to describe the

team's perceptions of their role as communication partners to answer the following research questions:

- Q1 How does the IEP team of a student with ASD perceive their role as a communication partner?

Further propositions included:

- Q2 How do perceptions of the role of a communication partner differ based on the adults' level of training or experience with students with autism spectrum disorder?
- Q3 What, if anything, do team members perceive they need in terms of information and/or training in order to be adequately prepared as effective communication partners?
- Q4 What are the barriers and/or supports in the school setting that affect the role of a communication partner?

To set the stage and to understand the phenomenon of the communication partner experience in this case, the school setting followed by information about the student will be presented. To protect the privacy of the student, the pseudonym Daniel will be used to report the findings. Daniel's communication needs and his abilities, past and present, will be described in detail, using information from the theme *student outcomes*. The theme demographics will be used to describe the IEP team's role with Daniel at school.

The Setting

Daniel attended a small rural high school located in the western United States. There were two elementary schools in the town, but all the students came together in one middle school. The same group of children typically stayed together through high school. Although there was some dissension in middle school as to which elementary school was better, by the end of middle school, students had bonded, including Daniel. He was always treated well by his classmates.

Daniel's high school operated in what might be considered a typical rural school setting. When you walked through the large glass front doors, you were in the main lobby. The lobby also served as the lunchroom. The maze of hallways leading from the lunchroom to the classrooms was crowded and noisy, especially during passing periods. The intensive learning classroom (ILC) classroom, where Daniel spent part of his day, looked like any other classroom from the hallway. Inside the ILC, there was a kitchen area with a sink, microwave, and refrigerator, plus a row of computers against the wall of windows. In the corner, there were couches and chairs. This area was described as a sensory, or break, area. There was a large daily schedule posted on one wall and smaller chore charts, birthday calendars, and individual student data charting sheets posted around the room. Small-group instruction took place around the room at tables. The groups typically consisted of two to six students.

During my observation, 11 students (three females and eight males), including Daniel, two special education teachers, and three educational assistants filtered in and out of the ILC classroom. There were at least two and as many as five adults in the room at any time. All but one of the students were verbal. Three females and five males were extremely social and visited with each other and with the staff about topics of their own and those introduced by the staff.

The special education teacher or an educational assistant accompanied Daniel to his general education classes. An educational assistant reported that Daniel was sure to leave the ILC early and be the first to class or lunch, a strategy he used to avoid the loud and crowded hallways and lunch line. At lunch, he was often the first one in line. On a day that I observed, he got his lunch and then chose a large circular table in the middle of

the room. He quickly ate his lunch by himself and then returned to the ILC. Daniel spent most of his lunchtime alone in the break or sensory area looking at books, while everyone else in the room was gathered around the lunch table. The educational assistant was aware of Daniel and on one occasion, asked how he was doing, to which Daniel replied, “Fine,” and the interaction ended. Adults did not promote or encourage Daniel to engage in social interactions during lunchtime.

The Student

The early years. I first met Daniel shortly after his diagnosis of ASD, when he was 2 1/2 years old. Daniel’s mother, Jane, described the beginning of their journey as horrific. She and her husband, Joe, began to notice that Daniel wasn’t learning the same way as his sister, who was five years older. Daniel’s delays, especially in the area of language, prompted them to go to a children’s hospital for an evaluation. Jane remembers that at the first evaluation session, she was told that she and her husband had a lot of work to do, and they couldn’t be sure that the work they did would make a difference.

At that time, Daniel spoke approximately 25 words. Most of those words referenced *Thomas the Tank Engine*, a cartoon series about trains. He did say “mom” and “dad” and had an approximation for his sister’s name, but communication with his family was very limited. Daniel would become so angry or frustrated when expected to engage with adults that he would throw tables and chairs. He would cry inconsolably. Jane said that their entire life was affected by the behavior. Daniel did not like to leave his home. He found stores and restaurants overwhelming and did not like to be around a lot of people or hear loud or unexpected noises. By age 3, Daniel’s behaviors were at

their worst. At that time, I was providing intensive speech and language intervention three to four times a week, which continued for the next two years. Daniel, who was nonverbal at the time of his diagnosis, began communicating verbally by age 4. He continued to make progress in speech and language therapy and was seen once a week for the next five years by other SLPs and behavior specialists and by me.

Elementary school. By the time Daniel was 5, the family was taking him to one type of therapy or another several times per week. One or both of his parents attended every session, whether it was occupational, speech and language, or behavioral therapy. By the time he was 10, Daniel's speech and language intervention focused on social communication skills and reading, which continued to be his primary areas of need. Daniel's parents consistently participated in treatment and contributed to his success throughout the years.

Daniel continued to make progress in all areas. His family knew anxiety was interfering with his progress, and after much soul searching and debate, they decided to try medication. Daniel responded immediately. His calmer demeanor allowed Daniel to be more successfully engaged at home and in school. He was able to tolerate being spoken to and being in close proximity to other people. Jane recalled the day that Daniel was finally able to stay in circle time at preschool. That year, he started kindergarten in a fully inclusive setting and joined the local 4-H club with his sister.

At home with his family, Daniel continued to gain language and communication skills, but he demonstrated minimal language and communication at school. In kindergarten and first and second grade, Daniel did not often engage others. He had the same educational assistant most of the time and developed a strong relationship with her.

By the end of second grade, Daniel had made a friend his own age. He began to play with a boy in his class and even had the boy come for playdates on a few occasions. Most of Daniel's interactions with friends were parallel play, wherein Daniel played beside other children with minimal interaction. He did take turns in play that was more physical, such as jumping on the trampoline, and playing games that had structured turns, such as board games.

In third grade, Daniel started caring about who he was with at school. Daniel invited friends to his birthday parties and seemed to enjoy the celebration. He still did not want to go to friends' houses, though, and preferred to be home in his familiar routine. Daniel readily played with his sister and his cousins. It was still primarily parallel play, but Daniel was beginning to be more interactive and allow others into his pretend play scenarios, which usually involved dinosaurs. By the end of elementary school, Daniel had become fairly accomplished at expressing his wants and needs with family members. However, he was less communicative at school. Daniel talked mainly to the educational assistant, and even then, only minimally. One of his IEP goals at that time included using three-word sentences to make requests.

Middle school. It was in middle school that Daniel truly blossomed. Jane, Daniel's mother, described Daniel as more relaxed and engaged. He spent time in the general education classes and in an ILC classroom for students with special needs. Daniel maintained the friendship with the boy from second grade, who was also in the ILC. Daniel ate lunch with his friend and with typical peers. As typical peers became more interested in sports and girls, Daniel spent more time with the other students in the ILC. He also had a friend outside of school whom he had met in a social skills group. In

this group, the students were encouraged to call each other and to make dates to do things together. Even when it was no longer an expectation of the group, Daniel would invite this friend over to play, and he also went to the friend's house. With Jane's help, Daniel maintained the friendship for several years. Jane continued to encourage the phone calls and found opportunities for the boys to get together.

At home, Daniel began to talk nonstop. His parents were thrilled with his emerging sense of humor. Daniel participated in a program called "Facing Your Fears" (Reaven, 2011). This program taught him how to talk about his fears; at that time, any change in the weather would cause him to be consumed with anxiety. Daniel learned how to describe his fears and to consider worst-case scenarios. He displayed his level of anxiety on a continuum from most to least by physically moving a bead along a string. Daniel would then identify strategies that he could use at each point along the continuum. After learning these strategies, Daniel was much more willing to talk about all of his feelings, including anger, frustration, and sorrow. Prior to this training, Daniel avoided talking about all negative feelings. Daniel also became skilled in the art of compromise. He offered other people choices and began to self-advocate. Daniel became increasingly interested in science, history, and geography and searched the Internet to find videos on these topics.

Daniel continued to go to monthly 4-H meetings and participated in the 4-H county fair. He enjoyed the demonstrations and eagerly asked questions of every presenter. At times, Daniel needed help formulating his idea into a question, but he always had interesting thoughts to add to the discussion. Each year, he provided a demonstration, usually on the topic of baking. His parents would help him create the

visual supports he needed for the demonstration and help him practice his presentation, using pictures to represent key points in the process. One of the most demanding tasks for Daniel was being interviewed by the judge at the fair. Children in 4-H have to complete a book with expense sheets, photos, and descriptions of the projects they have completed during the year and a story about their experience. 4-H-ers take their book and an example of the project (e.g., a cake) to a complete stranger who asks questions. Daniel's parents were able to put a note in the book that Daniel had autism; however, by the end of middle school, they felt that the note was not needed. They felt that Daniel was able to answer questions and describe his project independently and without special consideration of his communication skills.

High school. By high school, Daniel's parents and teachers realized that there were no limits in what they might expect from him. He continued to have a great sense of humor and an amazing memory. Daniel connected new information to his existing knowledge and had become an independent learner. If given some help with spelling, Daniel could go to the computer and use search engines to find just about anything he wanted to know.

Daniel had grown into what several of his teachers referred to as a gentle giant. He was now 6'3" and 300 pounds and an extremely kind and caring person. He gently tapped your shoulder to get your attention. He was very concerned about others' feelings and was quick to apologize if he thought he had offended you in any way. At the beginning of high school, Daniel's 4-H club disbanded. I had once been the leader of the club, so Daniel asked Jane if he could call me to make sure that I knew about it and that I was okay. This was an important phone call for many reasons. Daniel found it difficult

to talk on the phone and avoided it when possible. However, Daniel was so concerned about my feelings, wanting to be sure that I was okay, that he put aside his own anxiety with phone calls. Jane said that he initiated this all on his own. Even when she had reassured him that I would be fine, Daniel needed to hear it for himself. Although this is an example of Daniel's caring nature, it also demonstrates Jane's insight on the importance of giving Daniel the opportunity to make this call.

Current skills. Although Daniel has made significant progress, he continues to struggle in some areas. Daniel battles anxiety, and when he is under even small amounts of stress, he might use a high or falsetto voice. With more stress, Daniel sometimes will pace back and forth, wringing his hands. More often, however, Daniel will tell adults what he wants or needs, but his listener has to be patient. Daniel may restart or restate his idea several times. Daniel's intonation may indicate a question when he is making a statement. He often changes topics without warning or assumes the listener is on the same topic when they have no idea what he is talking about.

Although most everyone who knows Daniel would consider him a friend, he still prefers to stay at home and not to socialize. His most important relationships are with his family, but Jane feels that he does want to build friendships. He is able to engage many of his sister's friends who have learned to accept his differences and to allow him the time he needs to express himself.

Jane stated that Daniel's greatest area of need is social language and communication. Daniel can easily ask a store clerk a question or place an order to the server in a restaurant, but has a difficult time initiating and maintaining a conversation with someone he knows or wants to know. An example is when Daniel became

completely overwhelmed and anxiety-ridden when asked to participate in video game night at the high school. Daniel's parents reported that the thought of going back to school in the evening to play with unfamiliar peers caused Daniel to become extremely upset. Although Daniel's first response to game night was a determined "no way," his parents knew that he would benefit from this social opportunity. Daniel's parents continued to negotiate with Daniel to accept the invitation. Jane knows that she must keep her and others' expectations high.

Daniel's skills noted during observations and documented in artifacts. Daniel was observed engaging in extended communicative interactions with his parents prior to and during the study. With support from his parents (prompts, waiting for and expecting a response, providing choices, modeling, etc.), Daniel was able to take multiple turns in conversations. For example, Jane and Joe prompted Daniel to describe his day by telling him about their day. When they did not understand something he told them, they asked him to clarify his message. Daniel attempted to respond to requests for clarification, but needed his parents to explain what they did and did not understand. With their help, Daniel persisted in communicating his thoughts and ideas by adding the additional information they needed. Daniel's parents had been trained by multiple professionals over the years to expect him to communicate verbally and to help him to recognize the needs of his listener.

Daniel's current skills were described in documents collected for this investigation and from information gathered in the interviews with participating members of the IEP team. Daniel's most current IEP, dated December 2014, and his most recent

evaluation report, dated November 2014, were the primary artifacts collected and analyzed. The IEP described Daniel's communication abilities as follows:

Daniel has knowledge of pragmatic skills; however, application within natural environments and at the spontaneous interaction level are often rigid and structured, and adult support is needed to provide solutions and help with problem-solving and general interaction with peers and adults.

It was documented in the IEP that Daniel was eager to share his thoughts and ideas, both within the ILC and in his general education civics class, with peers and adults. In his IEP, Daniel was described as an insightful and logical thinker who was typically on topic, but sometimes took time getting back to the topic being discussed.

Daniel's IEP goals included speech, language, and communication targets. He was learning to use a strong, clear voice in place of quietly mumbling or using a high-pitched voice. He was also learning to raise his intonation at the end of a sentence only when asking a question and increasing his understanding of more abstract language (e.g., multiple meanings). Conversationally, Daniel was working on initiating and extending interactions. His IEP goals were as follows:

- A. Daniel will demonstrate appropriate social interaction skills within the school, within the classroom, and/or during social situations as demonstrated by mastery of the following objectives:
 1. Daniel will raise his hand or interject an appropriate on-topic comment into a classroom or social discussion.
 2. Daniel will ask questions that are on topic and relevant during class.
 3. Daniel will demonstrate reciprocity of conversation by asking a minimum of one relevant question or by adding an appropriate interjection with an adult and/or peer.
 4. Daniel will ask for help or support within the classroom setting when needed.
 5. Daniel will use an age-appropriate volume and pitch when interacting with others.
- B. Daniel will increase expressive language functioning as demonstrated by mastery of the following objectives:
 1. Daniel will provide a minimum of two meanings for ambiguous sentences.

2. Daniel will clearly describe events or situations using adequate detail, such as who, what, when, and where, and correct sequencing of events.
3. Daniel will regulate his emotions in an appropriate manner when faced with a situation or trigger (e.g., a routine or schedule change or a classroom conflict) by identifying his emotional state to a trusted staff member so they can problem-solve to find an appropriate solution together.

During the interviews, the IEP team identified Daniel's communication strengths and areas of need. Both general education teachers described him as "very capable" and reported that he raised his hand in class, answered questions, and added to the conversation. As a general education teacher said:

He was insistent upon getting his message across. He would raise his hand and keep it up until I called on him. . . . You could see him working hard to formulate what he wanted to say. For the most part, it came out. It was a little bit stilted at first, but he always had very insightful points. I shouldn't say "always," but he had a lot of good, insightful points. He added to the conversation. He didn't distract from it.

The special education team added that the student was persistent in explaining his ideas. This team, however, noted many areas of need. For example, several members of the team mentioned deficits in social skills. One team member said,

I think if we can get him to recognize himself, then we can get him to recognize other people on that social level. I've noticed even in interactions with his sister that he doesn't know how to have that social interaction.

Another team member stated, "There is room to expand on his communication, especially with his peers."

Other members of the team noticed difficulties in more subtle or abstract communication. In a life skills class, one team member stated, "He will monopolize the discussion. He doesn't pick up on the cues that he has answered every single question and now, it should be somebody else's turn. So those kind of subtle things for him, too, are challenges."

Three of the team members talked about times when he has grabbed a person's hand or shoulder, noting that he was not waiting for them to respond to his question or request. One team member said, "He'll want to show me something, so he just grabs me and is like, 'I want you to come look at this!'" Another team member stated, "He'll say, 'Do you want a cookie?' as he's putting it into your hand."

I observed many times during the school day when Daniel did not communicate effectively. One example was when Daniel failed to acknowledge the needs of a peer during a math activity. The peer was taking a long time deciding how to count change. Daniel took the coins from the peer's hand, counted out the correct amount, and gave it back to her without asking if she wanted help.

Another time, during an individual speech and language session at school, Daniel had the opportunity to work with a therapy dog. Daniel was instructed to give the dog a sequence of commands. Although highly motivated by this activity, Daniel consistently failed to look at the dog to see if it had heard or responded to each command. For example, he told the dog to heel, come, and then to go under the table. He quickly gave all three commands without looking at the dog. He was clearly focusing on speaking the commands and using the correct gestures and not on the impact his efforts made on the dog.

As yet another example, when he was in the general education classroom, Daniel was unable to explain to the teacher that he had finished the previous unit. He walked away from the teacher without explaining why he was working on the next unit; he then got a textbook so he could show the teacher where he was in the lesson.

Daniel demonstrated communication strengths as well as needs. In a social studies lesson, he was observed consistently answering questions asked of him. He spontaneously added comments and initiated his own questions. When frustrated with an activity, Daniel did not ask for help, but he was able to say, “I don’t know what we’re doing.” Another time, when he did not feel well, he was able to ask to go to the nurse’s office and to continue a conversation with the educational assistant about what he should do to feel better. He described his pain, offered suggestions for dealing with his discomfort, and concluded that he should lie down.

The Team

Thirteen members of the IEP team agreed to participate in the study. The special education teachers, educational assistants, SLP, and school psychologist were interviewed during school break periods. The general education teachers were interviewed after school, and the occupational therapist was interviewed in her office at another building. The Statewide Assistive, Alternative and Augmentative Communication (SWAAAC) team member was interviewed by phone. During the interviews, participants were asked to share their exposure and experience with supporting communication for students with ASD.

The ILC team consisted of two special education teachers and three educational assistants. One of the special education teachers had previously worked in deaf education, and this was his second year at this high school in the ILC. The other special education teacher came in only to help teach math. One of the educational assistants had been working in the school district for 14 years, much of that time at this high school. One of the educational assistants was in her second year of teaching. She stated that she

took the job with no previous experience or training. The other educational assistant was in her first year of teaching and was studying psychology in college. The ILC staff communicated effectively with each other throughout the day. They kept each other informed about the location and needs of the students.

The general education teachers spoke highly of the ILC staff and welcomed them into their classrooms. The general education classes were also typical of most high schools. There were 30 to 35 students in a class. They engaged in lively discussions before, after, and sometimes during class. Two of the general education teachers related to Daniel in the same way they did to their other students. They recognized him when he raised his hand and gave him the time he needed to express his thoughts or ideas. Both of these teachers commented on Daniel's intellect. They were surprised and pleased with his knowledge and his abilities. A third general education teacher addressed only the educational assistant and did not directly communicate with Daniel. Daniel's participation in general education was much more variable than in the ILC. For example, in his civics class, he frequently raised his hand and added to the class discussion. The civics teacher noted that Daniel was a great addition to the class and added to class discussion. In the computer science class, he worked rather independently with guidance from his teacher. Daniel did not have the same assignments as the rest of the class; however, most of the students worked independently at their stations. The teacher walked around the room, checking in with each student, offering support or providing feedback.

Approximately one-half of the team had minimal or no training in communication or ASD (see Table 2). One of the educational assistants participated in a one-day

introductory course in ASD that focused on behavior modification. The others in this group had no specific training in ASD or communication disorders. The group with minimal training had received general information on ASD as part of their professional preparation or through continuing education. Daniel's parents were the only ones with extensive training in ASD and communication. They reported attending conferences, participating in formal training, and receiving coaching and modeling from ASD specialists.

Table 2

Team Demographics

Role with Daniel	Minimal or No Training	Some Training	Extensive Training
Educational assistant		X	
Educational assistant	X		
Educational assistant	X		
ILC teacher	X		
SPED resource math teacher	X		
General ed civics teacher	X		
General ed computer science teacher	X		
School psychologist		X	
Speech language pathologist		X	
Assistive technology (SWAAAC)		X	
Occupational therapist		X	
Mother			X
Father			X

Data Analysis

All data from artifacts, interviews, and observations were brought together in NVivo qualitative data analysis software for open coding, where any segment of information that might have been useful in answering the research question was given a code. The open codes from all data were then grouped to create an axial code list of fifteen categories, including training in ASD, awareness of the communication partner

role, barriers in being an effective communication partner, student behavior and anxiety, final perceptions about the role, general perceptions about the role, how communication is supported, I don't know what I don't know, communication is complicated, missed opportunities, team support, trial-and-error winging it, understanding or awareness of the student's needs, training needs, and demographic information.

The axial codes were then further condensed into the following themes:

collaboration, barriers to collaboration, existing skills, missed opportunities, student outcomes, and training. Each of these themes will be described with observation data and with verbatim quotes from the participants. Finally, the themes will be reviewed at they were used to answer the stated research questions.

Collaboration

The IEP team demonstrated and discussed the importance of collaboration. They expressed an appreciation for each other's skills and the team's dedication to supporting Daniel. Every participant demonstrated a positive relationship with the student. Ten of the team members described positive aspects of being part of a team.

Joe said,

The strengths are our commitment to kids. The team's amazing; they're dedicated to [Daniel]; they're dedicated to helping him be successful. They've got relationships. All the pieces to do the hard work they have in place. Great people and good intent.

The special education teacher commented, "Perfect people. Everyone is willing to jump over the hoops to help you out and get things done." Daniel's mom said, "I think they're a wonderful team, and I do think they support each other."

The team was willing to collaborate and talked about the importance of learning from each other. Five team members discussed how they learned from each other. One

educational assistant said, “I only mimic what . . . [the SLP] does when she comes in and works with him.” She further explained, “Oh, she wants them to actually enunciate the word, and if you don’t understand them, then ask them to say it again.”

Another educational assistant stated:

I am trying to help our team members who have not worked with autistic children and have no training. One para [educational assistant] is brand new, and our other para hasn’t dealt with autism at all, and they are just taking what I know. That’s hard. I think, across the board, we all need a lot more training.

Daniel’s mom described how much she appreciated opportunities to talk to the team members, even if they had to do it “on the fly,” and described the quick conversations with the team before and after school. She further expressed support for the educational assistants by saying:

The paras have such a huge job, and every strategy that they’ve been given that I’ve seen, they take and they run with it, and they’re proud of the work that they do and they’re totally vested.

Barriers to Collaboration

When asked about barriers for supporting communication as a team, seven of the participants stated that there was simply not enough time for training or for planning.

Daniel’s mother pointed out that educational assistants need to be trained. She said:

I would love for the paras, in particular, to be able to know and recognize situations that could help [Daniel] further his skills. I don’t think that between the training and the time and the demands on them, on everything they have to do, I don’t think that that may be something that is focused on.

The parents stated that, in the past, they had provided training opportunities for educational assistants with ASD professionals outside of the school system. Daniel’s mother described the importance of communication among the team devoted to Daniel’s individual needs:

[Daniel] makes the most progress when people are on the same page, and they are pulling him further along in an effective and nice, comfortable way. I'm not saying to make him miserable, you don't have to. If people are on the same page, they can take every opportunity and not let things go by.

The participants stated that they didn't have common planning time. They were not able to meet to discuss the needs of individual students. "We don't have downtime or planning time from the minute the kids get here to the minute they're out the door."

The school psychologist stated that finding time was the greatest barrier and continued to explain what that time would be used for:

Finding the time to make sure it is properly implemented, what's being trained, to make sure it's being done correctly. Progress monitor that it is being done right . . . making sure it's all being done with fidelity from person to person . . . the monitoring I see as the big barrier.

A general education teacher also acknowledged barriers, stating:

Time, money. I don't know how often they even have time to meet together. I know that when we do IEPs, it's seven o'clock in the morning before school starts, and then they move people in and out. Even then, it's usually not the paras, and they're with him as much as anybody else.

The SLP explained that planning time around the individual needs of students was a barrier:

We don't really tend to meet on specific students. We meet as a team on Fridays during lunch, but it's kind of more business-related. Department-related. It doesn't include the paras because the paras are with the students. The paras don't have hardly any time at all to leave; they can barely to go the bathroom.

Although the team was willing to collaborate and valued opportunities to discuss the needs of students, they clearly expressed that there was not enough time for planning, training, and monitoring the implementation of training.

Existing Skills

The IEP team members were observed supporting communication and were able to speak to certain communication skills they felt they possessed. During all observations, the team consistently responded to any communication attempt by Daniel. Even when he initiated nonverbally (by tapping a shoulder) or simply joined the group, the team recognized him and encouraged him to take a turn.

Seven of the participants described how they noticed Daniel's anxiety or stress interfering with communication and discussed the strategies they used to help him manage his anxiety. One educational assistant described how she gave Daniel the time he needed to express himself:

If you stay calm, you can pretty much keep him calm. If you are frazzled or you don't give him your time—I think that's just a big piece of it, is a lot of times we get so busy in our job we don't just stop and give that student and that child the five minutes that they need just to talk with you and give them the eye contact so they know you're really, truly listening to them, and just staying calm, and just happy and upbeat. I think sometimes that helps.

She further described how she helped Daniel by clarifying her expectations:

We just tell him that's what everybody else is doing, and that's what we need to do. I've noticed that if you stay . . . if you don't waver on your rules and your expectations—"This is what I expect," "This is what I expect from everybody," "This is what everybody is doing"—then that seems to work pretty well. You're not like, "You need to do this," and then they don't do that, well, then they've got you bluffed. They know that the next time that they just have to throw a little bit more of a fit. You stay pretty firm.

Another educational assistant shared how she gave Daniel the opportunity to talk about his feelings:

I know I could be more effective, but there's a lot of the times that [Daniel] has a hard time communicating to me about how he feels about something. We'll sit down, and we'll talk it through, trying to figure out what's happening. The anxiety gets in the way of his communication a lot, so we sit down, and I say,

“You know, [Daniel], let’s talk. Let’s try to bring it back down to a level,” and I think we do a pretty good job of bringing that down, a lot more than I thought.

The same educational assistant also noted that Daniel is more successful if only one person talked to him at a time:

With [Daniel], we’ve learned that if you have more than one person talking to him at a time, that that makes it worse, whether you’re trying to calm him down or not. Over time, we’ve learned that whoever says it first goes for it.

Although these team members recognized the negative impact anxiety had on communication for Daniel, they wanted more information on how to move past it as a communication barrier. The need for increased understanding of the relationship between communication and anxiety will be discussed further in the final section of the findings.

During the interviews, the SWAAAC team member, the SLP, and the parents of the student described the importance of using specific strategies, such as prompting, fading prompts, waiting for response, providing choices, minimizing language complexity, and expecting reciprocity. They described how they used these strategies to help Daniel explain his intent and to maintain interactions with him. His mother said:

From the very beginning, the speech people taught us how to wait and to prompt. They gave us the tools that we needed. . . . We had to relearn our approach. They gave us the skills, and that has just continued throughout the 15 years. “He’s here, what do we need to learn to advance him further in the process?”

At the high school, one special education teacher was observed facilitating sustained interactions with the student, taking multiple turns on a topic, and building on a conversation. When asked about his ability to achieve reciprocity with the student, he responded:

I’ve always thought that, yeah, you need to teach the kids, but you need to make them think ahead. It’s very difficult to do this, but I always try to think [about] what’s coming up next. In my questioning or in my answers, I always try to

answer and redirect. Not necessarily redirect, but further that conversation or further it to the next step. Sometimes it comes right out, it happens, and other times, I really have to think about it. I know that with [Daniel], it's necessary. It's a conscious thing.

When asked why he had such insight on turn-taking, the special education teacher said that he remembered his own recovery from a stroke:

The panic, the fear, just the lack of knowledge. I can understand why they think and act the way they do because I was there. I remember that. That's a perspective that very, very few people have.

Joe also noted the complexity of turn-taking. "The hard part about being a communication partner is remembering to allow the full development of the thought, which may take several turns back and forth."

A general education teacher expressed the importance of expecting competency and saying, "I know you can do this! You are capable! You're not going to give this song and dance that you can't; you're wasting your energy." Another general education teacher talked about giving Daniel the time he needed to express himself meaningfully:

You know what, I rode it out a lot of times. I let him try to make his point. Sometimes, it was Illuminati-based, or conspiracy theory, something out there that I must have said something that triggered him to think about that. A lot of times, I'd say probably 40% of the time, it was off point. The other 60% made up for the 40% because he had some lucid insightful points that the other kids didn't get or didn't see.

Missed Opportunities

As previously described, I observed the team consistently responding to the student; however, most interactions consisted of one exchange. I observed multiple missed opportunities for extended interactions. For example, if Daniel initiated, the adult would respond, and the interaction would end. If the adult initiated, typically with a question, the interaction would end after Daniel responded to the question. Sometimes

the adult would take another turn, but rarely in a way that prompted an additional turn from Daniel.

Missed opportunities were observed in the lunchroom as Daniel sat at a table by himself, ate his lunch within 15 minutes, and headed back to class without talking to another person. In order to get to the ILC, he had to have a security guard unlock a door. Daniel needed only to approach the guard, and the guard unlocked the door. No words were exchanged.

In observed interactions at the school, the SLP did target IEP goals; however, she also had minimal expectations and missed many opportunities for extended turn-taking. The SLP frequently verbally prompted Daniel to take a turn, rather than waiting expectantly for him to formulate his own question or response. For example, she told Daniel to ask the therapy dog owner a modeled question and then prompted him again to respond to the question, giving him possible answers, rather than waiting to see how he might respond or initiate on his own.

Another time, one of the general education teachers did not engage Daniel at all. Even when he and his educational assistant approached this teacher with a question about the assignment, the teacher directed her response to the educational assistant. The educational assistant did not redirect the conversation to include Daniel. This general education teacher in this example declined to be interviewed; therefore, her perspective on why this occurred was not examined.

Another general education teacher continually checked in with Daniel (e.g., “How are you doing?”) and expected responses to questions, but did not expect him to clarify or explain intentions. For example, the teacher suggested that Daniel independently work

on a unit even though his partner that he typically worked with was absent. Daniel chose to work on another activity without acknowledging the teacher's suggestion or explaining his decision not to work on the lesson without his partner.

A final example of a missed opportunity was observed in the ILC classroom. The posted birthday calendar provided opportunities for conversation that were missed by more than one team member on two different occasions. Daniel's birthday was on a holiday earlier in the week when there was no school. Twice, staff members noticed that the student's birthday had not been celebrated, but did not use this opportunity for extended conversation. For example, one team member told Daniel that they would need to celebrate and asked how he would like to do that. She accepted his response, "I don't know," and the conversation ended.

Student Outcomes

Daniel was capable of engaging in interactions where he could practice and learn social skills, but he depended on his communication partner. Daniel was persistent and motivated in his communication attempts; however, he rarely engaged in conversations at school. His IEP stated that he had knowledge of pragmatic skills, but needed adult support in problem solving and in general interactions. Specific goals included asking questions, making comments, and demonstrating reciprocity in interactions. Most frequently, Daniel took only one turn in interactions, and he rarely verbally engaged with peers. Most members of the IEP team missed opportunities to engage in conversation.

He was observed taking multiple turns with some members of the team. When team members used strategies such as prompting, modeling, providing choices, waiting, or asking questions, Daniel was more likely to clarify his intent or stay engaged long

enough to understand the needs of his listener. One of the special education teachers recognized the importance of sustained engagement and talked about anticipating opportunities for Daniel to take another turn. He said, “It's very difficult to do this, but I always try to think, ‘What’s coming up next?’ In my questioning or in my answers, I always try to answer and redirect . . . not necessarily redirect, but further that conversation, or further it to the next step.”

A conversation with this teacher was one of the few extended interactions observed at school. At home, Daniel not only engaged in, but frequently initiated, conversations. Daniel’s parents stated that they expected and supported reciprocity. Joe explained,

So, we learned to WAIT, to expect Daniel to take a turn, and to prompt his turns. And, the strategies we learned from all the different therapists changed as Daniel changed, and we needed to learn more ways to prompt and to constantly increase our expectations.

Training Needs

The participants unanimously described a need for information, training, or both. The participants’ needs for training varied from an emphatic “I don’t know what I don’t know” to providing specific strategies or ideas for training. One of the educational assistants described not being able to suggest what training might involve because she didn’t know enough about the role of being a communication partner: “I don’t think I’ve been in the profession long enough to understand some of those ways to get him to pull out of that situation, but those things would be really helpful, especially with someone like him, to keep him engaged in something.”

All three educational assistants and both special education teachers used terms such as “going off the cuff,” learning strategies by “trial and error,” or simply “winging

it.” One educational assistant stated: “We’re all going off the cuff here, kind of, and doing what we can. Just more of how do you. . . . He’s different. He’s had such intense training. He’s really different than any of the kids I’ve ever dealt with.”

Participants with more experience and training in ASD and awareness of communication strategies discussed the difficulty in understanding how to support communication. The SLP stated, “There is a lot out there. It’s tough, and here’s the other thing, and even for me, I’m grasping at straws on how to teach and what to teach.”

Daniel’s parents, having the most training and experience with ASD, described specific content or ideas needed in training. Joe suggested the following: “Knowing your role as a communication partner, what’s the structure of the situation, and then how do you do it. That it requires multiple turns.” Daniel’s mother noted that communication partners benefit from both information and strategies and said, “Not every teacher has always taken [information] and run with it, but they’ve always at least vocally said, ‘We would love to have information.’”

Joe also noted the importance of providing teams with strategies and information across contexts and over time by saying:

Giving them skills to help Daniel be a successful communicator is different than helping them be successful communication partners with another kid because they have different needs. What are some of the things that they need to know about autism? What are the strategies, what does it look like at a beginning level, what does it look at an intermediate level as Daniel becomes more sophisticated, what does it look like, how do we support that? How do we train them on that? They need to have that ongoing.

Both parents described the importance of ongoing support in the communication partner role. Joe stated:

They need information about the disability, they need strategies, but they also need to have those ongoing conversations with each other, with parents, knowing

what's going on, because if they don't have time to plan together, talk together . . . what does it look like when you write an IEP? What does it mean in an academic class, what does it mean in an elective class, what does that look like as a life skill, and how do we support that?

His mother added, "I think it would—it would help everybody. It would help [Joe] and I to always have better or more—even if it just brings it to the front of your brain."

Eleven participants from all training level groups indicated a need to understand or learn about a student's individual differences as well as his abilities. An educational assistant stated, "I think it would be nice if somebody would sit down and say, 'This is what . . . this is how he functions, this is his level, and this is his ability.'"

Another educational assistant described the need for further understanding of the student's abilities, stating: "Maybe have a meeting with the parents, and have the parents say, 'This is what he needs, and this is what he does, his reaction is this, and this is what you do.'"

Several participants said that they would benefit from a greater understanding of how Daniel's ability to communicate is affected by anxiety. Six participants felt that it was important to understand the triggers of Daniel's anxiety and to know how far to push him. One team member described the relationship between anxiety and communication as follows:

Maybe if we knew why [there were communication breakdowns], we could help figure out how to approach it better. So, he gets worked up because of the change, and if we know that, we can approach it differently. So, understanding the causes of some of the stress would definitely help us figure out how to communicate with him better.

The school psychologist noted her concern in balancing his anxiety. She said, "I want to know how far we can push him without overloading him, yet push him to grow."

An educational assistant also expressed the need to understand Daniel's limits by saying, "I would like to know how, and what boundaries to push him to, make him do some more

work, and get some stuff out of him; so he doesn't have a lot of downtime." A special education teacher felt that better communication might minimize his anxiety, saying, "I'd like to communicate better with him to not trigger that anxiety for him."

Participants discussed the content for training as well as how information or training might be delivered. Three of participants stated that something as simple as a handout with bulleted points might increase their awareness of their role. A general education teacher said, "I think if you had a couple bulleted points. . . . I've been head-to-head with a few students that have Asperger's, they kind of all have a similar characteristic, but at the same time, they're all different kids, you know?"

The SWAAC team member suggested that team members be informed about a student's abilities with a list of strategies:

You know, something that might be a quick, easy thing would be just a list of strategies that could go out to all team members that say, you know, "Presently, we know there's a student with, or on the autism spectrum in your program, and these are some strategies that we found that might be helpful working with them."

Others described the need for video examples, coaching, and modeling. As one special education teacher suggested, "Content has to start so that they understand the whole thing, and then some instruction or modeling. Then, maybe, after a period of time, a little review or someone coming back to reevaluate . . . follow up."

Another special education teacher felt that coaching and modeling would be more effective than attending a conference. She said, "Coaching and modeling would be the easiest. Someone comes into the school, shows you. . . . You know? It's happening right there, you're paying attention, not in a group of 200."

An educational assistant also felt that modeling would be effective and said: "I think we need a development day where we just have, literally, like a little synopsis of it.

I think it needs to be a lot of modeling, like, even in the online thing to watch. How you treat kids. How you work with kids.”

The participants’ need for training and information was perhaps the most significant finding in this study. Even with the diverse roles and experience of the participants, each one wanted more information, even if they were uncertain what that might look like.

Another interesting finding was the possible training that occurred as a result of the interview process. Each participant was asked if their perceptions as a communication partner had changed from the beginning to the end of the interview. Four participants with some or extensive training stated that their perception did not necessarily change, but that the importance of communication and all that goes along with being a communication partner had been brought back to the forefront.

Both of the general education teachers discussed teaching the whole child and compared their role as a communication partner with the identified student to their role with all students. However, one of these teachers concluded, “[The role of the communication partner is] still nebulous to us. It’s nebulous to me; I’m not sure exactly what all that entails, you know?”

All three educational assistants and one special education teacher described an increased awareness of their role and how they might increase opportunities for engagement. One educational assistant asked if she should expect more engagement from Daniel, asking: “In the mornings, he comes in, and we see him at this locker. When we go by, we say, ‘Good morning, Daniel! How are you?’ Sometimes he wants to ignore us. . . . Is it important for him to acknowledge us and respond?”

Another educational assistant said that the conversation we had helped her to realize that “[Students] know that they need to use words, but there are certain things we could do to bump up their communication skills.” Another educational assistant described that her awareness of her role as a communication partner had greatly expanded. She stated:

Now that we talk about it, I see how it’s more than just what I thought. I was thinking of the times where he’s stressed, the times that we keep him . . . when we have to tell him about things that are changing, but I never thought of all the other things that we do or even the way he communicates back with us. Now that we talk about it, I see that it’s a constant throughout-the-day thing instead of just the moments where he is stressed or he is anxious and all that stuff, so I realize that it’s more than just that.

Figure 1 demonstrates the relationship of the resulting themes.

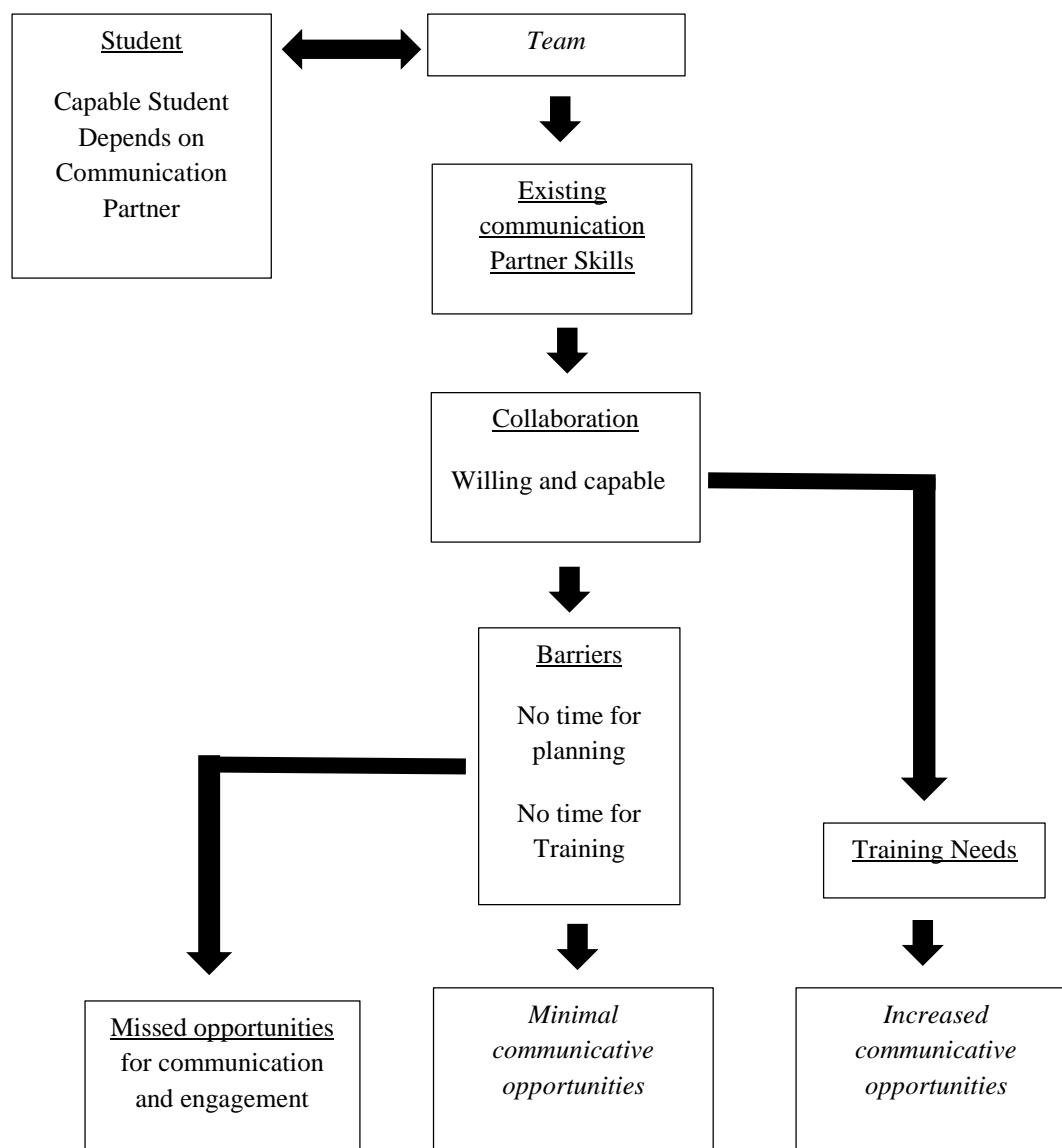


Figure 1. The relationship of the resulting themes.

Research Questions

The IEP team exhibited communication partner skills such as discussed in the theme *existing skills*. However, there were many *missed opportunities* to support Daniel in communicative interactions. The team unanimously expressed a need for training, and all but one of the participants' perceptions of their role changed from the beginning to the end of the interview. Changes in perceptions occurred simply by making individuals aware of their role as a communication partner.

Research Question 1

Q1 How does the IEP team of a student with ASD perceive their role as a communication partner?

The team's perceptions of their role varied depending on level of experience and training in ASD and communication. The theme *training needs* is used to further discuss this variability in response to Q2 and Q3 below. Q4 is answered with information from the themes *collaboration* and *barriers to collaboration*.

Research Question 2

Q2 How do perceptions of the role of a communication partner differ based on the adults' level of training or experience with students with autism spectrum disorder?

Communication partner perceptions did vary according to the level of training or experience. Daniel's parents, having the most training and experience, wanted more for teams, elaborating, "They need information about the disability, they need strategies, but they also need to have those ongoing conversations with each other, with parents, knowing what's going on."

They also noted that necessary skills and information changed as Daniel's skills and communication environments changed. Joe asked: "What are the strategies, what

does it look like at a beginning level, what does it look at an intermediate level as Daniel becomes more sophisticated, what does it look like, how do we support that? How do we train them on that?”

Those with training and experience described specific strategies and information needed to support communication. In particular, they described specific turn-taking strategies, such as waiting for the student to respond or talking less and expecting the student to take a turn.

Individuals with no training knew to respond to initiations and recognized the effects of anxiety on communication, but they were not able to discuss specific training needs. The clear message received from this group was *I don't know what I don't know*. This group knew that they needed more information or training, but were not sure what that would look like, which begins to answer another research question:

Research Question 3

Q3 What, if anything, do team members perceive they need in terms of information and/or training in order to be adequately prepared as effective communication partners?

Every member of the team stated that they would benefit from more information. Everyone on the IEP team expressed a need for more information and/or training on ASD and communication, including specific strategies and/or training on the individual needs of the student. The type, amount, and delivery of desired information varied among the participants. Some suggested that something as simple as a list of bulleted points would be useful. One member said, “You know, something that might be a quick, easy thing would be just a list of strategies that could go out to all team members.” A general

education teacher said, “I think if you had a couple bulleted points [that would be useful].”

Others said that they would need modeling and coaching. Some members talked about needing more formal instruction, including feedback on the implementation of new skills. One member said, “Coaching and modeling would be the easiest. Someone comes into the school, shows you. . . . You know? It’s happening right there, you’re paying attention, not in a group of 200.”

Daniel’s parents talked about the need for ongoing training that addressed changing environments and skill levels. Joe added, “They need to have that ongoing, embedded time where they can not only get training, but they can talk, they can say, ‘Gee, when I did this, this worked really well,’ so they can see, here’s an entry point, here’s something that works.

Other team members also recognized the importance of learning about the individual needs of the student, not only being familiar with the IEP goals, but also knowing what strategies best support the student. One member stated, “We’re all going off the cuff here, kind of, and doing what we can. Just more of how do you . . . he’s different. He’s had such intense training. He’s really different than any of the kids I’ve ever dealt with.”

For Daniel, information on how to help the student regulate his emotions was also noted as important for many participants. One member explained:

Maybe if we knew why [there were communication breakdowns], we could help figure out how to approach it better. So, he gets worked up because of the change, and if we know that, we can approach it differently. So, understanding the causes of some of the stress would definitely help us figure out how to communicate with him better.

Research Question 4

Q4 What are the barriers and/or supports in the school setting that affect the role of a communication partner?

The team was collaborative, dedicated, and willing, but faced barriers in their role as communication partners. All participants were observed consistently responding to Daniel's initiations in a genuine or meaningful manner. They were attuned to any attempt he made to communicate, verbal and nonverbal. Several members of the team recognized the negative effects of anxiety on communication and were concerned with how hard to push Daniel to communication when he became anxious. One member stated, "I'd like to communicate better with him to not trigger that anxiety for him." Another team member said, "If you stay calm, you can pretty much keep him calm." The team's ability to recognize the relationship between communication and stress or anxiety was a strength.

Participants, including Daniel's parents, spoke of the team's dedication and commitment to the student and to each other. Joe stated, "The team's amazing; they're dedicated to Daniel, they're dedicated to helping him be successful."

Team members shared their appreciation for each other. One member commented, "Perfect people. Everyone is willing to jump over the hoops to help you out and get things done." Members noted how they taught and learned from each other. One member stated, "I am trying to help our team members who have not worked with autistic children and have no training." Every member of the team was willing to collaborate, but, in fact, opportunities for collaboration were described as the greatest barrier for the team.

The participants described time for training and time for planning as their greatest barrier. Educational assistants spent the most amount of time with Daniel, yet one of them pointed out, “We don’t have downtime or planning time from the minute the kids get here to the minute they’re out the door.” Another member further described lack of planning with educational assistants:

We don’t really tend to meet on specific students. We meet as a team on Fridays during lunch, but it’s kind of more business-related. Department-related. It doesn’t include the paras because the paras are with the students. The paras don’t have hardly any time at all to leave; they can barely to go the bathroom.

Parents also described a desire for common planning time when team members could discuss the individual needs of a student and share ideas or strategies to meet those needs. His mother stated, “If people are on the same page, they can take every opportunity and not let things go by.”

In addition to the need for planning time, several participants stated that time is barrier for training:

Finding the time to do the training, obviously. Finding the time to make sure it is properly implemented, what’s being trained, to make sure it’s being done correctly. Progress monitor that it is being done right . . . making sure it’s all being done with fidelity from person to person . . . the monitoring I see as the big barrier.

In response to the research questions, the IEP team members who participated in the study had varying perceptions of their role as communication partners. However, all members of this team reported that they needed more information and/or training. The need for training was confirmed by researcher observations. Although the team had some skills, they missed many opportunities in supporting Daniel in extended turn-taking interactions where he would be able to express his ideas or to understand the thoughts and ideas of others. The team was willing to collaborate, but faced barriers. They stated

that they did not have time for planning or for training, which was the greatest barrier to being effective communication partners.

Conclusions

Several themes resulted from the current study. The theme *student outcomes* reflected the communication partner experience of the student. Daniel was capable of engaging in interactions where he could practice and learn social skills, but he depended on his communication partner. The role of a communication partner may look different, depending on the skills of the student, but in this case, the role was critically important even when the student had strong language skills. Daniel was not able to engage in sustained and meaningful interactions without the support of his communication partner. Another theme, *missed opportunities*, reflected these minimal opportunities for engagement.

Other themes represented the experience of the IEP team, including *collaboration*, *barriers to collaboration*, and *existing skills*. The team was capable, dedicated, and willing to collaborate, but faced barriers in their role as communication partners. The IEP team demonstrated *existing skills* as communication partners. They consistently responded to Daniel's communicative attempts and were sensitive to the impact of anxiety. The team was motivated to help Daniel succeed and discussed the importance of collaboration in helping him to achieve such success. However, *barriers to collaboration* was also a resulting theme.

The team felt that time was the greatest barrier in their ability to be effective communication partners. They described the need to plan around the individual needs of the student and discussed the strategies and skills to support him. They also wanted more

information about ASD and communication, but discussed the limited time for training, including the implementation of training and monitoring change in team and student behaviors.

CHAPTER V

DISCUSSION

“The inability to form and maintain meaningful social relationships is perhaps the most detrimental and ubiquitous characteristic of ASD” (Koegel, 2012).

In this study, Daniel was capable of engaging in interactions where he could learn and practice social skills, but he depended on his communication partner to do so.

Daniel’s communication partner needed to recognize social language opportunities and expect him to share his thoughts, opinions, and ideas. Daniel needed prompts and models to clarify information and to take the perspective of his listener. The team consistently responded to Daniel and had developed a trusting relationship in which social skills could be practiced. However, all members of the team missed opportunities to help Daniel express his ideas and opinions and to help him understand their thoughts.

The IEP team was capable, dedicated, and willing to support Daniel, but stated that they faced barriers in obtaining the information they needed for their role as communication partners. The team felt that they needed more information in order to support conversations and social interactions that extended beyond one exchange. They wanted to know more about Daniel’s unique and individual needs as well as strategies and information or skills they could use to meet those needs, but felt there was not enough time for sharing information, collaboration, or training.

The need for training and additional information was unanimously expressed by the team. The type and amount of information needed varied, depending on the team member's existing knowledge. Some team members expressed the need for *any* information stating, "I don't know what I don't know." Others identified the need for specific strategies, such as providing sufficient wait time or expecting Daniel to respond to questions.

The need for communication partner training, in any amount, was one of the most significant findings in this study. Introducing the concept of the role of a communication partner promoted change in most participants' perceptions. The idea of being a communication partner had not been previously discussed or, for Daniel's parents, reviewed to meet his current needs. Although there was clearly a need for communication partner training for supporting this student with ASD, there was very little information on this topic in current literature. Recommendations for future research regarding communication partner training, implications for practice, and providing necessary training are provided in this chapter.

Limitations

There were limitations to this study. As with all qualitative research, generalizability and researcher bias must be considered as limitations. Also, concerns with data collection were reviewed as limitations in the current study.

Generalizability

The focus on a single case increases issues related to generalizability (Merriam, 2009). These findings reflect the experience of only one IEP team working with one student, representing a single case. These results cannot be generalized to other students

with ASD or other IEP teams. However, the detailed data provided here can be transferred or applied to readers' experiences. For example, other IEP teams can begin to consider their ability to support the social communication needs of students and whether they desire additional training for that role. Because there was no information in the current literature regarding the communication partner experience supporting students with ASD, qualitative research provides a knowledge base. The knowledge base discussed here expands our understanding of the communication partner experience and can impact the structure of future research.

Data Collection

Triangulation of data was one strategy used to ensure research credibility. Triangulation relies on the ability to compare data across sources. In this study, data sources included interviews, observations, and artifacts. Although there was sufficient data collected through observations and interviews, there was minimal artifact data. Observation data included visual supports as artifacts; however, these artifacts were not observed being used to support or engage in social communication. The only other artifacts that were analyzed and compared to other data sources were Daniel's most-recent progress report and his Individualized Educational Program (IEP). Interestingly, the IEP stated that a communication book should be used among the team. A communication book would have provided important information, but such a book had not been introduced among the team. The team reported that they communicated verbally when they could and, in the case of emergencies, used text messaging. They did not use email or memos to discuss concerns or intervention plans between school team members or between home and school.

Another missing artifact that was expected, but not obtained, was a summary of data collected by the team regarding IEP goals. The team was not observed taking data. Data on Daniel's goals was requested from the special education teacher, but was not received.

A final concern with data collection was the time period for obtaining observation data. Observations were conducted for three weeks at the beginning of the second semester of the school year. Although saturation had been reached and no new behaviors were being noted, further observations later in the school semester may have revealed additional information.

Researcher Bias

Another limitation of the current study was researcher bias. As the primary researcher, I had known Daniel and his family for over 10 years. My relationship with the family likely impacted my perceptions during data collection. I also had a long history in teaching adults to support communication that has shaped my perceptions of the importance of the role of a communication partner.

Most of my professional life has been devoted to breaking the barriers students with ASD face in building meaningful relationships. In my experience, successful relationships are greatly impacted by a person's ability to communicate. Koegel (2012) suggested that the most effective way to improve communication for individuals with ASD is to provide more opportunities to communicate. Over the years, I have seen that the adults who are supposed to be supporting meaningful communication often need training in order to provide opportunities and to maintain social interactions. The skills needed to support social skills and communication are not necessarily inherent in adults.

For example, they might ask only yes/no questions, take the majority of the conversational turns, or allow insufficient response time, all of which allow fewer opportunities for the individual to engage in reciprocal communication (Kent-Walsh, Binger, & Hasham, 2010).

Implications for Practice

The findings from the current study shed light on some of the strategies, skills, and knowledge needed to be an effective communication partner. A responsive communication partner is a great first step, but is not enough to ensure the reciprocity needed in social communication. Interaction styles that support social engagement and extended interactions or turn-taking should also be considered. It is important to think of the role as it presents as part of a team and the team's ability to collaborate and to understand and meet the individual needs of the student.

Awareness of the Role

In the current study, most of the participants reported that their perception of a communication partner changed by the end of the interview. During each interview, I described a communication partner as anyone in the position to support communication. Although the participants initially stated that they were effective in the role as a communication partner, by the end of the interview, they were considering additional responsibilities of the role. For example, an educational assistant asked at the end of the interview if she should expect Daniel to respond to her morning greetings. By making teams aware of their role as a communication partner, as someone who expects engagement, students may have more opportunities to learn and practice social skills.

Experienced communication partners, such as Daniel's parents, felt that awareness of the role needed to be continually brought back to the forefront. They discussed the importance of reminding each other to be aware of their status as a communication partner. Awareness, however, is only the beginning of understanding the complexities of the role. The next steps would be to consider how communication partners interact with students and if their interaction style supports communication.

Interaction Styles Supporting Turn-Taking

Engaging in communication, especially in conversation, may require communication partners to change their style of interacting as well as their expectations for turn-taking. They may need to learn skills that help them balance opportunities to take turns in interactions (Manolson & Hanen Centre, 1992). That may mean giving up one's own agenda or using fewer directives. It may include using less spoken language and more listening and expecting students with ASD to take turns.

Turn-taking strategies used in early language development can be used in social and conversational interactions. Such strategies may include following the child's lead; using repetition, modeling, and non-verbal cues; and prompting to promote turn-taking. Two participants in the current study noted the importance of waiting. Manolson and Hanen Centre (1992) suggested that waiting is a first step in facilitating interactions. By assessing communication partners' interaction style and increasing the expectation for extended engagement, communication partners will likely be more aware and supportive of opportunities for social interactions.

Individual Needs of the Student

The individual needs of the student must be considered in communication partner training. In the current study, several participants suggested that they would need to better understand Daniel's IEP goals and have information on how his anxiety or stress affects communication and language.

It is likely that communication partner training that included information about the student's strengths and needs, including IEP goals and supports, would allow the team to be better prepared to support communication and engagement. For example, in the current study, IEP team members wanted to know how Daniel's anxiety affected his communication skills and what they could do to help him to express himself during times of stress. Sharing of such information, however, requires collaboration among the team.

Collaboration

Collaboration among teams is important for all IEP goals, but as seen in the current study, it is critical in teaching social and communication skills. Every member of the team has some responsibility to recognize and support opportunities for students to learn and practice new skills in social situations. By sharing strategies and information, teams can ensure that the individual needs of students are met across settings and at school and home.

Parents are key members of IEP teams. Parents need to be included in the educational process (National Research Council on Autism, 2001) and also need to be collecting and sharing information with the rest of the educational team. Parents likely have the greatest insight on the individual needs of the student. We have seen in the

current study how parents can positively impact communication. As such, parents must be a major voice in the overall collaboration.

Recommendations for Future Research

The participants in the current study expressed a need for additional skills and information in order to understand and fulfill their roles as communication partners. Future research should consider who needs to be trained and the content and delivery of training.

Who Needs to be Trained?

Future research should investigate who would benefit from communication partner training. Along with other researchers (Prizant, 2006; Smidt et al., 2007), the current study suggested that entire teams need to be trained because of the dynamic and transactional nature of communication and social interactions. The Social Communication Emotional Regulation Transactional Support (SCERTS) model (Prizant, 2006), presents a comprehensive educational approach. The transactional support component of the SCERTS model outlines specific skills and responsibilities for anyone in the position to provide support. In order to support functional and meaningful social interactions, future research should consider who would benefit from training, including parents.

Parents might be the most obvious potential communication partners. The literature in early intervention suggests that parents can effectively implement targeted communication interventions (Carter et al., 2011; Matson et al., 2009; Meadan et al., 2009; Suppo & Floyd, 2012). The *More Than Words - Hanen* program (Sussman, 1999) has shown that parents were able to learn strategies to support communication

development in young children with ASD (Carter et al., 2011; Girolametto et al., 2007; McConachie et al., 2005). Future research should continue to consider parents as communication partners supporting all social communication, even when children have strong language skills.

As social opportunities revolve less around parents and become more focused on peers, it will be important for future research to investigate the training needs of peers and siblings as communication partners. Peer-mediated instruction and intervention has been discussed as an effective practice to increase social and communicative opportunities for individuals with ASD (Wong et al., 2015). In this research, much like the parent training research, the focus was on early intervention and interactions involving play, initiations, and asking questions. As students progress through the school system, they are exposed to more peer-related social opportunities and interactions. Future research should determine the needs of peers and siblings in their ability to engage in communication and conversation. Future research should consider all possible communication partners and then begin to investigate the needs of communication partners.

Content and Delivery of Training

What information or content would be necessary in communication partner training? As previously discussed, the current study suggested that the individual needs of the student should be considered; however, knowing a student's communication needs or social goals was not enough. Participants in the current study felt that they needed strategies and information to support those goals. Future research should investigate the amount of information and strategies needed to support communication and social skills.

What would the content of training need to be? As pointed out earlier, the Social Communication, Emotional Regulation, and Transactional Support (SCERTS) model (Prizant, 2006) provides an extensive list of characteristics needed by individuals providing transactional support. For example, the SCERTS model suggested that partners adjust language to meet the child's developmental level. How would communication partner training help an individual recognize developmental levels? Would understanding developmental levels of language and communication be enough to help communication partners change their own behavior or interaction style? Understanding language development may be only one consideration. What other communication and language skills would communication partners need in order to support engagement?

Manolson and Hanen Centre (1992) suggested that interaction styles focusing on balanced turn-taking are best for supporting communication. However, individuals supporting students with ASD may need additional training in order to understand joint attention behaviors and limited communicative initiations and the effects of turn-taking and social engagement. How much information about the disability would be needed in communication partner training? Again, is information enough, or do communication partners need to learn strategies or new skills to support students with ASD?

When changing behaviors to use new skills or strategies, dissemination of information would be the first step. Would dissemination of information be sufficient, or would communication partners require ongoing coaching or modeling? Teachers, for example, have been much more successful implementing new practices when they received coaching (Powell & Diamond, 2013; Suhrheinrich, 2011). Should training be an

ongoing process? Is ongoing support necessary in order for communication partners to maintain the skills and/or to generalize the skills learned, as suggested by Smidt et al., 2007)? The format of communication partner training would also need to be considered in future research.

And finally, future research should consider who will provide communication partner training and what skills will be needed by those individuals. SLPs might be the most obvious candidates in providing communication partner training. However, they may not have an understanding of adult learning styles or simply may not know what to teach others in order to be effective communication partners. With the current shortage of SLPs, we must consider access to communication partner training (Suppo & Floyd, 2012). In the state where this study took place, many school districts were struggling to find enough SLPs to meet the needs of all of their students. Because SLPs already have full caseloads, would the responsibility of training communication partners be an unrealistic expectation?

Conclusions

In this study, Daniel demonstrated strong language skills, but did not independently engage in social communication. In order to practice or learn social communication skills, he relied on his communication partners. Daniel's IEP team was dedicated and willing to gain information and strategies to support communication, but felt that time for planning and training was a barrier. However, the team unanimously stated that they would benefit from communication partner training. This qualitative study shed light on the experience of this IEP team as communication partners and had implications for practice and for research.

In practice, the increased opportunities for students with ASD must be considered. As seen in the current study, people may be more likely to engage in social interactions if they understand and recognize the importance of the role. Students with ASD will likely have more opportunities when their communication partners expect engagement and have strategies to promote turn-taking. Also, opportunities to learn and practice new skills will increase when communication partners understand the individual needs of the student.

This study also provided a foundation for future research. The content of communication partner training needs to be identified. With greater understanding of the knowledge and skills needed by communication partners, the identification of who needs to be trained and how best to deliver such training will result.

Ultimately, the recognition of the role of a communication partner is powerful. The current study suggested that the role can be established by considering the relationships among the student and team and the subsequent training necessary to support all opportunities for engagement. Training can begin with a conversation, but must go beyond the level of awareness and include information and strategies or skills. When teams are able to consider this role and to overcome barriers to training, students will likely gain valuable opportunities to learn and practice social communication skills. With communication partner training, a capable student and a collaborative team can accomplish meaningful communication (Figure 2).

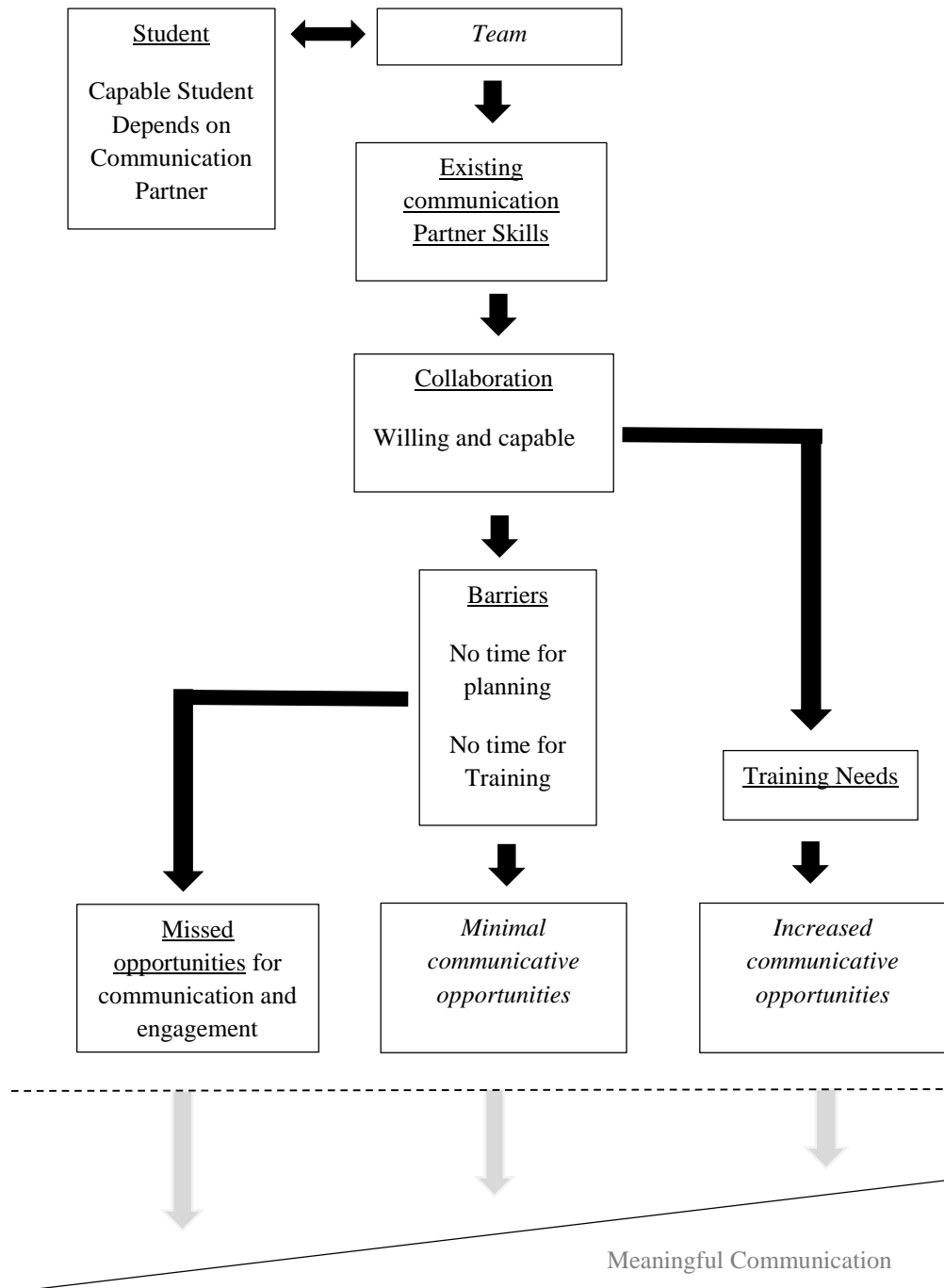


Figure 2. Accomplished meaningful communication.

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APPENDIX A
INFORMED CONSENT



CONSENT FORM FOR
HUMAN PARTICIPANTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO

Project Title: Communication Partner Experience in ASD: A case study
 Researcher: P. Charlie Buckley M.S. CCC-SLP, School of Special Education
 Phone Number: (303) 667-4883 e-mail: buck7316@bears.unco.edu
 Research Advisor: D. Robin Brewer, School of Special Education
 Phone Number: 970-351-1661 e-mail: robin.brewer@unco.edu

I am a doctoral candidate at the University of Northern Colorado, researching communication partner experiences when supporting a student with autism spectrum disorders (ASD). I would like to invite you to participate in this study. I will contact you via email to arrange a 30-60 minute interview. The interview will be conducted via telephone or face-to-face depending on your preference and will consist of questions about your perceptions on being a communication partner with the identified student. Prior to and after the interview, I will observe your interactions with the student during the school day and take notes on communicative interactions. I will also take notes on artifacts that demonstrate communicative support such as the student's individualized education program. The purpose of this study is to better understand the experience of adults supporting ASD as a communication partner. Your insights and opinions will be highly respected, and there are no foreseeable risks. You may personally benefit by gaining information on the topics of ASD and communication. This research will benefit the field of special education by investigating and promoting communication involvement with educational teams.

The interview questions, notes taken during observations and on all artifacts will be kept confidential. Your name and the student's name will not be used when sharing information. The interview will be recorded for the purpose of allowing me to correctly report the information; however, recordings will be deleted once they are transcribed. Transcriptions and all other data will be stored electronically on my personal password protected computer during data collection and analysis. At the conclusion of the study, my research advisor will securely store the

electronic files for a period of three years. Please feel free to contact me via phone or e-mail at any time if you have questions or concerns about the study.

Participation is voluntary. Participating or not participating will not affect your relationship with your school or the Thompson School District. If you begin participation you, may decide to stop and withdraw at any time. Your decision will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had the opportunity to ask any questions, please sign this form and return it. A signed copy will be given to you for your records. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May, IRB Administrator, Office of Sponsored Programs, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

Participant's Signature

Date

Researcher's Signature

Date

APPENDIX B
ASSENT FORM



ASSENT FOR HUMAN PARTICIPANTS IN RESEARCH

UNIVERSITY OF NORTHERN COLORADO

Hi!

My name is Pamela “Charlie” Buckley, and I am a student at the University of Northern Colorado. I am doing research on how adults help children learn to communicate. I would like to observe the adults that work with you in high school. I will just be hanging around your school for a few days watching the adults in your school. I won’t be asking anyone questions. I will just be watching the teachers and other the adults at school to see what kinds of things they do when they talk to you.

If you want to be in my research and let me watch the ways adults communicate with you, sign your name below and write today’s date next to it. Thanks!

Student (You)

Date

Researcher (Me)

Date

APPENDIX C
PARENTAL CONSENT FORM



PARENTAL CONSENT FOR HUMAN PARTICIPANTS IN RESEARCH

UNIVERSITY OF NORTHERN COLORADO

Project Title: Communication Partner Experience in ASD: A case study
Researcher: P. Charlie Buckley M.S. CCC-SLP, School of Special Education
Phone Number: (303) 667-4883 e-mail: buck7316@bears.unco.edu
Research Advisor: D. Robin Brewer, School of Special Education
Phone Number: 970-351-1661 e-mail: robin.brewer@unco.edu

I am a doctoral candidate at the University of Northern Colorado, researching communication partner experiences when supporting a student with autism spectrum disorders (ASD). If you grant permission and if your child indicates to me a willingness to participate, I will observe your child at school. I will be at the school several days observing his interactions with the adults, in the classroom, and in social situations.

I am interested in observing how adults support communicative interactions and will be taking notes on the behaviors exhibited by the adults supporting your child. The content of these notes will kept private and real names will not be used. The notes will be stored electronically on my personal password protected computer during data collection and analysis. At the conclusion of the study, my research advisor will securely store the electronic files for a period of three years.

I foresee no risks to you child beyond those that are normally encountered during the school day. Please feel free to contact me via phone or e-mail at any time if you have questions or concerns about the study.

Sincerely,

Pamela Charlie Buckley

Participation is voluntary. You may decide not to allow your child to participate in this study and if he begins participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled.

Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May, IRB Administrator, Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910

Child's Full Name (please print)

Child's Birth Date (month/day/year)

Parent/Guardian's Signature

Date

Researcher's Signature

Date

APPENDIX D
INTERVIEW PROTOCOL

1. What is your title on the IEP team?
2. What is your level of education regular and or special education?
3. Have you received specific training in the area of Autism Spectrum Disorders (ASD)? Please describe.
4. Have you received specific training in the area of language and communication? Please describe.
5. How would you describe your role and your responsibilities with the student with ASD?

For our interview, a communication partner is any person supporting a student in communicative interactions. A communication partner can provide increased opportunities for communication and support for increased engagement within those interactions, allowing the student to share thoughts and ideas.

6. How would you describe your communicative interactions and your conversations with the student with autism?
7. Do you feel you are an effective communication partner? Why or Why not?
8. What strategies and supports currently exist for you as a communication partner? Why are they important? Individually and for the team.
9. Are there barriers for you as an individual in being an effective communication partner?
10. Are there barriers for the team in being a successful communication partner?
11. What would you need in terms of training or support (and who would you need it from) in order to be more effective in supporting communication and conversation for this student (and for other students with ASD).
12. How does the team support one another as communication partners? What strategies or ideas are shared by the team and how does sharing or support occur?
13. How does the team support one another as communication partners? What strategies or ideas are shared by the team and how does sharing or support occur?
14. What was your perception of a communication partner prior to this experience?
15. How has this discussion affected your perception of the role of being a communication partner?

APPENDIX E
UNC IRB APPROVAL

*Institutional Review Board*

DATE: November 23, 2014

TO: Pamela Charlie Buckley, M.S.
FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [680951-1] Communication Partner Training In Autism Spectrum Disorder: A Case Study

SUBMISSION TYPE: New Project

ACTION: APPROVED

APPROVAL DATE: November 23, 2014

EXPIRATION DATE: November 23, 2015

REVIEW TYPE: Expedited Review

Thank you for your submission of New Project materials for this project. The University of Northern Colorado (UNCO) IRB has APPROVED your submission. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on applicable federal regulations.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of November 23, 2015.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.

Ms. Buckley –

Thank you for a very clear and thorough IRB application. Dr. Spencer Weiler, the first reviewer, provided his approval. Following his approval, I reviewed your materials and also approve your application without any requests for modifications or additions.

Best wishes with your research. Please don't hesitate to contact me with any IRB-related questions or concerns.

Sincerely,

Dr. Megan Stellino, UNC IRB Co-Chair

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.