TOTAL COMMUNICATION METHODS FOR PRESCHOOL CHILDREN WITH AUTISM: A TRANSCENDENTAL PHENOMENOLOGICAL STUDY OF PARENT AND PROFESSIONAL PERCEPTIONS

by

Leigh Ann Beesley

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

The purpose of this transcendental, phenomenological study was to explore experiences of using a total communication system with preschoolers diagnosed with autism as explained by their parents and teachers. The research focused on the experience specifically relating to functional communication and social interactions. Determining resources that parents and teachers need that may have made the employment of the strategies more successful, was of importance to this study in order to determine implications, or future needed research. The participants in this study, determined by purposive sampling, included parents, teachers, paraprofessionals, and speech therapist located in an elementary school setting. The study took place in a rural area of North Georgia. This study was grounded in B. F. Skinner's (1938) operant conditioning, and *Verbal Behavior* (1957), Bandura's (1977) social learning, and Vygotsky's (1935) social development. Data collection included a home questionnaire, individual parent interviews, and teacher focus groups. I analyzed the data using Moustakas' (1994) phenomenological model leading to the essence of the shared experience. First, it was determined that total communication had a positive influence on the functional communication skills of preschoolers with autism. Specifically, participants reported increases in joint attentions, following directions, and communicative attempts. Secondly, participants expressed an increase in social skills, such as play with toys, interactions with peers an adults and participation in learning activities. Finally, participants recommended additional training and materials in order to feel more successful.

Keywords: autism, total communication methods, functional communication, non-verbal, preschoolers, sign language, pictures, vocalizations, parents, teachers, transcendental phenomenology

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Dedication/Acknowledgments

I first must give acknowledgement to God for giving me the strength to continue throughout this journey. This Bible verse has always been my favorite throughout any problem in my life: "But those who hope in the LORD WILL renew their strength. They will soar on wings like eagles; they will run and not grow weary; they will walk and not be faint" (Isaiah 40:31). When I began my doctoral coursework, I knew I had a lot of work ahead of me, that I was facing a long race of endurance. The coursework and comprehensive exams all went by rather quickly and smoothly. However, upon the start of the dissertation proposal portion, I faced intense emotional, marital, and work situations. I was ready to quit working on my dissertation, give up on my marriage, and ask for an assignment with an easier job. Then I found this verse. "You were running a good race. Who cut in on you to keep you from obeying the truth? That kind of persuasion does not come from the One who calls you" (Galatians 5:8), thus an overwhelming voice of encouragement to continue what I had set out to complete.

I could not have made that choice to continue without the support and encouragement of my committee, family, and friends. I would like to thank Dr. Gail Collins, Dr. Joan Cox, and Dr. Ronda Brady for their patience and words of encouragement. In addition, I would like to acknowledge Dr. Martha Plumlee for always providing encouragement when we pass in the hall, or those much needed words or motivational posters.

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List of Abbreviations

Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Third Revision (DSM-IV-TR)

Early Intervention Program (EIP)

Individualized Education Plan (IEP)

Picture Exchange Communication System (PECS)

Preschool Language Scale™-5 Home Communication Questionnaire (PLS™-5 HCQ)

Treatment and Education of Autistic and Related Communication-Handicapped Children (TEACCH)

Social communication, emotional regulation, and the transactional support model (SCERTS)

Significantly Developmentally Delayed (SDD)

CHAPTER ONE: INTRODUCTION

Overview

The Center for Disease Control reported that one in 88 children is born with autism ("Counting Autism," 2012). This prevalence is an increase of "23% from a report dated two years earlier. Additionally this is an increase of 78% when compared with 2002 data" ("Counting Autism," 2012, p. 1). With the stated increase in prevalence of autism, children with autism are entering schools at increasing rates as well. Many of these children begin school with a broad range of functional communication skills. Often, children with autism are non-verbal, meaning they use 10 or fewer functional words (Yoder & Lieberman, 2010). There can also be a range of the functional abilities of non-verbal children (Yoder & Lieberman, 2010). Some children can read books but have no practical words in which to manage daily living skills, express feelings, or to interact with adults or peers. Others may have no verbal skills at all. It is necessary to provide interventions or strategies to improve these communication skills. Chapter One provides background information about autism as well as the background information related to this researcher, followed by the problem, purpose, and significance of the study. I then explain the research questions and plan, as well as any delimitations and definitions related to the study.

Background

Autism is a developmental disorder. In order for a diagnosis of autism to be confirmed, a child must present a minimum of three symptoms as outlined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Third Revision (DSM-IV-TR) (American Psychiatric Association [APA], 2000). The three most common diagnostic features determining

the presence of autism are an increase in repetitive or stereotypical behaviors, lack of development in social interactions, and a lack of development in communication (APA, 2000).

The presence of repetitive, restricted, or stereotypical behaviors and interests is a diagnostic feature of autism that is not apparent in other pervasive developmental disorders (APA, 2000). Children with autism become preoccupied with one interest that becomes abnormal in focus or intensity. They are inflexible with routines and procedures. These children place items in rows or patterns repeatedly. They thrive on sameness and are resistant to change. Children with autism exhibit stereotypical and repetitive motor mannerisms such as self-stimulating techniques of hand flapping, running, rocking, and so forth. They often show a fascination with small objects or parts of an object, as well as obsession with watching or causing movement (example: spinning a top, opening and closing a door), and an intense attachment to an inanimate object (APA, 2000).

According to the DSM-IV-TR, the impairment in social skills of children with autism impacts reciprocal interaction and is displayed in impairments of multiple non-verbal behaviors such as eye contact, facial expression, body positioning, joint attention, and so forth (APA, 2000) These delays lead to a failure in developing peer relationships. There is a lack of "awareness of others" (APA, 2000, p. 70). Children diagnosed with autism do not seek out social interactions, have difficulty sharing in conversations or conversational turn-taking, and do not display emotions or understand the feelings of others (APA, 2000).

Finally, communication delays affect verbal and non-verbal skills. Children diagnosed with autism experience delays in spoken language (APA, 2000). Some autistic children remain non-verbal throughout adulthood while others eventually learn to speak. Some children with autism and verbal abilities may experience impaired social communication skills. Other children

with autism exhibit echolalia, meaning they "simply repeat phrases and intonations heard but cannot functionally communicate" (APA, 2000; Owens, 2004, p. 485). Once developed, the "pitch, intonation, rate, rhythm, or stress of verbalizations may be abnormal" (APA, 2000, p. 71). There is also a lack of grammatical structures and language comprehension skills for those children who develop speech (APA, 2000). These language comprehension delays affect the child's ability to understand directions or questions. Children with autism lack the capacity to integrate words with gestures. While these children can speak words, they do not use them to communicate functionally. The lack of understanding of non-verbal social cues causes delays or a lack of social and make-believe play (APA, 2000). Skills to manage social interactions, increase interests, and strategies to control repetitive behaviors can be taught; however, this becomes difficult when the ability to communicate is not present (Yoder & Lieberman, 2010). Research has pointed out that, "85-90% of children diagnosed with autism, who began interventions before five years of age, learn to communicate verbally" (Koegal, 2000, p. 384).

Research has quantified many strategies to increase functional communication skills in children with autism (Bowker, D'Angelo, Hicks, & Wells, 2011; Brunner & Seung, 2009; Carbone, Sweeney-Kerwin, Arranasio, & Kasper, 2010; Grandin, 2013; Panerai et al., 2009; Pasco & Tohill, 2010). Learning to communicate is not in always a verbal, traditional manner (Bowker et.al., 2011; Brunner & Seung, 2009). The literature reviewed described various visual means of communication that have shown significant results in increasing the functional communication abilities of children with autism. Ospina and colleagues (2008) conducted a review of the literature focusing on behavioral and developmental interventions for autism. The primary strategies highlighted in their study were (a) Applied Behavior Analysis, (b) Lovaas method, (c) computer-assisted instruction, (d) incidental teaching, (e) milieu therapy, (f) Picture

Exchange Communication System(PECS), (g) More than Words, (h) Discrete trial training, (i) social skills programs, (j) Treatment and Education of Autistic and Related Communication-Handicapped Children (TEACCH), and (k) sign language training (Ospina et al., 2008). Noted in the findings was that all the interventions studied showed quantitative significance in the increase of communication after the treatment (Ospina et al., 2008).

The common factor with most of these strategies is a visual representation of the speech model. In an interview concerning her book *The Autistic Brain: Helping Different Kinds of Minds Succeed*, Grandin (2013) pointed out that, in general, visual supports were the most successful in gaining communication and social interactions. Some of these visual programs outlined are purchasable programs such as PECS and TEACCH. PECS is a program in which children exchange pictures with others as a means of communication (Ospina et al., 2008; Pasco & Tohill, 2010). This program has shown significant results in increasing the number of verbalizations and the functional abilities of children with autism (Pasco & Tohill, 2010). A similar program called the TEACCH method has the same purpose but aims at using images in the environment as labels for items (Panerai et al., 2009). Developed as a clinical approach in which parents are committed and involved with the clinicians and physicians, TEACCH implements functional communication skills using pictures (Panerai et al., 2009). Another strategy that has shown quantifiable success is the use of sign language (Carbone et al., 2010). As young children develop, they naturally use pointing and gestures. Therefore, introducing purposeful signs to communicate wants and needs increased functional communication in a non-verbal manner (Carbone et al., 2010).

One study indicated that people with aphasia, a specific communication impairment caused by brain injury, begin to communicate using non-verbal means (Rautakoski, 2011). They

start to use gestures, body movements, facial expressions, eye contact, or gaze to compensate for their verbal impairment. These strategies function as total communication methods for those with limited verbal ability (Rautakoski, 2011). Total communication, in general, is the usage of multiple means to communicate (Mirenda, 2003; Rautakoski 2011). While the usage of these non-verbal techniques occurs naturally for some, others with communication delays require instruction in order to show success in the use of non-verbal communication methods (Rautakoski, 2011). Rautakoski (2011) pointed out that prior research using these non-verbal communication methods only focused on teaching one strategy and that the combined use of non-verbal strategies is considered "preferable" (p. 345). A combination of sign language, non-verbal communication methods, pictures, and verbalization can be used to aid in language acquisition and increase functional communication.

No two children with autism are alike. Each child functions at various operational levels that differ from child to child. What works with one child may not work with another. Other specific indicators, such as parental involvement or early intervention, also affect a child's ability to exhibit functional communication skills. Concerning the use of these strategies, future recommendations point to the need for qualitative research regarding the intervention of preference for each child with autism considering the various ranges of abilities (Bowker et al., 2011; Brunner & Seung, 2009).

Situation to Self

My previous teaching career has included Title I teacher for grades three and five, Early Intervention Program (EIP) teacher, music teacher, and classroom teacher in grades pre-kindergarten through fourth grade. Currently, I serve as a teacher and administrative director of the Significantly Developmentally Delayed (SDD) and pre-kindergarten programs in my county.

In this position, I act as both teacher and administrator for special education programs and pre-kindergarten program. In my seventeen years of teaching, children with autism were always involved and included in my music classes or inclusion classes. Since I have been a special education teacher, I have had many children with autism in my self-contained preschool classroom.

As a classroom teacher, I always asked to have the inclusion students placed in my class because I heard the complaints from other teachers who had to "just deal with those kids." I felt that children with any disability should not be "dealt" with, especially since I think that children with autism are such an interesting challenge. Teachers have commented that they do not want students with disabilities in their classrooms because they do not wish to deal with those students who bring their test scores down, or those students who exhibit behavior difficulties.

Additionally, parent and community perceptions of special needs students in my county indicate an outdated understanding of special education and specific disabilities. Special education, in general, is thought of as a place where kids go to be away from other students, where children are sitting in a chair drooling. I have worked hard to overcome these parental misconceptions. This antiquated thought process has guided my decision to look at a topic that concerns children with disabilities, specifically autism.

Problem Statement

An increase in prevalence in the diagnosis of autism has led to an increase in children diagnosed with autism entering schools. A common and frequent symptom is that these children have a lack of development in communication. In order to function in society, communication is a necessity, especially with preschoolers in order to meet their daily living needs. In an effort to provide communication skills for preschoolers with autism, quantitative research focused on

many approaches or strategies and determined that many of the approaches were effective. Determinations have not been made to address which of the strategies are preferred by the child. The essence of the experiences, as described by the caregivers of preschoolers with autism, is not yet explained in the research (Carbone et al., 2010; Panerai et al., 2009; Pasco & Tohill, 2010). While many of these approaches or strategies work, the problem exists that some of them are expensive, purchasable products used in clinical or therapeutic settings, and not implemented in the child's natural environment (Ospina et al., 2008). More specifically, while these methods and strategies are successful, they have not shown which approach works best for each autistic child based on the varying range of degrees of communication abilities. The body of research available has not yet provided a clear understanding concerning the most effective communication intervention for preschoolers with autism (Kurt, 2011). This leads to a gap in the literature. Specifically, it is necessary, not only to state there are some strategies or interventions that work, but to determine which of these interventions or strategies promote experiences that result in functional communication skills in a home or school setting.

Purpose Statement

The purpose of this phenomenological study was to explore the total communication experiences of preschoolers diagnosed with autism as described by their teachers and parents at Harris Elementary School. I defined total communication methods as a communication method using multiple strategies that promote functional communication skills both in the home and school settings.

Significance of the Study

"Communication skills provide a foundation for social and personal relationships and exert powerful influences on behavior, self-regulation and learning on a daily basis," according

to Koegel (2000, p. 388). Exploring communication methods for children with autism provides a body of research that can lead to a better understanding of the communication needs of those diagnosed with autism. With the successful application of interventions, there is a significant change or betterment in the quality of life for that child and their family, teachers and peers (Klin et al., 2004). This study contributes to the existing literature in a qualitative manner as opposed to the quantitative research previously reported.

As with typically developing preschoolers in a school setting, progress is monitored using observations and anecdotal notes describing actions and quotations of a child. Applying this thinking to the design of this qualitative study, a home questionnaire, interviews, and focus groups will provide a deeper, richer understanding of the experience of utilizing total communication methods to provide functional communication for children with autism in a preschool setting. This research will provide information to other early intervention programs serving toddlers who are exhibiting the same delays in communication (Klin et al., 2004). Finally, this research is significant in that it provides a sense of success for the children and their families in daily living skills, functional communication, and learning.

Research Questions

In education, we often look at what best suits the teacher or the class as a whole instead of looking at what is best for children from the child's point of view. The research in this current study focused on the experiences that parents of children with autism and their teachers and therapist have with the use of total communication methods. I grounded this research in Skinner's (1938) operant conditioning and his book, *Verbal Behavior* (1957), Bandura's (1977) social learning theory, and Vygotsky's (1935) zone of proximal development. The following questions serve to explain this experience based on this theoretical framework:

1. How do total communication strategies in the form of tacts and mands with reinforcers, influence the students' ability to communicate in a functional manner?

Understanding a child's strengths and deficits is important in the selection of the most appropriate teaching strategy or intervention method (Brunner & Seung, 2009). A total communication system provides students with a means of communication in a functional manner in that the child will establish a means through which to express wants and needs. The work of Skinner (1938, 1957) explains the basic means through which children learn to communicate. Operant conditioning is a means through which learning occurs with the use of reinforcers (Skinner, 1938). Children can learn to communicate with the use of reinforcers in the form of tacts and mands (Skinner, 1938). Skinner explained that communication is a behavior that can be modified through reinforcements (Skinner 1957). For the purpose of this research, I have defined total communication as the combination of pictures, sign language, and words as a scaffold to communicate. Vygotsky (1957) explained that there are zones through which children can complete a task with help and then progress to an independent completion of the task. Children could learn to communicate using the pictures and sign language combined with words as a scaffolding method eventually leading to independent verbal communication. It will be important to determine the impact of the total communication methods for functional communication. Recommendations in the literature explain that future research should focus on the effect of early interventions on the communication abilities of children with autism (Shumway & Weatherby, 2009).

2. How does the use of total communication strategies reshape a child's social interactions and social learning?

Bandura's (1977) social learning theory explains that learning occurs through social interactions with others. Preschool classrooms center on this theory, in that children learn through play and interactions with teachers and peers. These social interactions are also a function of communication. When a child can communicate, he or she can interact with peers in a social setting. Disruptive or maladaptive behaviors decrease when a child has gained a communication method. Additional research to "evaluate the effects of various interventions on social skills, challenging behaviors, and academic skills is needed" (Ganz et al., 2012, p.71). This question is designed to examine the perceptions of parents and teachers and the agreement of the two groups concerning social skills (Murray, Ruble, Willis, & Molloy, 2009). Additionally, research indicates that there is a need to investigate the social communication skills of children with autism (Koegal, 2000).

3. What additional resources do the parents or teachers feel would enhance or provide scaffolding in the use of total communication strategies?

There is a growing need for "innovative, efficient, cost-effective treatment that involves families as a mechanism for increasing intensity of intervention" (Minjarez, Williams, Mercier, & Hardin, 2011, p. 94). Parents require instruction to become interventionists in the home (McDuffie & Yoder, 2010). Again, the use of total communication is a learning process for parents and teachers alike. As previously explained, Vygotsky's zone of proximal development applies to parents as well. Parents and teachers may need additional support in the form of scaffolding in order to implement total communication efficiently. Throughout the study, the participants found that there are additional resources needed in order to implement the communication methods effectively. There were obstacles that arose during the study that interfered with the usage of communication methods.

There is a need for future studies that answer questions concerning the educational experiences, of children with autism (Bowker et al., 2011; Ganz et al., 2012; Koegal, 2000; Yoder & Lieberman, 2010). Shumway and Weatherby (2009) call for further research to determine the successfulness of the coordination of multiple communication methods in preschoolers with autism. Additionally, it is determined that communication with a goal of social interaction is an easier place to start providing interventions than any other function of communication (Shumway & Weatherby, 2009). The body of research, thus far, advises that there is a need for research to address communication and language development using functional communication skills with young children in natural settings (Prizant, 1996). As this is a phenomenological study, these research questions will provide information concerning the effects and influences of total communication methods with preschoolers with autism, and fulfill the needs called for in other research.

Research Plan

This qualitative study employed a transcendental phenomenological design. This study filled the gap in the literature in that it provided a qualitative look at the experiences of the participants with the use of total communication methods. This qualitative explanation provided a description of the experiences that are important to the use of total communication methods. The site for this current study was a preschool located in a rural area of North Georgia. The participants were parents, teachers, paraprofessionals, and the therapist who provide services for preschoolers with autism. The sample size for this study was a combined total of eight teachers, paraprofessionals, or therapist. Additionally, five parents participated in the study. Total communication methods are currently in use by the teachers, paraprofessionals, and therapist in the classroom settings, and these methods are encouraged for use at home with the parents. A

home communication questionnaire, individual parent interviews, and professional focus groups comprised the data collection methods for this study. Completion of this research occurred over a four-week period. Upon the completion of the data collection period, I transcribed the data, and then analyzed it using Moustakas' (1994) phenomenological model. The essence of the experiences of the participants, as they relate to the research questions, presented a final exploration of the shared experience. The research to date concerning total communication methods is quantitative in nature (Ospina et al., 2008; Panerai et al, 2009; Pasco & Tohill, 2010). The aim of this current qualitative study was to determine the experiences of implementing total communication strategies.

Delimitations

Delimitations in research studies are distinct boundaries that the researcher establishes to limit the study (Creswell, 2007). Restricted to preschoolers with autism, instead of focusing on any preschooler with a communication delay, provided a boundary to regulate the participants of this study. Additionally, focusing on the preschool age group was essential to this study as this is the age group in which language development increases most rapidly (Chilampikunnel, 2010). In addition, this age group is typically when the child's doctor, parents, daycare, or preschool teachers determine a language delay.

Definitions

1. *Autism* - Autism is a developmental disorder characterized by the presence of at least three of six indicators as outlined in the Diagnostic and Statistical Manual of Mental Disorders, (American Psychiatric Association, 2000).
2. *Functional communication* - The ability to express wants and needs to others (Hegde, 2010)

3. *Sign language*- A conventional, gestural communication system, such as American Sign Language in which users manipulate their hands to represent words (Stokes, 2001).
4. *Communication methods*- Methods used to communicate, with or without words, eye-gaze, facial expressions, body language, pointing, gestures, pictures or sign language, aided devices (Stokes, 2001).
5. *Non-verbal*- A means of describing a child's ability to communicate refers to the ability to functionally express wants and needs and interact in a social setting, generally meaning the non-verbal person uses ten or fewer functional words (Yoder & Lieberman, 2010).
6. *Pictorial* cues (pictures) -Photographs, clip art, or drawings of items, actions, or activities (Stokes, 2001).
7. *Total communication*-A situation in which the communication partner (teacher or parent) accompanies each picture or manual sign with the corresponding spoken word (Georgia Project for Assistive Technology, 1991).
8. *Turn taking*- A conversational exchange in which one partner in a conversation uses cues to know when to start and finish a turn and allow the next person to speak (APA, 2000).
9. *Verbalizations*- A communication effort in which one expresses the desire to convey a message to someone else using spoken words (Stokes, 2001).

Summary

Chapter One provides an outline of this dissertation focusing on the parent and teacher perceptions of implementing a total communication strategy with preschoolers diagnosed with

autism. This chapter begins with an overview and background information concerning autism and communication related to autism. I explained my relationship to the participants and the topic of interest as the inspiration for this study. The problem explained in this study is that many children diagnosed with autism are non-verbal and lack any other means of communicating. Communication, whether by using words, pictures, or sign language, is the method through which we make our wants and needs known, and enables us to interact in social situations with others, as well. Parents and teachers have difficulty interacting with non-verbal children. While reviewing the literature, I discovered a gap in that much of the research concerned interventions or strategies in quantitative studies and did not explain the experiences of parents and teachers involved with preschoolers with autism. Researchers have proven that sign language, picture-based interventions, and combinations of interventions have been successful (Brunner & Seung, 2009; Tincani, 2004; Yoder & Lieberman, 2010). Prior research has not determined the experience from the point of view of the teachers and parents. I posed three research questions that focused on the experience of using interventions from the participants' viewpoint. I then outlined the research plan using a qualitative method to gain an understanding of this experience. I concluded the chapter with delimitations and definitions relating to this research.

CHAPTER TWO: LITERATURE REVIEW

Overview

Communication begins to develop within the first year of life. Even though vocalizations do not occur during the early stages of infancy, attempts using gestures, sounds, and eye contact are typical communication efforts of infants (Shumway & Weatherby, 2009). In contrast, one of the major diagnostic characteristics of children with autism is a significant delay or lack of communication skills (APA, 2000). Early intervention strategies or programs are essential to improving the communication abilities of children with autism. Previously studied interventions indicated that there is very little transfer of skills into activities of daily living (Wong & Kwan, 2010). Many of these programs or strategies are grounded in operant conditioning (Wong & Kwan, 2010). Behaviorist theories of operant conditioning and verbal behavior guide this research. Vygotsky's (1934) constructivist theories, social learning, and zone of proximal development provided the groundwork for the current research. Chapter Two explains the theories related to total communication strategies, the development of language, types of communication methods, and an in-depth description of current approaches to communication development and their effectiveness. Finally, this chapter describes the need for preferential determinations by students, their parents, and teachers. This led to the purpose of this qualitative study.

Theoretical Framework

Providing communication instruction or interventions for children with autism help these children to feel a part of their environment and interact as contributing members to society (Jones & Klin, 2009). As defined by Shumway and Weatherby (2009), the three primary functions of communication are "behavior regulation, social interaction, and joint attention" (p.

1139). Deficits in communication skills may lead to difficulties with activities of daily living and may result in maladaptive behaviors. A means to communicate helps alleviate these difficulties. For some children with autism, learning communication skills requires explicit interventions. Hoy (2007) defines learning as a change in behavior. An experience produces a change in someone's behavior. "Change *must* occur because of experience, whether or not the learning is intentional or unintentional" (Hoy, 2007.p. 2).

Two theoretical paradigms attempted to explain learning. These are behaviorism and constructivism. Behavioral theories "stress observable changes in behaviors, skills, or habits" (Hoy, 2007.p. 2). Constructivism emphasizes that learning is the construction of knowledge (Hoy, 2007). Communicating, both in functional and social situations, is a part of the learning process. When researching or working with children with autism, the paradigms of behaviorism and constructivism become applicable most frequently, although there are many theories that emerge. The theories that influence language acquisition and functional communication skills are B. F. Skinner's (1957) operant conditioning and verbal behavior. The social interactions of communication are explained with the social learning theory (Bandura, 1977) and Lev Vygotsky's (1935) zone of proximal development.

Behaviorism

Considered as the "most scientific of the psychological perspectives," behaviorism is a paradigm that often explains learning (McLeod, 2007, p.1). Behaviorism states that learning takes place as the result of conditioning, a system of forming an association between a stimulus and a response (Skinner, 1957). Behaviorists define learning as "a permanent change in behavior which occurs as a result of practicing" (Miller, 2011, p. 225-226). In this way, desired behaviors are encouraged or strengthened while undesirable behaviors are discouraged or weakened.

Behaviorism explains observable behaviors to show how people learn to behave and modify their behaviors to fit situations (McLeod, 2007). Based on this paradigm, the usage of total communication implementing multiple methods is a practiced behavior in an attempt to create new and permanent learning. There are two behaviorist theories that provide the groundwork for this research. These are operant conditioning and verbal behavior both developed by B. F. Skinner (1938, 1957). Interventions with "clear reinforcements for positive behaviors and the withholding of reinforcements for negative" behaviors should be included in instructional programming for children with autism (Solomon, Ono, Timmer, & Goodlin-Jones, 2008, p. 1768)

Operant conditioning. Skinner's (1938) operant conditioning provides the groundwork for the acquisition of language. Based on the work of Ivan Pavlov and John Watson's ideas of behaviorism, Skinner developed and coined the term operant conditioning (Miller, 2011). Miller (2011) explains that operant conditioning is a reinforcement model in which the learner gains a new behavior. Operant conditioning focuses on a change in behavior by the use of a reinforcer (Skinner, 1938). This is a response given after the desired behavior (Skinner, 1938). Operant conditioning can explain the process of learning and language acquisition, applicable in both educational and clinical settings (McLeod, 2007).

Skinner (1957) outlined behavior modification in order to analyze a child's problem behaviors and a process of reinforcement in which the specific behavior is modified or changed. In this study, communication skills are the behavior that I am concerned with modifying. Skinner's theory uses reinforcement, both positive and negative, in order to develop the needed change in a behavior (Miller, 2011). This applies to using sign language and picture cues with non-verbal children in that repeated reinforcement (presenting sign language or a picture when

making a command or demand) gets the desired outcome, while uncontrolled behaviors such as yelling or becoming physical do not gain the desired outcome (McLeod, 2007). These behaviors are ultimately ignored (McLeod, 2007). The presentation of a mand (a desired item) while promoting the sign using American Sign Language (ASL) for the item has shown to be effective (Carbone et al., 2010). Using sign language with mands that the child chooses produces a vocal response in addition to the use of signs (Carbone et al., 2010). Visual systems are effective in teaching functional communication skills to children with autism, because it uses concrete visualizations and the use of reinforcers as outlined by the principles of operant conditioning (Hart & Banda, 2010).

Verbal behavior. Skinner's (1957) book, *Verbal Behavior*, rooted in behaviorism, explains operant conditioning and reinforcement techniques as applied to the behavior of verbal communication. This original work is an in-depth analysis of language. Skinner based this research on his observations of mothers reacting to their infants and toddlers. Skinner examined language in its smallest units, which he identified as verbal operants. The reinforcement of these verbal behaviors depends on the actions of someone else. "Any movement capable of affecting another organism may be considered verbal. The listener must be responding in ways in which have been conditioned precisely in order to reinforce the behavior of the speaker" (Skinner, 1957, p. 14).

"Two main classes of verbal operants are mands and tacts"(Skinner, 1957, p. 224). Operants are units described by their effectiveness or functionality. Verbal behavior is "the behavior mediated through the action of others" (Skinner, 1957, p. 14). The effect on the environment, or how one operates in the environment depends on the interactions with another (Skinner, 1938). This theory is relevant to verbal behavior by the use of tacts and mands or

verbal operants (Skinner, 1957). A mand is a situation in which a child makes a demand such as "drink" and the parent or caregiver reinforces the verbal behavior by providing the demand. Functional communication is comprised of mands (Skinner, 1957). The other operant is a tact. A tact is similar to coming in contact with an item. The child sees an item or picture and labels it (A dog!), then the parent or caregiver would reinforces the verbal behavior (Yes, there is a dog.).

"Applications of the theory of verbal behavior are found to be effective in inducing verbal development" (Greer, 2008, p. 364). This theory applies to teaching children with autism to communicate using total communication methods in that it requires the child to use the operant in order to receive reinforcement. An increase of vocalizations using basic commands provides an operant level from which confidence in functional communication can grow into a much larger spoken vocabulary, which can lead to social interactions (Carbone et al., 2010).

Constructivism

Learning and verbal behavior are social actions in that they are "reinforced through the mediation of other persons" (McLeod, 2007 & Skinner, 1957, p. 14). In this manner, learning is *constructed* or built through social interactions. Learners construct or build knowledge. Vygotsky (1934) posited that children are active learners and that knowledge is constructed. These constructions can be true for one person, but not true for another (Schunk, 2008). In the application of constructivism as a framework for total communication, the construction of functional communication skills is true for the subset of preschoolers with autism, but would not be true for typically developing peers. New information builds upon prior learning. Social learning theory is a theory that posits that learning is rooted in a social structure (Miller, 2011). Vygotsky formulated the zone of proximal development through which learning can occur with scaffolding (Miller, 2011).

Social learning theory. Learning is a social behavior in that it relies on a reaction from another person. Some children with autism are able to speak. However they lack any type of social communication skills. The social connections required of operant conditioning provide these children a means to access their functional communication skills while developing social communication skills. Social learning theory based on the school of thought that learning can take place through passive observations, provides an opportunity for live modeling of behaviors (Bandura, 1977). Modeling a technique such as sign language in a video format without direct interaction is an effective means of teaching language skills to children who are non-verbal (Beiderman & Freeman, 2007). The use of passive observational teaching strategies such as video modeling, with interactive modeling such as hand over hand demonstrations have shown to be effective as well (Beiderman & Freeman, 2007). Video presentations of sign language were presented and did show that all children, both those with and without communication difficulties, learned the signs faster using the video method over that of interactive modeling (Beiderman & Freeman, 2007).

Bandura's (1977) social learning theory states passive observation in a social experience provides the medium for behavioral learning. Tasks learned in a passive setting, such as simultaneously use of signs with vocal prompts, are found to be more successful than those learned in an interactive method in which a sign is taught using hand over hand modeling (Beiderman & Freeman, 2007). Passive learning is not a typically accepted method of learning in school systems that strive for active engagement of students.

Social development theory. Vygotsky's (1934) social development theory and the resulting zone of proximal development are constructivist theories that relate to the instruction of communication methods to preschoolers with autism. Communication is the means through

which social interactions occur (Vygotsky, 1934). Learning to communicate takes place in social settings and can serve many purposes in the nature of society. "Peers are a critical component of research focusing on child-to-child interactions" (Murdock & Hobbs, 2011, p 876). Pointing or gesturing and joint attention are all components of social learning (Vygotsky, 1934). Communication aids preschoolers in expressing their wants and needs. Children who lack communication skills have a difficult time interacting in social settings. The social development theory states that learning is a social activity and that learning occurs in developmental steps (Vygotsky, 1935). Vygotsky later described these steps or zones through which children learn and can complete tasks with scaffolding (1935).

Vygotsky posits that there are zones in which children develop (Vygotsky, 1935). Children move from an area of learning requiring prompting with no independence to an area of learning in which skills can be performed independently (Miller, 2011). What one child can do at a certain age is not the same as that for another child (Vygotsky, 1934). Mental age varies across children. Additionally, the ability to perform independently varies from child to child (Vygotsky, 1934). The difference between the child's mental age and the "level he reaches in solving problems with assistance indicates the zone of proximal development" (Vygotsky, 1934, p. 187). The zone of proximal development refers to the performance level of a child on independent tasks and the potential level of functioning when a child receives support (Vygotsky, 1934). Vygotsky felt it was important to describe a child's ability based on what he can do with assistance as opposed to measuring what a child can do independently (Vygotsky, 1934). This theory focuses on the area of growth and maturity that a child makes into a newer level of independence instead of focusing on specific achievement. In this manner, the zone of proximal development is essential to the communication development of children. Children with

communication delays initially require support with visuals and prompts to communicate and then expected to communicate with these means independently.

Summary of Theories

These theories interact to provide an understanding of how preschoolers learn and use language in social situations, to not only express wants and needs, but to interact with peers and familiar adults. As with the theory of social learning, preschoolers sometimes learn as passive observers. A preschooler with autism can acquire new skills from watching or listening to peers or teachers. In addition, this learning can take place via a developmental process in which the child receives support as described in Vygotsky's zone of proximal development and then moves to a level of independent functioning. The most efficient means for preschoolers with autism to learn these new skills is to provide a system of operant conditioning, reinforcing new behaviors until the new communication attempts become a learned behavior or communicative intent. These learned behaviors provide a means of communication in which preschoolers can become more interactive in a social environment. "The ability to create common conceptual ground, joint attention, shared experiences, and common cultural knowledge are an absolutely critical dimension of all human communication" (Christy, 2013, p. 201).

Related Literature

When one thinks of speech, language, or communication, one often thinks of speaking. However, communication is not always verbal or vocal (Gerber, 2003). Verbal communication is often the most prominent form of communication; however, it is not the only form. Infants and toddlers communicate their needs through crying, facial expressions, eye gaze, pointing, and gestures. Many children and adults interact by various means, such as sign language and technological devices, throughout their lives. Children with speech and language disorders or

developmental delays often communicate using speech sounds, but may have difficulty in forming these articulations correctly and naturally or in a method that leads to social interactions. Research conducted by Prizant (1996), has shown that there is a correlation between cognitive abilities and speech and language development. He implies that a delay in speech and language development leads to a delay in cognitive ability. Others found that issues that are present from birth lead to communication delays (Jones & Klin, 2009).

Many developmental disorders result in communication delays (Gerber, 2003). Autism is one of these developmental disorders that results in a lack of, or delay in communication (APA, 2000). Autism is characterized by impairments in social interactions, difficulties in acquiring and using language, restricted range of interests, and an extreme need for consistency in daily routines (APA, 2000). Autism is a disorder that is still poorly understood, implying that further research is needed to be able to understand how children communicate. Sign language combined with pictures makes it easier for children with autism to increase vocalizations or the use of spontaneous signing (Toth, 2009).

The acquisition of functional communication skills appears to be the single most challenging aspect for parents and teachers (Gerber, 2003). It is a challenge to educators not only to teach the brightest, motivated students to be successful, but to teach those with developmental delays to be successful as well. No Child Left Behind legislation requires teachers to use evidence-based practices to guide decisions (Spencer, Petersen, & Gilliam, 2008). Best practices or curriculum-embedded interventions do not always reach all children (Gerber, 2003). Murray, Ruble, Willis, and Molloy (2009) pointed out children with "high social avoidance had poorer language outcomes" (p. 109). Teachers must look for other interventions to reach the most significant delays. Sign language instruction using videos and pictorial cues

have shown to be useful for children with communication delays (Toth, 2009). Ospina et al. (2008) reviewed many interventions relating to autism. Most of these interventions described strategies to aid in communication for preschool children (Ospina et al., 2008). Some of these interventions require expensive purchases and many hours of intense, in-depth training. There are other methods that can be provided for preschoolers in a local school setting and the natural (home) environment. The following review of the literature will describe behavioral characteristics of children with autism, language development and communication methods, and interventions to aid in the acquisition of a total communication process.

Behavioral Characteristics

Repetitive behaviors and a lack of communication are characteristics of children with autism (APA, 2000). The behavioral and language delays of which these children suffer are often not understood (Bolte, Westerwald, Holtmann, Freitag, & Poustka, 2011). When children have difficulty communicating, they often display other maladaptive behaviors in order to gain attention. Some children's behaviors prevent them from interacting with other children. Examples of these behaviors are tantrums, screaming, hitting, biting, repetitive noises, and self-stimulating vocalizations. Students with uncontrollable behavior have difficulty communicating their wishes. They display uncontrollable or mal-adaptive behaviors when their wants or needs go unmet. In a classroom setting, these uncontrolled actions and lack of communication skills negatively influences the child's ability to participate in activities and social interactions. It also leads to the disruption in learning for other students. Communication strategies could help children with autism learn successful interaction skills and perhaps lessen some of the uncontrollable behaviors by giving the child a means to reach out to others (Bolte et al., 2011).

Language Development and Communication Impairments

Communication is defined as a "purposeful behavior which is used with intent within the structure of social exchanges, to transmit information, observations, or internal states, or to bring about changes in the immediate environment" (Stokes, 2001, p. 1). These behaviors can be verbal or non-verbal. Koegal (2000) points to findings that suggested using a behavioral model instead of a more clinical approach to providing interventions. "Unconventional verbal behaviors such as echolalia, preservative speech, and incessant questioning" (Stokes, 2001, p. 1) are present in children with autism. Behavior regulation methods are "acts used to regulate the behavior of another person to obtain a specific result" (Shumway & Weatherby, 2009, p. 1145). "In this manner, the child is trying to get another person to do something using non-verbal means of communication" (Shumway & Weatherby, 2009, p. 1145). These non-verbal behavior communication exchanges are steps in the language development of toddlers and preschoolers.

Language develops in stages throughout a child's early years. When babies are born, they must learn to communicate their needs. Babies begin to communicate through facial expressions and to cry. These attempts at communication progress to gestures, babbling, and eventually words. Gerber (2003) outlines seven stages through which children progress as language development occurs. These stages are (a) pre-intentional stage, (b) pre-linguistic intentional stage, (c) first words stage, (d) two words stage, (e) early syntactic-semantic complexity, (f) later syntactic-semantic complexity, and (g) finally communicative competence (Gerber, 2003, p. 80). Children progress through these stages at varying rates, although some children with developmental delays do not show progress through all stages.

Prizant, Weatherby, Rubin, & Laurent (2003), defined stages of language development that are more commonly known to teachers. These stages are (a) pre-linguistic, (b) emerging,

and (c) advanced (Prizant et al., 2003). In the pre-linguistic stage, a child begins to make intentional communication attempts (Prizant et al., 2003). In the emerging stage of language development, the child uses gestures, signs, and says first words (Prizant et al., 2003). This first words stage is the earliest form of symbolic communication (Prizant et al., 2003). Finally, the advanced stage of language development refers to the transition from first words to the linguistic communication usage of word combinations (Prizant et al., 2003). Throughout these phases, there are particular skills that children must acquire to develop language and communication proficiency. These are joint attention, imitation skills, and naming or labeling (Gill, Mehta, Fredenberg, & Bartlett, 2011).

Joint attention. According to Jones and Carr (2004), joint attention is "an early developing social – communication skill" that "plays a crucial role in social and language development" (p. 13). Competent communication requires the ability to attend jointly, understand, express meaning, and use communication to convey meaning functionally and socially (Koegal, 2000). Shumway and Weatherby (2009) define joint attention as "acts used to direct another's attention to an object, event or topic" (p. 1145). Joint attention, the ability of the child to attend to a task or the shared interest in an object with another person, has been shown to increase in a naturalistic or home intervention (Brunner & Seung, 2009). Joint attention is an essential prerequisite for developing language (Shumway & Weatherby, 2009). Since social skills are delayed in children with autism, joint attention may be delayed or non-existent as well. The development of joint attention in a preschooler leads to a new stage of comprehension and social learning (Koegal, 2000). Joint attention coordinated with communicative acts must be present in order to communicate.

Imitation skills. Imitation is simply when a child imitates an action or a vocalization. Language development in children has a direct correlation with imitation skills (Gill et al., 2011). When a child fails to imitate sounds and actions as a toddler, he has difficulty producing speech articulations at later stages of development (Gill et al., 2011). This deficit has resulted in seven to eight percent of preschool-age children diagnosed with speech-language disorders (Gill et al., 2011). After a series of specific interventions concentrating on imitative skills, the areas of frequency of sound production and imitation of sounds demonstrated a significant improvement (Gill et al., 2011).

If imitation skills are absent, speech and language skills usually do not develop (Gill et al., 2011). Again, the prerequisite of joint attention is required in order to develop imitation skills. Imitation skills begin as an imitation of the adult's gestures or actions (Thomas, Lafasakis, & Sturmey, 2010). Next, the child imitates linguistic skills such as first words or imitating actions involving objects (Thomas et al., 2010). Imitation skills are required to initiate a sign language intervention or to be able to imitate verbalizations. Interventions strategies should begin with imitation training that can lead to an increase in vocal imitation (Tincani, 2004).

Labeling. Joint attention and imitation skills develop into a functional language as the child's language proficiency increases. Functional communication skills initiate with babbling and first words. More words are added rapidly around 24 months (Thomas et al., 2010). When these first words begin, imitation of words and naming items or wants quickly follows. Imitation skills then lead to naming. Labeling is the act of naming of objects or wants. In the process of labeling, the child hears someone say the name of the object and then responds by repeating the name of the object (Valentino & Shillingsburg, 2011).

Identification of impairments. Language skills are assessed using measures that focus on receptive, expressive, and pragmatic language skills (Owens, 2004). Receptive language skills require a child to give correct responses to questions and label, or name and classify, items (Kurt, 2011). Receptive language deals with the child's understanding or comprehension of verbalizations (Owens, 2004). Expressive language focuses not only on sound production or articulation, but also on the ability to respond to questions or statements from others (Owens, 2004). Pragmatic language skills relate to the social communication or interactions between individuals using both verbal and non-verbal clues (Owens, 2004). Non-verbal areas of pragmatic language communication are appropriate use of "eye gaze, expression of affect, prosody, topic shifting and maintenance, and non-verbal mannerisms" (Koegal, 2000, p. 388). Children with autism frequently switch topics (Adams et al., 2012). These children often experience the inability to make inferences, and present a lack of understanding of non-literal languages such as jokes or idioms. Evidence provides that often, pragmatic language delays are linked to emotional and behavioral difficulties as well (Adams et al., 2012). Identification of language impairments leads to the development of interventions or strategies to aid in the acquisition of language or communicative ability. An understanding of communication methods must be present before choosing an intervention.

Communication methods for non-verbal children. As discussed, communication is a behavior that can be verbal or non-verbal or can be a combination of the two. Half of all children diagnosed with autism remain non-verbal or non-vocal throughout their lifetime (APA, 2000). Thus, it is necessary to explore the types of communication methods and interventions that these children implement to convey their wants and needs functionally.

Non-verbal communication methods are those behaviors performed to provide a functional means of relaying information without using spoken words. Unaided communication does not require equipment other than the body to communicate (Nunes & Hanline, 2007). Unaided communication uses body gestures and verbalizations in communication (Nunes & Hanline, 2007). Communicative gestures are non-vocal actions directed toward another person that serve a communicative function (Shumway & Weatherby, 2009). The most fundamental of these is gesturing, pointing, or eye contact with an object, person, or event to gain a desired outcome (Georgia Project for Assistive Technology, 1991; Shumway & Weatherby, 2009). Using objects as physical prompts is another strategy implemented with non-verbal students to communicate with teachers or peers. Motor communication is yet another way in which a non-verbal child directly manipulates another person by grabbing a person's arm and leading them to the object of interest (Georgia Project for Assistive Technology, 1991). Children who are non-verbal, display joint attention and imitation skills by exhibiting non-verbal behaviors such as pointing, gestures, or grabbing an adult's hand and leading them to a desired item.

Verbal communication methods are those in which words provide the basis of communicating wants and needs. The child who expresses verbally presents joint attention, imitation skills, and labeling to some extent. However, some children only repeat random phrases or words. Echolalia is the random repetition of words or phrases. Echolalia is the communicative behavior in which the child repeats a question or statement instead of providing an appropriate response. Some children are not able to find the words to communicate and seem to have a communication method of their own (Prizant, 1983). As stated earlier, half of children diagnosed with autism remain non-verbal throughout life while many other children with autism exhibit echolalia (APA, 2000 & Prizant, 1983). These children can say words, but they are not

functional in making others aware of wants or needs. Oftentimes, words are not successfully implemented to communicate wants and needs or to interact socially or academically, leading to the consideration of non-verbal ability for these children. In addition, in a classroom setting, children who are echolalic have low expressive or pragmatic language skills in that they cannot answer questions or do not use words to interact with teachers or peers. Interventions are required to increase communication abilities for the expression of wants and needs as well as to participate in a school setting successfully.

Interventions

Historically, an autism diagnosis did not occur until later stages of childhood (Jones & Klin, 2009). This delay in the diagnosis led to a wide gap in social communication and social skills abilities of children with autism (Jones & Klin, 2009). In retrospect, there have been studies that point to the characteristics of autism early in an infant or toddler's development (Jones & Klin, 2009). These initial stages of life are the most crucial for learning social and language development skills in a behavioral manner. The first years of a child's life are the rapidest behavioral growth (Jones & Klin, 2009). One study found "greater improvements in verbal attempts, word approximations, word production, and word combinations, as well as lower levels of disruptive behavior" (Koegal, 2000, p. 384) when interventions begin at an early age.

Many children with autism do not progress through the stages of language development in a natural, relaxed manner. In some cases, disorders leave the child non-communicative. Some children diagnosed with autism and other disorders or syndromes have language deficits that would benefit from interventions that focus on language acquisition (Toth, 2009). When providing communication interventions, the modality of the communication method and the

procedures used to teach the communication strategy are two important factors of consideration (LaRue, Weiss, & Cable, 2009). As much as 85 to 90% of children who begin language interventions before five years of age become verbally communicative and use spoken words as their primary means of communication (Koegal, 2000). Current trends in interventions and instructional practices for children with autism focus on social communication (Wong & Kwan, 2010). Social communication skills such as joint attention, eye contact, initiation of social contact, and appropriate content of conversations are skills that must be developed in order for a child to communicate wants or needs (Wong & Kwan, 2010). As behaviors such as eye gaze, gestures, facial expressions, and vocalizations increase, problematic behaviors begin to decrease (Wong & Kwan, 2010).

Many successful methods and interventions increase communication skills. These interventions can be naturalistic, classroom-based, or developmental. Aided communication can improve the total communication skills of children with autism.

Types of interventions. Preschool children often receive intervention services in a variety of settings, as they are not yet required to attend school. Some parents choose to access interventions in the child's natural environment, that is, the home. Other parents wish to take advantage of the classroom setting to access intervention services. These settings vary in their intent and the design or outcome of the intervention. The focus of interventions for preschoolers can be naturalistic or classroom based and developmental.

Naturalistic interventions. One of these designs is a naturalistic intervention. A naturalistic intervention occurs when the child is in a relaxed setting in which the expectations to perform a specific tasks are of small importance as compared with the expectations of a structured therapy session or another formal classroom activity. This setting is in the child's

home or in the school, head start, or daycare setting. Naturalistic interventions, grounded in behaviorism, are those interventions that depend on the use of a reward system in the natural environment, a child's home or school setting (Brunner & Seung, 2009). A naturalistic intervention allows the child to guide the activity (Harjusola-Webb & Robbins, 2012). These interventions focus on rewarding and motivating children, especially those with autism, to perform a particular behavior, in this case, making explicit verbalizations or communicative acts (Brunner & Seung, 2009). Interventions that fall in this category are milieu teaching, functional communication training, aided communication, picture based interventions, and sign language (Bondy, 2012; Brunner & Seung, 2009; Byiers, Dimian, & Symons, 2014; Carbone et al., 2010; Georgia Project for Assistive Technology, 1991; Grandin, 2013; Koegal, 2000; Nunes & Hanline, 2007; Panerai et.al., 2009, Toth, 2009).

Milieu teaching focuses on incidental teaching, mand modeling, and time delay (Brunner & Seung, 2009). Incidental teaching is a situation in which the caregiver implements naturally occurring situations as the basis to provide language instruction (Brunner & Seung, 2009). Mand modeling follows incidental teaching, and then time delay before giving the reinforcer (Brunner & Seung, 2009). One example of milieu teaching is when the parent or teacher holds a preferred toy for the child to gain joint attention (incidental teaching). The teacher labels the object or uses descriptive words (mand modeling). The parent or teacher withholds the toy until the child gives the appropriate response.

Functional communication training is an intervention for children with challenging behaviors (Brunner & Seung, 2009). Functional communication attempts to replace inappropriate behaviors such as tantrums with more appropriate means of communicating wants and needs. This type intervention often makes use of switches, computers, or other aided

communication technological devices (Byiers et al., 2014). The implementation of physical prompting and rewards, based on operant conditioning, promotes independent use of a switch or device. There is little empirical evidence that this type of intervention is effective for all children with disabilities (Byiers et al., 2014).

Aided communication is additional interventions that follow a naturalistic viewpoint. Aided communication is a situation in which a person uses external equipment, devices, or simply using photographs, words, letters, drawings, or sign language to communicate (Nunes & Hanline, 2007). There are many technological devices that can aid in communication, such as iPads, switches, and communication devices (Georgia Project for Assistive Technology, 1991). Photos and pictorial representations, using pictures, photos, or communication boards to make wants and needs known are methods often implemented in a school settings (Georgia Project for Assistive Technology, 1991). One adult with autism has written of her personal experiences (Grandin, 2013). She has made strides to teach others what those diagnosed with autism need most (Grandin, 2013). She explained that visual supports are the most effective means of learning communication strategies for children with autism (Grandin, 2013). She revealed that from her experience, those with autism see everything as looking at a series of pictures (Grandin, 2013).

Commercial or well-known types of interventions following a naturalistic view are Applied Behavior Analysis, Treatment and Education of Autistic and Related Communication-Handicapped Children (TEACCH) and Picture Exchange Systems (PECS) (Brunner & Seung, 2009). Finally, sign language communication using ASL is widely used in preschool and school settings for children who are both, verbal and non-verbal, as a mean to increase understanding of

communication acts. Non-vocal means of communication can replace or enhance spoken communication (Silverman, 2008).

Skinner's (1938) operant conditioning influenced the Picture Exchange System (PECS) (Bondy, 2012). The first phases of PECS involve teaching the mand as described by Skinner and leads to the use of tacts or comments (Bondy, 2012). PECS is a program that relies on the exchange of pictures as a means of communication. There are six phases of PECS: (a) make requests through picture exchange, (b) persistence in initiating communication, (c) discrimination between symbols, (d). introduction to sentence structure, (e) answering questions, and (f) commenting (Pasco & Tohill, 2010).

A similar purchasable program, Training and Education of Autism and related Communication-handicapped Children (TEACCH) is a clinical method developed at the University of North Carolina in the 1960s (Panerai et.al. 2009). This method is a picture-based approach. Instead of using pictures solely as a means of exchange in order to communicate, the pictures are placed throughout the learning environment such as on visual schedules, visual tasks, or instructions and expectations, and classroom organization (Panerai et.al., 2009). This method also calls for parent interactions and implementation at home as a collaborative means of providing instruction. The model has shown success when compared with other methods of picture communication (Panerai et al., 2009). A TEACCH classroom consists of defined, designated work areas, with separate areas for individual and group activities, as well as play (Panerai et al., 2009). Children use picture schedules throughout the day to progress through activities, primarily in self-contained special education classrooms or in clinical settings, but can be used in home settings as well. Principles that guide the TEACCH program are "improved adaptation, parent collaboration, assessment for individualized treatment, structured teaching,

skills enhancement, cognitive and behavioral therapy, generalist training" (Panerai et al., 2009, p. 875). Additionally, a TEACCH classroom emphasizes a "physical organization of the environment, visual schedules, work systems, and task orientation" (Panerai et al., 2009, p. 875). This program does not lead to experiences with social interactions or to an increase in verbal interactions (Panerai et al., 2009).

The success of the previously mentioned commercially available programs leads to the assumption that picture or visual cues are important in the development of communication methods for preschoolers with autism. Recently, the trend in the provision of effective interventions for children with communication delays has involved sign language instruction. Sign language usage with children who are non-deaf has shown good results. Several studies have demonstrated the success of manual sign training for children with autism to be effective in functional communication skills (Carbone et al., 2010; Koegal, 2000; Toth, 2009). Research has shown that sign language not only aids in vocalizations, but also provides a means of communication in those children who lack verbal communication or functional communication skills (Carbone et al., 2010). Multiple studies have shown success in sign language use in classrooms where there has been little progress with any other strategy (Carbone et al., 2010; Koegal, 2000; Toth, 2009). There is also evidence that the skills were retained over a longer period because of sign language instruction. Behaviors such as attention and focusing and social skills have shown improvement as well (Seal & Bonvillian, 1997). As sign language is both visual and gestural, it has become the most viable approach affecting those who suffer communication delays (Toth, 2009).

Other case studies have yielded commercially produced DVDs that provide a detailed sign language instructional model (Toth, 2009). This model began as a Canadian program called

Bridge of Signs©. This study resulted in the creation and production of a DVD video series that was shown successful in teaching both verbal and non-verbal children to use sign language (Toth, 2009). Video methods are effective modeling techniques for teaching sign language to children. Video modeling would be an excellent addition to the instructional strategies in that passive observance of signs could increase the acquisition of language and communication.

In a comparison study, the comparison of using sign langue versus PECS has had comparable results, indicating the children show a greater acquisition for using sign language over using pictures (Tincani, 2004). Both picture and sign language methods were effective, but there are certain factors such as motor skill ability that influence the use of PECS or sign language (Tincani, 2004). Some children who had motor skill difficulties were not successful in using sign language, but were successful in the use of pictures. Various factors such as parental involvement and training, teacher buy-in, and physical limitations of students determine whether sign language or PECS is an appropriate model (Spencer et al., 2008). Preschoolers above the age of 16 months have shown more progress with PECS than those younger (Bondy, 2012).

The commonality of each of these interventions centers on communication that is functional in a natural setting and based on incidental teaching. Parents are fundamental in that many interventions require intense parental involvement. These interventions focus on prompting and reinforcements of appropriate behavior. Implementation in the classroom would require that the teacher provide rewards and consequences focusing on the natural play environment of the child instead of a structured teaching or therapy session (Brunner & Seung, 2009). Most preschool classrooms provide time in the schedule for student-selected center play. Free center play is an appropriate time to implement one of these interventions. It is important to

note that teachers or therapist in a school setting, specifically in special education classrooms, can easily implement purchasable, naturalistic interventions.

Developmental intervention. Another type of intervention is a developmental intervention. Language or communication interventions may also take on a developmental approach. In contrast to naturalistic interventions, these interventions focus on the developmental stages of children, in which the caregiver designs and initiates the activities. These interventions focus on the seven stages of language development, not specifically on verbalizations. Interventions in these categories include floor time, social communication, emotional regulation, and transactional support (Brunner & Seung, 2009). These interventions are less popular in use than naturalistic interventions. The reason for the decrease in popularity may be because there is less empirical evidence to support their use. However, these interventions are more economical (Brunner & Seung, 2009).

One developmental intervention is floor time (Brunner & Seung, 2009; Tsakiris, 2009). This intervention is for parents at home, however it follows strict scripted interactions. Unlike the free choice play in naturalistic interventions, floor time relys on specific types of responses for parents to use as they guide interactions with their child. Floor time is an intervention in which the parent sits on the floor and plays with the child while providing communicative responses (McDuffie & Yoder, 2010; Tsakiris, 2009). The parent and child can interact in a natural manner while providing intentional communication situations. This intervention is designed to increase not only verbalizations, but any communication skill, be it joint attention, imitating, gesturing, or vocalizations (Brunner & Seung, 2009). Using scripts to model interactions during play has been effective as well (Murdock & Hobbs, 2011). Scripts can help provide parents with guidewords to use during play interactions that increase communication and

social interactions. The fundamentally most important aspect of participation in naturalistic interventions is the child's parent. Play is crucial to a child's development and the inability to play with peers correlates with language difficulties. Peer interactions are an integral element when teaching children with communication difficulties.

Social communication, emotional regulation, and the transactional support model (SCERTS) is another developmental intervention (Brunner & Seung, 2009). SCERTS is a curriculum developed by Prizant, Weatherby, Rubin, and Laurent (2003). The SCERTS curriculum is a "systematic method that ensures that specific skills and appropriate supports, stated as educational objectives, are selected and applied in a consistent manner across a child's day," (Prizant et al., 2003, p. 301). SCRETS consists of three components: social communication (communicating spontaneously and establishing relationships), emotional regulation (regulating emotional arousal to support learning and engagement), and transactional support (elements that aid an individual's progress as he or she works toward a goal) (Prizant et al., 2003). This model was developed for those with autism across a broad range of ages and abilities. The SCERTS model, designed for use in a structured, professional-family centered environment, constructed on naturalistic interventions such as TEACCH, has a more structured curriculum or plan.

In common with naturalistic interventions, the parent is a vital part of the instructional and learning process of developmental interventions. Brunner and Seung (2009) found that lower functioning non-verbal children showed progress in functional communication and may benefit from parent-based interventions. The successful implementation of any developmental intervention depends on positive adult-child interactions (Brunner & Seung, 2009).

Total Communication Implementation

The first step in providing an intervention is to "map" which stage of language development a child is currently in, then design a strategy to assist the student in showing progress through the stages (Gerber, 2003, p. 75). The most important language approach is to teach language that accomplishes the child's purpose and expresses the child's meanings. Teachers can use words, silence, or gestures and the interactions should be in a natural setting while having fun (Gerber, 2003). These are necessary steps for the proper implementation of any plan.

Prizant, Weatherby, Rubin, and Laurent (2003) outlined steps to provide communication interventions for children with autism. The first step is to help the child with behavior regulation with visuals and sensory activities (Prizant et al., 2003). Next, the interventionist must set up situations in which the communication intentions can be provoked (Prizant et al., 2003). Children must be taught to communicate for a variety of functions or to gain a variety of responses. Some of these functions are requests, labeling, express feelings, wants, needs, or social interactions (Prizant et al., 2003). Children with autism who are non-verbal may also require instruction in how to gain attention with gestures, eye gazes, or motor intents (Prizant et al., 2003). The next step is to teach a child to attend jointly (Prizant et al., 2003). Providing visual cues or symbolic representations is the final step as explained by Prizant and his colleagues as the process to implement communication strategies with children with autism.

While most language interventions focus on verbal language, a child with developmental delays in language must have a functioning language (Carbone et al., 2010). Augmentative and alternative communication is defined by the American Speech-Language-Hearing Association as "a set of procedures and processes by which an individual's communication skills can be

maximized for functional and efficient communication. Augmentative or alternative communication involves supplementing or replacing natural speech and writing with aided or unaided symbols" (Spencer et al., 2008 p. 41). Examples of these are sign language, gestures, pictorial communication, and objects.

Kelly (2001) found that early learning increases when verbalizations are combined with non- verbal gestures such as pointing. Additionally, studies dating from the 1980s, suggest that total communication results in "faster receptive and expressive language acquisition than with speech or sign language alone" (Mirenda, 2003, p. 204). Bolte, Westerwald, Holtmann, Freitag, and Poustka (2011) conducted a study using a parent questionnaire concerning children with developmental disorders such as autism, Tourette's syndrome, obsessive-compulsive disorder, and pragmatic language disorder, as well as typically developing children. Their findings demonstrated the effective use of a repetitive visual model used to communicate such as sign language or picture models (Bolte et al., 2011). Many models are showing to be productive in teaching children to communicate. Research points to the use of sign language and pictures to aid in language development and language acquisition (Spencer et al., 2008). Many of the sign language interventions use videos as a modeling strategy. Spencer, Petersen, and Gilliam (2008) found sign language to be the most effective in increasing vocal communication with video modeling. However, it is important to note that these communications are not limited to sign language usage only, but the use of pictures or pictorial cues as well. As sign language is both visual and gestural, it has become the most viable approach affecting those who suffer communication delays (Toth, 2009).

It is necessary to combine multiple communication methods to develop social interaction and active communication. Carbone, Sweeney-Kerwin, Arranasio, and Kasper (2010) also

posited that the combination of the methods of vocal prompts and sign language have been shown to increase vocalizations. Situations in which sign language can be learned without direct instruction, such as using sign language simultaneously while providing a command or request such as using the sign for drink when giving the child a drink, allows children to "acquire a vast amount of language incidentally" (Valentino & Shillingsburg, 2011, p. 99).

Combining these with the use of spoken words leads to a total communication approach. In general, total communication is the use of many methods of communication in a combined effort to communicate functionally (Mirenda, 2003). Total communication, defined by State of Georgia Project for Assistive Technology (1991), is a situation in which the communication partner (teacher or parent) accompanies each picture or sign with the corresponding spoken word. Total communication is similar to aided language stimulation. Aided language simulation is a language stimulation approach in which the teacher points to pictures on a communication board, in conjunction with the verbalization of the same word. Total communication is a naturalistic intervention that combines the use of images, manual sign language, and spoken words in an effort to increase functional communication for preschoolers with autism.

Programs designed to include families have shown greater success, not only in the efficacy of the intervention, but also in the overall functional communication ability of the child and his family (Koegal, 2000). These programs focus on daily living skills and routines (Koegal, 2000). Parents, and their participation in the interventions, are vital to the success of any study or program.

Parental Involvement

Parents often get busy with daily tasks and just give the child what he wants, instead of allowing the child to verbalize his wants or needs and then respond to that child verbally.

Strategies that include “talking about the child’s focus of attention and responding to child’s verbal communication acts” are the basis for parental interventions at home (McDuffie & Yoder, 2010, p. 1037). A study to determine if parents can perform as interventionists using aided communication found that the usage promotes family engagement (McDuffie & Yoder, 2010). Parents of preschool children spend more time with the child than other adults and interact with a wider range of topics or functional communication settings. The parent can easily follow the child’s lead and respond in a variety of methods to focus attention and respond to their child’s wants and needs (McDuffie & Yoder, 2010). Follow-in commenting is a situation in which parental responds to a child’s focus of attention, that is, the parent describes the child’s play or behavior. Likewise, follow-in directing is a situation in which the parent narrates, then, requests a change in the play or behavior (McDuffie & Yoder, 2010). Responses to child communication acts demonstrates linguistic mapping in which the child’s presumed meaning is put into words by repeating and then adding words to the child’s verbalizations (McDuffie & Yoder, 2010).

The willingness of parents to be active participants in their child’s learning increases the child’s success rate. As illustrated in a study conducted at a hospital outpatient clinic at Stanford University in California, involving participants diagnosed with autism ranging in age from two to six years old and their parents. Researchers found that response training for parents is useful and beneficial in targeting language deficiencies in children with autism (Minjarez et al., 2011). This study mainly focused on the training of parents in a group setting as an effort to increase the child’s functional communication skills. Children involved in the study increased functional communication with their parents over the ten-week trial period (Minjarez et al., 2011).

Examination of parent-child interactions in a natural setting would provide information on the effects of the communication methods preferred and most naturally accepted by the participants (Shumway & Weatherby, 2009). Parent and child interactions in a natural setting provide information on communication profiles of children with autism (Shumway & Weatherby, 2009).

Summary

Special education should be a constantly changing program in which the teachers learn more about disabilities and strategies to use that benefit the student most (Biederman & Freedman, 2007). Since No Child Left Behind originated, all teachers, including special education teachers, are accountable to a higher standard that in the past (United States Department of Education, 2004). Children with special needs must show progress just the same as any other student (United States Department of Education, 2004). As teachers, we must implement interventions to help all students succeed. No Child Left Behind also addressed that teachers must find new practices to address these differing abilities and differing learning styles and modalities for students, including children with verbal disabilities (United States Department of Education, 2004). While we are aware of this, teachers require specific documents and instruments to use, as well as specific strategies laid out for them. According to research by Carbone, Sweeney-Kerwin, Arranasio, and Kasper (2010), the current sign language interventions have been successful in teaching not only deaf children, but those with developmental delays affecting language acquisition to communicate. While there is no cure for autism, early diagnosis, and early interventions will lead to improvements in communication abilities with those diagnosed with autism (Ospina et al., 2008).

Much of the research concerning communication interventions is quantitative in nature. However, researchers recommend that future research point to exploring the preferences of alternative communication strategies with children with autism (Carbone et al., 2010; Panerai et al., 2009; Pasco & Tohill, 2010). New studies following a qualitative design would increase the body of evidence concerning the use of communication strategy(Carbone et al., 2010; Panerai et al., 2009; Pasco & Tohill, 2010). Research has shown that many methods are successful in teaching children with autism to communicate; however the body of research is incomplete because it does not address the varying degrees of communication development in children with autism in a qualitative manner from a parent or teacher perspective.

In previous research, quantitative studies determined success of many treatments or interventions strategies in increasing communication with children with autism. However, as there are so many varied approaches, it has become difficult to identify or determine the most appropriate method for use with children diagnosed with autism (Brunner & Seung, 2009). Additionally, the choice of an appropriate instructional or treatment intervention for children with autism increases in difficulty as children on the autism spectrum have a range of communication deficits. In other words, no two children are the same and one intervention or treatment does not work for every child. A combination of treatments or approaches may prove to be most useful for preschooler children with autism (Brunner & Seung, 2009). Wilson (2012) revealed the "need for additional research examining the characteristics or skills that may predict what type of modeling if any is the most appropriate for students with autism"(p. 11). Prizant (1983) stated that children with autism do not have a lack of language; they simply do not yet possess a communication system that enables them to interact with family, teachers, and peers. Prizant (1996) explains that the amount of language or words that a child has acquired is not

necessarily the issue with communication for children with autism; but instead it is a matter of focusing the communication attempts and the rate at which the child communicates or interacts with others.

In order to provide a functional communication system for a child with autism, strategies must be implemented that include multiple methods, both verbal and non-verbal that allow the child to enter into a different communication system (Prizant, 1983). It is also important to note that as communication methods increase, students with autism develop social relationships with family members and peers as well as displaying an increase in behavior regulation (Tsakiris, 2009). Best practices for preschool classrooms include combination of movement, words, and pictures to aid in understanding of directions, concepts, and vocabulary (Lynch, 2003). Any strategy that is developed, must provide educational and learning support for the student, as well as those who implement visual and organizational supports, peer support and interactions, and a structured setting with positive experiences (Prizant, Weatherby, Rubin, & Laurent, 2003).

Early intervention alters life skills and quality of life in children with autism (Klin et al., 2004). Early interventions are critical for children with autism (Minjarez et al., 2011). Participating in intervention programs at a young age leads to long-term benefits (Bowker et al., 2011). One approach does not fit all children with autism (Bowker et al., 2011). Many children with autism have deficits in communication and social interactions. These skills are often taken for granted in typically developing children. However, it becomes a necessity that teachers must teach these behaviors or skills to some children who do not naturally learn or develop these skills. It is important that any intervention or strategy focus on gains in spontaneous communication, either in the use of pictures, sign language, or spoken words (Prizant et al., 2003). Additionally, these gains should increase social interactions with teachers, parents, and

peers. Finally, parent and teacher participation or cooperation in the implementation of a strategy will lead to success. Parents are a child's first teacher. In some instances, a parent may need interventions and support or resources to help ensure the success of a child. The necessity for interventions focusing on functional communication methods allows children with autism to develop a range of social and communication behaviors that enable them to better succeed in their world while also being able to functionally interact and communicate their wants and needs with their family and peers (Klin et al., 2004).

CHAPTER THREE: METHODS

Overview

The purpose of this qualitative transcendental, phenomenological study was to explore the experiences of using total communication methods, as explained by the parents and teachers of preschool children diagnosed with autism. In this study, I was interested in the exploration of the usage of total communication methods with children with autism in school and their home. An explanation of the chosen qualitative design, sampling, setting, data collections, and data analysis follows in detail.

Design

I implemented a transcendental, phenomenological, design to explain the essence of using total communication methods with preschoolers with autism. In general, a phenomenological research approach focuses on the shared experience of a group of people in order to gain a comprehensive understanding and description of the phenomena in question (Moustakas, 1994). More specifically, a transcendental approach is a design that focuses on acquiring and collecting information or data that describes the essence of an experience (Moustakas, 1994). Further, Moustakas explained a systematic process for analyzing the collected data concerning the participants' related experiences. I described the participants' experiences using a phenomenological analysis procedure resulting in a comprehensive understanding of an experience as outlined by those who are entirely engrossed in the phenomena (Moustakas, 1994). I chose transcendental phenomenology as the appropriate approach for this research as I sought to explore the meaning of the participants' experiences using total communication methods. This design provided an opportunity to explore the

experiences of children with autism who lack functional communication abilities as they use various total communication strategies as described by their parents and teachers.

Research Questions

Communication is the means by which one functions in social interactions, behaviors, and activities of daily living. The following research questions addressed the experiences of the participants in the study:

1. How do total communication strategies in the form of tacts and mands with reinforcers, influence the students' ability to communicate in a functional manner?
2. How do the total communication strategies reshape the child's social interactions and social learning?
3. What additional resources do the parents or teachers feel would enhance or provide scaffolding in the use of total communication strategies?

Setting

The study took place at Harris Elementary School, a pseudonym for an elementary school located in a rural area of North Georgia. It is important to note here that the local school system considers students in the special education preschool setting, that attend head start or daycare, part of the school system. The natural environment of the children includes their special education classroom, pre-kindergarten classroom, head start classroom, and/or the child's home. All of the children participated in the special education classroom. In addition, some of the students attended head start classrooms while others attended pre-kindergarten classrooms located in the elementary school. This site was chosen because of the increasing prevalence of preschoolers diagnosed with autism in this school district as compared with two surrounding school districts. Additionally, at this site, there were ten children, aged three to five, enrolled in

the preschool program for the 2014-15 school year meeting the criteria for inclusion in this study, while there were only five students with autism in the rest of the kindergarten thru fifth grades combined. Demographics of the elementary school are representative of the population of the county or school district. This is only one of two elementary schools serving the county. The ethnicity of the school is represented as follows: 93% Caucasian, 1% Hispanic, 1% African American, 3% Multiracial, 1% Native American, and 1% Asian (Based on October 2014 Power School Software report). The subgroups represented by the population is reported as 21% of the students in the school have disabilities; 17% of the students receive Early Intervention services, 0.6% of the students are gifted, and 0.002% represent the English Language Learners population, 63% are determined to be economically disadvantaged (Georgia Statewide Longitudinal Data System, 2012-2012 data) based on free and reduced lunch service. The current pre-kindergarten-fifth grade school population is 829 (Based on October 2014 Power School Software report).

Participants

According to Moustakas (1994), the criteria for selecting participants, for any phenomenological study is that they share the common experience, have an interest in the study, and are willing to participate in all the study activities. However, sampling procedures may vary when selecting a sample. The most common form of sampling is purposeful sampling, meaning that the researcher "must select a sample from which the most can be learned" (Merriam, 2009. p. 77). Creswell (2007) discussed purposeful sampling of convenience as a sampling method in which the researcher chooses the participants because they can purposefully provide an informed understanding of the research problem and the phenomena related to the study. He further explained that purposeful sampling is the method of establishing a set of required criteria for

inclusion in the sample. A criterion sample is essential in a phenomenological study so that all participants share an experience (Creswell, 2007).

Purposeful sampling determined the participants of this study. The participants included parents of students who meet the requirements of autism and lack functional communication abilities, in a developmental preschool classroom, as well as the, teachers, paraprofessionals, and speech therapist who works with these children at Harris Elementary School. Because the participants all share the same experiences relating to autism and non-verbal communication, they provided rich information relating to the topic.

The recommended sampling size for a phenomenological study can range from one participant to hundreds (Creswell, 2007). Throughout the research, I referred to the teachers, paraprofessionals, and speech therapist collectively as teachers or professionals. The participants of this study were eight professionals and five parents. To protect the confidentiality of the participants of the study, I assigned pseudonyms.

Procedures

The first step in conducting any research project is to gain permission from the school superintendent to conduct the study. The next step was to seek Institutional Review Board (IRB) approval (See Appendix A for IRB approval). Following IRB approval, I completed a pilot study in which two parents completed the Preschool Language Scale™-5 Home Communication Questionnaire(PLS™-5 HCQ) and participated in an individual interview (See Appendix G for Parent Interview Questions). Two teachers participated in a focus group (See Appendix I for Focus Group Prompts). The purpose of this pilot study was to determine if the questionnaire, interview questions, and focus group prompts were appropriate for the participants as well as to determine if the interview questions actually provided responses that answered the research

questions of the study. Concurrently, I asked the special education director to review student records to identify parents and teachers of students meeting the criteria for this study. The special education files verified the diagnosis and functional communication range of the preschoolers. After determining a list of possible participants, I assigned pseudonyms to maintain confidentiality. This compiled list of parents and teachers of preschoolers with autism formed the recruitment pool. IRB consent forms (See Appendices B and C for Consent Forms) were hand delivered to each potential participant.

Prior to collecting data, I bracketed out my own thoughts and bias concerning communication methods. This is part of Moustakas' (1994) data analysis, but must be completed prior to and after collecting data so that the researcher is looking at the essence of the experience through the lens of the participants instead of being clouded by self-perceptions.

It is also important to note here that the use of pictures, signs, gestures, and spoken words or total communication, has been in place in the classroom, during therapy sessions and in homes for three years. I previously, provided parents and professionals with signs, pictures, and gestures, as well as instruction to implement this communication method. These were the most common functional words that are used in both the school and home environments. These words included eat, drink, more, all done, sleep, stop, yes, no, sit, potty, and so forth. Sample current communication pictures with words and sign language were created using Boardmaker® software and are included in Appendix D. Permission to use Boardmaker® software is included in Appendix E. Once I collected all consent forms, the data collection process began.

Upon the initiation of the data collection period, the first step was to request that the parent participants complete a PLS™-5 HCQ in order to gain a greater understanding of the current communication methods in use in their homes and to establish initial themes in the data.

Upon return of the questionnaires, I scheduled an individual interview with each parent participant. The parent interview consisted of open-ended questions (See Appendix G for Parent Interview Questions). Focus groups involving the teachers, paraprofessionals, and therapist formed the remaining data collection method to be completed. During the focus groups, I asked guiding questions and allowed dialog to ensue (See Appendix I for Focus Group Questions). I completed all data collection that included the home communication questionnaire, parent interviews, and professionals' focus groups in a four-week period. Focus groups occurred on multiple dates to accommodate all the participants. All parent interviews and professionals' focus groups were audio-recorded using Audacity on my laptop so that I had a record of statements made during the interview. The back-up devices were my iPod and iPad. I transcribed each type of data immediately after collection (See Appendix O & P for sample transcripts). I employed memoing when reviewing the data, then followed with data analysis as described in Moustakas'(1994) phenomenological model (See Appendix Q for Sample of Memong).

The Researcher's Role

In qualitative research, the researcher acts as the human instrument (Lincoln & Guba, 1985). It is the role of the researcher to interact as a part of a qualitative study. The researcher is interested in understanding the particular topic of interest. It is the goal of the researcher to interact with the participants to gain this understanding.

Currently, I am the special education teacher of record for the children included in this study. I also oversee the instruction of the students provided by the paraprofessionals and therapist located in the school setting, as well as providing support for teachers at local Head Start, pre-kindergarten, and daycare centers. Additionally, I am the direct supervisor of the

teachers and paraprofessionals who work with these students at the site of the study. However, I will not be included as a participant in the study.

Data Collection

Moustakas (1994) recommended that prior to conducting any data collection, the researcher should undergo a process known as *epoche*. *Epoche* refers to the process of "setting aside our prejudgments, biases, and preconceived ideas about things" (Moustakas, 1994, p. 85). The researcher must set aside her common beliefs and thoughts about an experience thus bracketing them before starting the data collection process (Merriam, 2009). The researcher must reach an *epoche*, or a new and fresh way of looking at the experience (Moustakas, 1994). An *epoche* simply means that the researcher looks at the experience in a new way instead of always using the same, everyday ways of viewing an experience while completely ignoring anything not involved with the immediate experience of the phenomena (Moustakas, 1994 Husserl, 1927). The researcher must explain the experience remaining true to that experience without any over-clouding of personal prejudice (Moustakas, 1994). Moustakas(1994) further explained that the researcher must bracket herself out of the situation in that the researcher views are made as clear as possible as the researcher enters into the world of the participants, viewing the experience through their eyes only. The researcher must be receptive to new various, differing, or unique perspectives on the experience (Moustakas, 1994). In this process, I reflected on my own experiences as a classroom teacher. I wrote a narrative that describes my experiences with total communication methods, non-verbal students, functional communication, social interactions, my own perceived obstacles, resources I have needed throughout the implementation process, as well as any other thoughts or perceptions that may cloud my thinking

(See Appendix N for Personal Experiences Sample). In this way, I cleared my head of my thoughts, and allowed for new information from the participants relating to their experiences.

Creswell (2007) recommended at least three data collection sources in a qualitative study in order to provide a thick rich description of the data. Lincoln and Guba (1985) explained that triangulation is a method using multiple sources of data to ensure validity. According to Yin (2014), triangulation is "the convergence of data collected from different sources, to determine the consistency of a finding" (p. 241). Grounded in both the theoretical framework and literature of the study, the choices for data collection should provide insight to answer each research question (Creswell, 2007). As such, the data collection methods provide evidence to answer the research questions concerning total communication, grounded in the literature, and in work of Skinner (1938, 1957), Bandura (1977), and Vygotsky (1934, 1935). These theories collectively explain that communication is a socially learned behavior through the implementation of reinforcements via operant conditioning and the use of scaffolding and support in the form of pictures, sign language, and words in an attempt to gain an independent functional method of communication (Bandura, 1977; Skinner, 1938, 1957; Vygotsky, 1934, 1935).

A structured questionnaire, PLS™-5 HCQ (Zimmerman, Steiner, & Pond, 2011) intiated the data collection process in order to obtain specific demographic information about each child, as well as the means of communication each child employs in a natural home setting. Moustakas (1994) suggested that in a phenomenological study, the interview is the primary data collection method. In this study, I implemented two types of interviews. I completed individual interviews with parents and focus groups with teachers, paraprofessionals, and therapist. Each parent participated in one individual interview. Upon completion of the parent interviews, teachers, paraprofessionals, and therapist participated in one focus group interview. There were

two focus groups as determined by the scheduling demands of each participant. Both the interviews and focus groups provided information concerning the experiences with total communication, answering the research questions concerning social interactions, functional communication, and needed resources.

I implemented the PLS™-5 HCQ, individual semi-structured interviews, and focus groups throughout this study over a four-week period of time. Parents completed the home questionnaire first, followed by the completion of the parent interviews and teacher focus groups. The interviews and focus groups were audio-recorded and then transcribed immediately. The home questionnaire provided some basic information concerning the types of communication that are currently in use in the home, as well as some of the communication methods used in the past. This also provided some demographic information such as how many people live in the home, types of activities that the families engage in, and who interacts with the child on a daily basis including family members, daycare, head start teachers, pre-kindergarten teachers, or others. After gathering this information from the parents, I conducted an individual parent interview using the designed interview questions providing more in-depth information to answer the research questions from a home prospective. Finally, the professionals who work with the children provided the final information concerning total communication usage in the school settings in a focus group interview.

Preschool Language Scale™-5th Edition, Home Communication Questionnaire

I used a structured, home communication questionnaire in this study. Pearson granted permission to use this instrument in my study (see Appendix F for Permission to Use). Parents participating in the study completed the PLS™-5 HCQ (Zimmerman et al., 2011), in which they were given prompts concerning functional communication tasks, and then required to provide

additional responses to demonstrate the task. The parents completed this written questionnaire at home and returned to school. This questionnaire was chosen because it a standardized tool that has been found to be a reliable and valid means to provide brief demographic information, as well as evidence concerning the child's current functional communication methods and social interactions, or other observable communication behaviors. The questionnaire was the first data collection tool given to the parents in order to provide both demographic information and a basic understanding of the communication level of each child represented in the study. Additionally, this provided parents with a basis for thinking about experiences with communication.

The PLS™-5 HCQ was developed by Pearson (Zimmerman et al., 2011) as a means of identifying young children who have a language delay or disorder. The home communication questionnaire focuses primarily on preverbal skills such as attention to the environment and those in it, play, vocal development, social communication, and gestures. Administration of the PLS™-5 HCQ was normed for children birth to age seven (Zimmerman et al., 2011). In order to achieve standardization, 189 clinicians, in 42 states in the United States, collected research. Over 1800 children were tested to create standardization and to establish reliability and validity from December 2009 through August 2010 (Castille, 2011). Children with disabilities were included in the demographic sample of the test group. Additional demographic information focuses on ethnicity/race with 14% of the sample representing African Americans, 4% Asians, 23% Hispanic, 55% White/Caucasian, and 4% Other, not specified ethnicity or race (Castille, 2011). The sample regions in the United States represented 19.7% in the Northeast, 19.9% in the Midwest, 36.4% in the South and 24% in the West (Castille, 2011). Validity studies consisted of clinical studies of children ages one to two years, eleven months with language delays; a language disorder study for children ages three years to seven years, eleven months;

sensitivity/specificity studies; and positive/negative predictive assessments (Castille, 2011). Reliability studies focused on inter-rater reliability at .95 and .98 and Inter-scorer agreement at .91 and 1.0 (Castille, 2011). In the inter-rater study(n=54), for ages birth though three years, eleven months, auditory comprehension was significant at .96 and expressive communication was significant at .99, for a total language score of .98 (Castille, 2011). Case studies regarding the development of the PLS™-5 HCQ focused on autism and hearing impaired children (Castille, 2011). Extensive bias review and widespread testing with a diverse sample resulted in the creation of the Home Communication Questionnaire (Castille, 2011). It provides a familiar home context and vocabulary, as well as allows for dialectal, regional, and cultural variations to targeted responses. It assesses developmentally appropriate skills in the natural environment for young children.

After gaining consent from the parents, this questionnaire was hand delivered at head start or the preschool classroom, to the parents who agree to participate in the study. It should have taken the parents approximately 15-20 minutes to complete. I asked parents to mail or hand-deliver the questionnaire to me after completion. This questionnaire provided some basic information relating to the changes in a child's functional communication methods and social interactions.

Individual Parent Interviews

As stated earlier, interviews were the primary collection method for phenomenological research (Moustakas, 1994). Usually, interviews in phenomenological research tend to be more open-ended than the structured home questionnaire. The semi-structured interviews used in this study allowed the parent participants to explain their experiences fully.

For this current study, I developed open-ended interview questions (see Appendix G for Parent Interview Questions). Prior to using these interview questions, I conducted an expert review to determine content validity and to establish the reliability and clarity of the questions. I asked two teachers, who are also parents of children with autism who are non-verbal, to participate in this expert review of these questions. One reviewer holds an associate degree in Early Childhood Education and has seven years' experience teaching pre-kindergarten, with preschoolers with autism included in the regular education setting. The other reviewer holds a master's degree in Special Education and certified in both Special Education and Early Childhood Education. She has been teaching in both regular education and special education classrooms for seven years as well. This teacher teaches children with autism in a self-contained setting. Both expert reviewers pointed out some typographical and grammatical errors. In addition, the second reviewer made suggestions concerning word use that increased the clarity of the questions. I made changes to the questions based on the expert review.

I encouraged the parent participants to describe experiences using as much detail and textural language as possible, to include feelings, experiences, reflections, and current thoughts. After completion of the home communication questionnaire, I scheduled individual parent interviews to fit the parents' schedules. The parent interviews occurred in the school setting. Each interview session lasted approximately one hour. The interview was audio-recorded using Audacity on my laptop and backed up with the recorder on my iPod or iPad. Throughout the interview, I made notes using the Interview Notes form (see Appendix H for Sample Parent Interview Notes). Immediately following the completion of the interviews, I transcribed the audio recordings and then the interviewee checked the accuracy of the transcription.

Parent Interview Questions

Total communication in the home

1. Please describe your experiences in using a total communication approach in your home with your child who has autism and is non-verbal.
2. Please discuss any problems you may be facing due to lack of communication abilities/delays.
3. Please describe any changes your child experienced concerning communication since beginning the use of a total communication approach.
4. How would you describe your child's ability to communicate as compared with his friends or siblings?
5. Please explain how you and your child communicate most often and how has this changed since using total communication methods.
6. Describe your experience when your child has difficulty with making wants and needs known.
7. Please describe social interactions you have observed with your child and siblings or other friends.
8. Please describe any other concerns to make using total communication more successful.
9. What other comments, suggestions, or recommendations you would like to mention about using total communication at home with your child?

Interview questions one through six addressed the effect of total communication strategies and provided data for the first research question. Total communication strategies have shown to "help to accelerate language development and social skills by increasing functional communicative interactions" (Harjusola-Webb & Robbins, 2012, p.109). Symon (2005)

conducted research concerning parents acting as a trainer to implement a communication strategy for children with autism. Her findings revealed that not only did functional communication skills increase, but other non- targeted skills increased as well. Social interactions were one of these other non-targeted skills in Symon's (2005) study.

Interview questions six and seven helped to illustrate how total communication strategies influenced social interactions and provided an answer to research question two. Strategies that are rooted in naturalistic intervention methods provide situations in which positive interactions may lead to improved social communication and social interactions in general (Harjusola-Webb & Robbins, 2012). Additional research highlights the finding that there is carryover for social skills learned with a parent to a child's social interactions with others (Symon, 2005).

Finally, interview question eight highlighted the last research question, that is, the need for additional resources that parents may need to make communication more successful in their home. The use of visual supports is often difficult for some parents to implement in the home setting consistently (Hayes et al., 2010). Not only do parents tend to have difficulty with consistency, there is also the extra burden that the employment of a new strategy places on the entire family (Hayes et al., 2010). Parents are often in need of additional training and support to apply strategies in the home (Hayes et al., 2010; Symon, 2005).

Focus Groups

A focus group is a type of interview in which a group of people talks about a specific topic as defined by Creswell (2008). Within the context of qualitative research, a focus group will attempt to focus on one topic with a group of people who have knowledge of that topic according to Merriam (2009). "Focus groups work best for topics that people could talk about in their everyday lives, but don't" for whatever reason, (Mcnaughton & Myers, 2007, p. 65). Focus

groups provide the time and place for these conversations. The researcher asks few questions; the group members will then lead the conversation. These focus groups provided a dialog in which I prompted the participants to guide the conversation while I listened and guided the conversation (see Appendix I for Focus Group Questions).

In this study, teachers and professionals, who work in an educational setting with the children of the parent participants, participated in one of the two focus groups. The focus groups took place in the elementary school setting. Each focus group lasted approximately one hour. These focus groups were audio-recorded using Audacity on my laptop. I collected field notes during the focus group in order to assist in the transcription of the recordings, in the event that the professionals speak out over each other or speak at the same time. Since there were teachers at multiple sites and therapist who work on alternating days, I scheduled multiple dates for the focus groups to accommodate all professional participants. A minimum of four professional participants were included in each focus group. I conducted these focus groups after the parent interviews were completed and they were scheduled in a manner that accommodated a range of four people in each group. I asked the same questions at each focus group session. The dialogue that ensued led to further questioning or prompts in order to establish a deep understanding of the responses that related to the research questions. I took notes during the focus groups using notes sheets found in Appendix L. These focus groups were audio-recorded using Audacity on my laptop and backed up using the recorder on my iPod or iPad. I transcribed this data immediately following each session. The participants reviewed these transcriptions as a manner of addressing trustworthiness.

These focus group prompts provided answers to the research questions, grounded in the related literature related to communication strategies for preschoolers with autism.

Focus Group Prompts

Total communication in the school setting

1. How would you describe your students' ability to communicate as compared with his peers?
2. Explain how you and students with autism in your classroom communicate most often and how has this changed since using total communication methods?
3. Describe your experience when a child has difficulty with making wants and needs known.
4. Describe social interactions during play times or group learning times concerning the students in your classroom with communication delays.
5. Please describe any other concerns or needed resources to make using total communication more successful in the classroom.
6. What other suggestions, comments, or recommendations do you have to make this experience better for you and the students in your classroom?

Questions one, two, and three from the focus group prompts provided evidence concerning research question one. The information gained from these teacher responses highlighted the child's functional communication ability, while describing the strategies used to communicate, as expressed through the teacher experiences. When teachers focus on a child's opportunities to increase functional communication skills in the naturalistic classroom setting, the child develops communication skills while engaged in a self-selected activity (Harjusola-Webb & Robbins, 2012). Research indicates that there is a need to determine the quality of strategies implemented as well as the function of the communication skills of children with autism (Harjusola-Webb & Robbins, 2012).

I developed research question two to determine the influence of communication ability on social interactions. Focus groups prompt one, two, three, and four provided insight into the teachers' experiences and observations of social interactions that occurred during play and group learning experiences. Preschool classrooms are naturally social and communication rich environments (Harjusola-Webb & Robbins, 2012). The implementation of a total communication strategy will bridge the gap in the social interactions and communications that many preschoolers with autism exhibit as compared with their typically developing peers. Additionally, as social communication increases, disruptive or aggressive behaviors will decrease (Ganz et al., 2012). Current tools and instructional practices in use in some regular education classrooms present challenges to teachers, while failing to increase social interactions (Hayes et al., 2010).

Focus group prompts five and six provided answers to the last research question that refers to the additional resources needed to improve the use of total communication methods for preschoolers with autism. Teachers were able to express their needs concerning resources or obstacles faced while using total communication methods, as well as the impact that the total communication methods had on the child and the child's ability to communicate and become more functional. Research determined that the implementation of interventions increase a child's ability to communicate in meaningful ways in a classroom setting (Adams et al., 2012). However, many interventions may require additional resources in the form of monetary support, and professional development (Adams et al., 2012; McCollow, Davis, & Copland, 2013). McCollow and colleagues explained that few special education teachers and even fewer general education teachers have knowledge of the core practices necessary to provide instructional strategies for children with autism in a school setting (2013).

Data Analysis

Data analysis procedures in qualitative research are the methods that the researcher employs to gain meaning from the collected data (Creswell, 2007). The data collected should provide answers to the research questions. This data analysis will lead to answering the research questions concerning the total communication experiences of the participants. The method follows Moustakas' (1994) phenomenological model including *epoche*, phenomenological reduction, imaginative variation, and synthesis of composite textural and composite structural description. I employed Atlas.ti©, a qualitative data analysis software program, to manage and store data, as well as to aid in the coding process (Friese, 2014). This qualitative data analysis software program allowed me to upload data onto a computer, store the data in a digital format, assign codes, establish themes, and then sort the information based on my instructions. I used the coded information to begin to develop conclusions about the essence of the experiences.

Transcription

Prior to the analyzing the data, I transcribed the audio recordings of the individual interviews and focus groups. A transcription of the data provided a written form of the dialog of the interviews and focus group conversations, including all spoken words and actions that occurred. I personally transcribed the audio data immediately following each interview and focus group session. This provided a written copy of the dialog during the interviews and focus groups with which to begin data analysis (see Appendix O & P for Sample Responses). I entered these transcriptions and audio recordings into Atlas.ti© to assist with data management and the coding of the collected data. Coding is a method of organizing the data into themes or topics as explained in Moustakas' (1994) phenomenological reductionism. Memoing, as described by Creswell (2007), is a process of making notes while reviewing data. As I read, I made notes or

phrases at the bottom of the transcriptions. I completed this process electronically using the Atlas.ti© software that allows the addition of comments at the bottom of each transcription (Friese, 2014). A sample of this is included in Appendix Q. This occurred throughout the data collection period. I coded significant statements or phrases that answer the research questions following the method in phenomenologocal reductionism.

Epoche

I again revisited my own thoughts and perceptions concerning the experience of using total communication in the classroom. This allowed me to once again set aside my own experiences and look at the data related by the participants with a fresh outlook (Moustakas, 1994). This was a constant process of setting aside what I thought to focus on the participants' points of view. This allowed me to see the experience through the participants' eyes. I described my own beliefs, expectations, and experiences before I began analyzing the experiences of others.

Phenomenological Reductionism

Phenomenological reductionism is a qualitative data analysis method for phenomenological research (Moustakas, 1994). In this type of data analysis, the researcher is looking at things as they appear, but also looking at them in a reduced, horizontal, or equal manner (Moustakas, 1994). The researcher looks at each questionnaire, individual interview transcription, and each focus group transcription individually. The first step as described by Moustakas (1994) is to bracket out the topic, that is to find the statements that focus on the experience while setting aside everything else so that the research topic remains at the fore-front. Horizonalization is the next step. In this step, I treated each statement that reflected the topic equally as a representation of the experience (Moustakas, 1994). I removed those statements that

do not reflect the topic or those that are overlapping leaving only the "textural descriptions" of the experience or horizons (Moustakas, 1994 p.96). Next, I clustered these horizons into themes and organized them to provide an in-depth understanding of the experience (Moustakas, 1994). Atlas.ti© software helped in the organization and management of this data. This textural description is not just a description of the experiences, but also a written sensory description of the shared experiences illustrating the phenomenon (Moustakas, 1994). This data was reviewed as a composite or whole, textural description of phenomena. These descriptions led to the essence of the experience from the viewpoint of the participants.

Imaginative Variation

Imaginative variation is the next stage of Moustakas' (1994) phenomenological model. The aim of imaginative variation is to compose a structural description of the experience (Moustakas, 1994). This refers to how the "experience of the phenomenon came to be what it is" and explains, "the 'how' that speaks to conditions that illuminate the 'what' of experience" (Moustakas, 1994, p. 98). Imaginative variation makes the invisible, visible (Moustakas, 1994). In this manner, the researcher uses her imagination to describe varying perspectives of the phenomena so that a structural description of the experience appears. Reflection, the use of imagination, and the acceptance that anything is possible provides this structural description. The researcher is able to derive structural themes from the evidence discovered in the textural descriptions found in the phenomenological reductionism stage (Moustakas, 1994). Moustakas outlined steps to follow to complete this process (1994). These are (a) varying the structural meanings that underlie the textural meanings; (b) recognizing the themes that explain the phenomena; (c) consideration of the universal structures that may cause specific feelings and thoughts influencing the phenomena such as relation to self, time, bodily concerns, or relation to

others; and (d) searching for exemplars that illustrate the structural themes and the development of the structural description. Repetition of these steps for each participant response, as well as a composite look at the data as a whole provided the imaginative variation.

Synthesis of Meanings and Essences

Synthesis of meaning and essences is the final stage in Moustakas' (1994) model of phenomenological data analysis. This is the step in which the textural and structural descriptions are united to form a representation of the essence of the phenomena as a whole. These essences describe what is common, the specific qualities that make the essence unique (Moustakas, 1994). A synthesis of the meanings of the phenomenon was developed.

Trustworthiness

Researchers have sought means for maintaining rigor while conducting "real-world" research (Lincoln & Guba, 1986, p. 15). Lincoln and Guba (1986) set out to establish criteria for deeming real world or qualitative research as rigorous. They referred to this set of criteria as trustworthiness that is the parallel to rigor in quantitative studies (Lincoln & Guba, 1986). They identified the four means of establishing trustworthiness. These are transferability, dependability, confirmability, and credibility (Lincoln & Guba, 1986). These criteria insure that the qualitative study is of good quality and noteworthy for the reader.

Credibility

Credibility is similar to internal validity in quantitative research as explained by Lincoln and Guba (1986). Credibility assures that the participant's comments and views are represented in the findings are accurately represented by the researcher. Lincoln and Guba (1985 & 1986) suggest member checks and triangulation as two possible means to establish credibility. I achieved credibility in this study through member checks, peer reviews, and triangulation.

Member checks refer to the continual checking of the responses with the participants to ensure the accuracy of the reconstruction of the evidence (Lincoln & Guba, 1986). In order to check the data, I gave each parent participant the opportunity to review their own transcribed interview data. In the same manner, I gave each professional the opportunity to review the transcriptions and field notes from the focus group from which they participated. These methods ensured the results are credible and are an accurate description of the data represented.

Upon my analysis of the data, I asked two outside professionals with experience in working with children with autism to examine the results. I sought professionals who possess a certification in special education and who have experience in teaching children with autism. These professionals reviewed and provided feedback on my data analysis. This process ensured that my analysis was free of bias and focused on bracketing out my own thoughts and experiences and only focused on those of the participants.

Triangulation involves using multiple sources of data to make the study "believable," (Lincoln & Guba, 1985, p. 306). This ensured that the data was valid in the study (Lincoln & Guba, 1985). In this study, I included three data collection sources, a questionnaire, parent interview, and focus groups, as a means of triangulating data. This allowed for multiple methods of collecting data, as well as multiple perspectives concerning the phenomena of total communication.

Transferability

Transferability is similar to external validity in a quantitative study. Transferability is described as the ability of the data to be transferred to another situation, context, or setting so that the information in the study can be applied elsewhere (Lincoln & Guba, 1986)). In this study, transferability was attained using thick, descriptive data. Lincoln and Guba (1986)

defined thick, descriptive data as a narrative explanation of the similarity that others may make in order to apply the findings to another situation, although the thickness of the data is not clearly defined. The thick, descriptive data in the study allowed an in-depth description of the experiences of the participants concerning the use of a total communication method. This descriptive data lead to a detailed, narrative summary of the experiences of the participants as outlined in the findings. It is the reader's responsibility to examine the research and determine if the findings are transferable to another situation (Merriam, 2009).

Dependability

Lincoln and Guba (1986) explained that dependability is similar to reliability in that it deals with the consistency addressed using a description of rich details about the design of the study. Dependability refers to the process that the researcher undergoes to carry out the research plan, maintaining documents to back up these statements, and making sure that the data exists. A description of the data collection and analysis process aids in achieving dependability. Lincoln and Guba (1986) suggest the use of an audit trail to maintain dependability in a study. An audit trail is an "evidentiary chronology of research activities, including field notes, questionnaires, transcriptions for focus groups, coding efforts, data analysis activities, and other information relating to the completion of the study," (Creswell, 2007, p. 291). The data collection documents, as well as the data analysis process, was reviewed by an outside reviewer in order to establish that that the consistency of the data. I implemented a data collection timeline to secure the audit trail for this study (See Appendix K for Timeline Audit Trail).

Confirmability

Similar to objectivity, confirmability establishes that the data and statements exist and are free of researcher bias (Lincoln & Guba, 1985). Lincoln and Guba (1986) suggest that the

appropriate criterion to determine confirmability is an audit trail. In this case, to establish confirmability, the outside reviewer focused on the product instead of the process (Lincoln & Guba, 1986). The reviewer confirmed the data and findings. I implemented the audit trail again using the data collection timeline in Appendix K.

Ethical Considerations

Ethical considerations in a study provide for the protection of the participants involved in the study as well as to ensure the trustworthiness of the study (Merriam, 2009). IRB approval was the first step in ensuring the ethical treatment of the participants. Confidentiality is the most important ethical consideration in a study involving special education children. I protected the identity of each participant, as well as the site with the use of pseudonyms. At the beginning of each interview and focus group, I reminded the participants that the information discussed was confidential. Additionally, I did not discuss any information gained from this study with others. Interview notes, focus group notes, home questionnaires, audio recordings, and transcriptions were stored in a locked file cabinet. I accomplished additional security of the data with password-protected computers. Additionally all records (both hard copies and digital) will be maintained on site for three years in a locked file cabinet then will be destroyed by shredding.

Summary

I designed a phenomenological study to explore the use of total communication methods for preschoolers with autism and their caregivers. The study occurred in a rural area of North Georgia. The site was chosen due to the recently increasing number of preschoolers with autism entering the school. I recruited participants using purposeful sampling to ensure that all the children in the study are those with autism.

Three research questions focused on the use of total communication methods. These questions guided the study in that the data gathered provided answers to these questions. I employed three tools to collect data. These were a Preschool Language Scale™-5, Home Communication Questionnaire, parent interviews, and focus groups for teachers, paraprofessionals, and therapist. I analyzed the data using methods recommended by Moustakas (1994). These steps in the data analysis process are to establish the *epoche*, memoing, and phenomenological reductionism. The Atlas.ti© software program and audio recordings are the technological instruments used to assist in the analysis of the data.

It is important in any study to ensure that the information in the study is trustworthy. The data must be credible, transferable, dependable, and confirmable (Lincoln & Guba, 1986). Member checks, peer reviews, and triangulation accomplished credibility. The data proved transferable with thick, descriptive data. The utilization of an audit trail determined dependability and confirmability.

Ethical considerations were established to protect the participants of the study. I established confidentiality of the data by keeping it in locked and password-protected files. I will maintain the data for three years, and then shred and delete all related documents.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this transcendental phenomenological study was to explore the total communication experiences of preschoolers diagnosed with autism as described by their teachers and parents at Harris Elementary School. Total communication is a method of teaching communication skills using multiple strategies that promote functional communication skills both in the home and school settings. The total communication strategies implemented consist of verbalizations combined with sign language and picture cues to promote functional communication. In order to understand the experience from the point of view of parents and professionals who interact with preschoolers with autism, I posed the following research questions:

1. How do total communication strategies in the form of tacts and mands with reinforcers, influence the students' ability to communicate in a functional manner?
2. How do the total communication strategies reshape the child's social interactions and social learning?
3. What additional resources do the parents or teachers feel would enhance or provide scaffolding in the use of total communication strategies?

In order to determine the teacher and parent perceptions of their experience using total communication, I collected and analyzed data based on participant perceptions. After the collection and analysis of the data, textural and structural description of the experience led to a thick, rich description using participant statements to answer the research questions, thus reaching meaning and essence of the overall experience. The participant profiles that follow

provide an introduction to the parents and professionals who provided these descriptions of their experiences

Participants

I invited parents, teachers, paraprofessionals, and therapists who work with preschoolers with autism to participate in the study. Upon review of student records, it was determined that the children in the preschool classroom, whom the professionals and parents are referencing in this study, had no receptive or expressive language skills upon initial evaluation and entrance to the preschool program. These students did not respond to their name, or any type of verbal directions, commands, or questioning. Additionally, they did not make requests known using any means of communication. Finally, these students had no social skills, in that they did not interact with parents or peers, and did not play with toys or other types of physical games. These students simply wandered around the classroom dumping out toys, and did not appear to notice that other children were around them.

Profiles of Professional Participants

Eight professionals agreed to participate in the study to describe their experiences using total communication. The professionals have a wide range of experience and education, but they all work with preschool children with autism. Information concerning the job title, years of service in the field of education, and the length of time each participant has implemented total communication is contained in Table 1 below. Following this table, I described each professional participant in narrative form.

Table 1

Professional participants

Participant	Job Title	Educational experience in years	Length of Time Implementing Total Communication
Ann	General education paraprofessional	5 years	3 years
Abrielle	Special education paraprofessional	6 months	6 months
Caroline	General education lead teacher	3 years	3 years
Danielle	Special education paraprofessional	9 years	9 years
Dawn	General education paraprofessional	13 years	4 years
Kay	General education paraprofessional	8 years	3 years
Lynne	Special education paraprofessional	1 year	1 year
Mary	Speech therapist	16 years	16 years

Abrielle. Abrielle is a new paraprofessional with only six months' experience. She holds an Associate degree in Medical Assisting and a paraprofessional certificate in education. She currently works in a self-contained developmental preschool classroom comprised of students with disabilities. She began using total communication upon beginning employment in the special education setting. When asked about the communication methods of children in the classroom where she works, she described that the students use "sign language, pictures, and few words" (Abrielle, personal communication, 2015).

Ann. Ann has five years of experience as a paraprofessional in a pre-kindergarten classroom. Ann holds a Bachelor of Science degree in Business Accounting as well as a paraprofessional certificate in education. Her experience includes teaching typically developing students as well as students with disabilities in an inclusion pre-kindergarten setting. She implemented sign language and picture cards paired with verbalization in the general education classroom in an effort to increase communication. She explains one example of implementing total communication in her classroom, "We say the word and show the picture, and sometimes the stop sign (sign language). I use the sign for stop and the verbal word and the picture so they have gotten all three" (Ann, personal communication, 2015).

Caroline. Caroline works as a certified lead teacher in a pre-kindergarten classroom and has done so for three years. She obtained a Bachelor of Science in Early Childhood Education. Her teaching experience includes typically developing students as well as students with disabilities in the inclusion setting. She implements strategies to increase communication skills of her students such as sign language and picture cues. She stated,

> We use the picture cards a lot and they seem to work and if we don't use them for transitions, he [referring to a one particular student] has meltdowns and we have a hard time getting him back into the routine. (Caroline, personal communication, 2015).

Danielle. Danielle currently works in a developmental preschool, serving students with disabilities. She has nine years' experience working in this preschool setting as well as an inclusion preschool classroom serving a majority of students with disabilities. She holds an associate degree in Special Education, as well as a paraprofessional certificate in education. She is currently pursuing a bachelor's degree in Special Education. Danielle has experience using a variety of communication strategies with non-verbal special education students. She has been

using total communication strategies for nine years. She elaborated, "We use sign language and lots of pictures to go with the verbal directions and routine throughout the day" (Personal communication with Danielle, 2015).

Dawn. Dawn performs her job duties as a paraprofessional in a pre-kindergarten classroom. Dawn holds an associate degree in Early Childhood Education and a paraprofessional certificate in education. Currently, she is pursuing a Bachelor of Science degree in Early Childhood Education. She has thirteen years of experience in the pre-kindergarten setting. Students with whom she has worked include typically developing and those with disabilities. Over the past four years, Dawn worked to implement total communication methods in the inclusion classroom. She explains her use of total communication in the classroom, "we use pictures and signs (sign language) to model behaviors during the day. It really helps not to have a meltdown" (Personal communication with Dawn, 2015).

Kay. Kay is another pre-kindergarten paraprofessional. She holds a paraprofessional certificate in education as well as an associate degree in Early Childhood Education. She has been working in this classroom with typical and special needs students for eight years. Kay is also the parent of a non-verbal teenager with autism She has experience using many types of communication strategies, not only in the classroom with her students, but as a parent of a child with autism. She uses picture communication primarily, but adds sign language with some students. She expands her usage of this intervention, "we have used some things for behavior. Just some pictures that describe the behavior and help students understand what we are expecting in the class" (Personal communication with Kay, 2015).

Lynne. Lynne works in a special education preschool classroom. In college, she earned an associate degree in Medical Assisting, and then obtained a paraprofessional certificate in education. She has one year of experience working with preschool children in the special education setting. She described the communication abilities of the students with whom she works, "non-verbal, do not use words to communicate wants and needs" (Personal communication with Lynne, 2015). During this time, she learned to use sign language and pictures to communicate with non-verbal students.

Mary. Mary is a speech pathologist currently working with preschoolers. She has 16 years of experience as a speech pathologist in a variety of settings that range from preschool through high school as well as in medical faculties with adults. She holds a master's degree in speech pathology. While in college, she focused on sign language as a minor and took courses related to sign language and deaf education. She implements this knowledge of sign language with pictures in all her speech therapy sessions with preschoolers to increase verbal responses with her students. She clarified the communication abilities of students with autism, "I think we are thinking of the severe non-verbal autistic kids but there are some that actually communicate but they just have some delays, don't always know how to use their words and would rather grab or pull, you know before they try to communicate" (Personal communication with Mary, 2015).

Profiles of Parent Participants

The parents participating in the study all have children with a diagnosis or suspicion of autism who are functionally non-verbal. The parents observed the usage of total communication methods by teachers or early intervention service providers. The parents have also received instruction and materials to implement this method in their home.

Table 2

Parent Profiles

Participant	Parent/child Relationship	Number of members in household	Length of time implementing total communication
Jillian	Great grandparent	4	2 years
Katie	Mother	5	7 months
Ken	Father	4	1 year
Sharon	Mother	3	7 months
Tara	Foster mother	10	2 months

Jillian. Jillian is a great-grandparent and legal guardian of a four-year-old child formally diagnosed with autism at the age of two. Eligibility documents indicate that this child had no functional means of communication and exhibits delays in social skills upon entrance to the preschool developmental classroom. He wandered around the classroom dumping out toys. He made no eye contact and did not respond to anyone around him. His primary means of communicating was yelling and crying until it was determined what he wanted. Early intervention instructors introduced total communication to Jillian two years ago. She slowly began implementing total communication in her home. She understands and responds to her son's physical prompts and his beginning verbalizations. Jillian mainly uses verbalizations and objects with some pictorial representations and sign language to give directions and interact with her child.

Katie. Katie is the mother of a three-year-old preschooler. This child does not have a formal diagnosis of autism at this time, but the characteristics of autism are apparent based on eligibility documents. The child's pediatrician suspects autism and referred the family to a

developmental pediatrician. Mother reported that her child says a few family names and names some toys, but does not use words to communicate. He plays with trains in a repetitive manner and makes a train sound, but does not appropriately play with his siblings or other toys. I introduced total communication to Katie seven months ago. She began implementation at home. She stated, "We try with the pictures and we are learning some of the sign language pictures you gave us. We always talk to him" (Personal communication with Katie, 2015).

Ken. Ken is the father of a child, formally diagnosed with autism at age two. Reportedly, this child can speak many words, but does not use them to make requests or to converse with others. This child simply repeats movies, cartoons, or phrases previously heard. He occasionally plays alone with trucks but does not appear to notice other children around him. Ken and his family received instructions in the use of total communication methods a year ago. They currently use verbalization to interact at home. Ken said, "We talk to him and he talks back to us. We don't use pictures much but he is doing some of the sign language" (Personal communication with Ken, 2015).

Sharon. Sharon is the mother is a preschooler formally diagnosed with autism at age two. She reports that her child is non-verbal child. Little overall communication occurs. This child does not play with toys, adults, or peers. He does not seem to notice anything in the environment and does not respond to his name or any type of verbal conversation or interaction. This child wanders around dumping out toys and gives no attention to them. I shared materials and instructions to implement total communication at home eight months ago. She shared,

> Whenever we are at home with him we try to give him choices about things and make sure we verbally ask him hoping that he will answer, hoping that he will give us some idea of what he is wanting. Usually he will choose whether it is by touching something

> or walking to what he wants. But we always try to talk to him and show him sign language but he had rather use our hands to do it right now. (Personal communication with Sharon, 2015).

Tara. Tara is a foster parent recently awarded guardianship of a non-verbal child who also displays many characteristics of autism as described in eligibility documents. She began using total communication in her home to bridge the communication gap. She reports that this child only screamed and pointed at the time of placement in her care. He did not interact with any of the family members or with any toys. She elaborated,

> Uh well when he first arrived two months ago, we experienced a lot of screaming and pointing and so there was a huge gap in communication and understanding in our relationship. Not just our relationship but also his relationship with everyone else around him. My experience so far with the sign language has been very productive the picture communication has been productive as well. (Tara, personal communication, 2015)

Results

Themes

After I collected the data, I transcribed the interviews. I then described my own perceptions and thoughts concerning total communication. I analyzed the data using Moustakas' (1994) method for qualitative data analysis. The first step in this data analysis method called horizonalization was to look at each statement equally and determine relationship with the experience of using total communication. I uploaded all the data collection documents into the Atlas.ti© software. I coded all the statements, and created memos relating to the statements.

I completed the process of horizonalization by listing the participants' statements, sorting the ones that repeated across all data sets, and determining the statements that significantly

demonstrated the experience of using total communication. Next, I removed irrelevant statements that did not reflect on the experience.

I then reviewed each data collection instrument to determine any additional information relating to the themes. Finally, I asked the participants to review the transcripts for authenticity and to examine the list of identified themes. The participants felt as if the list of themes was a true representation of their responses. The themes, along with participant quotations, provided evidence and support to answer the research questions, explaining both parent and professional perceptions of the use of total communication methods with non-verbal preschoolers with autism. Participant quotations provided evidence and support of each statement. Following horizonalization, I grouped the statements into categories that led to the identification of themes in relation to the research questions and the phenomena shown in Table 3.

Table 3

Open-codes and themes

Open-Codes	Enumeration of Open Code Appearance across data sets	Themes
Receptive language	56	Joint attention Follow directions
Expressive language	99	Communicative attempts
Socialization	61	Play with toys Play with peers Play with adults Learning games
Needs/resources	18	Training materials

Note: Open-codes were analyzed using Atlas.ti©, a qualitative data analysis software program, to identify themes (Friese, 2014) (See Appendix L and M for List of Codes and Themes).

Research question one. Research question one sought to determine how total communication strategies using tacts and mands with reinforcers influence functional communication. Parent and professional responses indicated an increase in receptive language skills as well as an increase in communicative attempts. Participants applied operant conditioning, specifically, the use of tacts and mands, in that they provided sign language, pictures, and words then the preschoolers responded with an action or verbalization. In addition, the preschoolers used the sign, picture or word or a combination to request an item. Reinforcement for the behavior was provided when the child received or acted upon the request. General statements from parents were that communication skills have "gotten better" (Personal communication with Jillian, Katie, Ken, & Sharon, 2015).

When asked what changes she saw in her child, Tara specifically stated,

> My experience so far with the sign language has been very productive, the picture communication has been productive as well. Well, positive changes. We incorporated sign language and some picture communication and he is making a lot of progress. (Personal communication with Tara, 2015)

Special education paraprofessionals and speech therapist indicated improvements in both receptive and expressive language skills. General education teachers and paraprofessionals report an increase in receptive language skills specifically relating to understanding behaviors, transitions, and daily routines.

Receptive language. Total communication methods influenced the acquisition of receptive language skills including joint attention and following directions, as identified by the participants. Joint attention is a prerequisite skill for following directions. A child must be able to attend to a task before he will have the ability to follow a directive requiring completion of a

task. This ability to follow a directive or command demonstrates the implementation of one class of operant conditioning, the mand. When the child completed the task, teachers and parents reinforced the new behavior by giving praise upon completion. Professionals explained that the use of total communication methods has greatly changed the behavior of students when directions were given specifically during transitions, demonstrating that the reinforcement led to a change in behavior.

Joint attention. Joint attention is the ability to attend to a task along with another or to attend to the environment (Jones & Carr, 2004). Parents pointed out that their children have made progress in paying attention to their surroundings and activities in a joint effort. Parents indicated on the PLS™-5 HCQ that their child now attends to the environment by reacting to sounds, such as a door bell ringing or a door shutting, responding when the child's name is called, and looking at people who are talking (Personal communication with Jillian, Katie, Ken, & Tara, 2015). Sharon shared that her son

> did not notice anything; he just wondered around and touched things. Now, he does seem to notice things like if he drops food from his high chair or he will smile and look at us when we talk to him. (Personal communication with Sharon, 2015).

Jillian also reported that her son now will smile when she talks to him (Personal communication with Jillian, 2015). She went on to explain that he could now play with "his toy cars, and games like peek-a-boo, and throwing and catching a ball" (Personal communication with Jillian, 2015). Tara explained that when the Department of Family and Children's Services placed this foster son in her home, he had no verbal communication skills, only screamed, and pointed (Personal communication with Tara, 2015). She elaborated:

> He progressed to now being able to go on errands, look at books, and play learning games and physical play. He just watches the other kids. For instance, he saw kids playing in a little playhouse so his form of participation was to just go and sit there. He will also smile when she speaks to him and uses some verbal attempts, conversational turn taking attempts. (Personal communication with Tara, 2013)

Sharon described her son's ability to jointly attend and react to others:

> He will now laugh or giggle when he is tickled and he will sit near other children. He likes to watch them run and play. Sometimes he will walk to them and put his hand on them. He enjoys being around children and is also imitating them at Head Start. (Personal communication with Sharon, 2015)

Parents indicated that their child could now attend to a task or activity with the parent, as well as sharing in responses to actions such as smiling or laughing. Professional participants did not specifically speak of joint attention, but spoke to an increased ability to follow directions, which is a skill that cannot develop if joint attention is not present.

Following directions. All participants noted that the use of total communication provided a positive and substantial increase in the preschoolers' ability to follow directions. Many of the parents stated in general that their child understands more. On the PLS™-5 HCQ, parents reported that their child previously was non-verbal and did not show any understanding of directions or commands. On this same questionnaire, these responses from parents indicated that the preschoolers are now able to follow directions given "with gestures, words paired with gestures, words and simple phrases, and one part verbal directions, as well as pictures and sign language" (Personal communication with Jillian, Sharon, Tara, Katie, & Ken, 2015).

Jillian detailed her child's ability to follow directions:

> My child follows directions when I hold my hand out for him to him to hold, when I say no, no and while shaking my head, when I say words and phrases such as stop, or come here, and wait. He also does this with sign language like sit. That's about the only sign language thing he will respond to. (Personal communication with Jillian, 2015)

Tara described her child's ability to follow directions, "He will now wave bye-bye, will follow directions while I point at objects, when I say simple directions, and when I use pictures and sign language together with words" (Personal communication with Tara, 2015). Danielle noted that one student receptively responds to signs paired with words or pictures such as sit, all done, more, jump, play, drink, and stop (Personal communication with Danielle, 2015).

Following the daily routine was a major discussion topic for classroom teachers. "Gestures, pictures, sign language, and words "help them to understand," stated one teacher (Personal communication with Caroline, 2015). Professionals implemented sign language, pictures, and words when giving directions relating to the daily routine. Kay explains, "It helps students understand what we are expecting in the class" (Personal communication with Kay, 2015).

One example noted by Ann:

> The ones we use the most is to line up and we say the word and show the picture and the stop sign. I use the sign for stop and the verbal word and the picture so they have gotten all three. We use sign language and lots of picture to go with the verbal directions and routine throughout the day. We use the pictures and signs to model behaviors throughout the day. It really helps not to have a meltdown. (Personal communication with Ann, 2015)

Ann's co-worker, Caroline, further stated that the pictures help to understand what we are doing next and this helps them not to have a meltdown. "If we don't use them for transitions, he has meltdowns and we have a hard time getting him back into the routine" (Personal communication with Caroline, 2015).

Some parents also reported that their child now follows directions relating to the daily routine. Tara and Katie indicated on the PLS™-5 HCQ that their children could follow directions related to the daily routine. Additionally, Jillian explained, "He has gotten a lot better at understanding. When I say let's go get a dry diaper it doesn't matter where he is in the house, he takes off to go get on the bed to get it changed" (Personal communication with Jillian, 2015).

Following directions and following the daily routine are two receptive language domains in which parents and professionals alike have described progress. Parents positively stated that their child understands more now, while professionals report that the use of total communication eliminates meltdowns due to not understanding.

Expressive communication. Parents and teachers indicated that there are specific communication attempts that led to increased expressive communication. While some of these attempts may appear to be minute to some, from the perspective of professionals and parents, these increases are huge. Communicative attempts due to the use of total communication methods were in the form of physical cues, sign language usage, picture cards usage, and vocalizations. Parents and professionals both noted various communication attempts made resulting from total communication. Parent and professional statements indicated a combination of communication attempts throughout the interview and focus group dialogs as well as in statements indicated on the PLS™-5 HCQ.

Physical prompts. Participants noted physical gestures such as pointing, leading someone to a place or object by the hand, and specific hand over hand actions. Jillian stated that her son uses physical prompts to communicate his wants and needs (Personal communication with Jillian, 2015).

She replied:

> It has gotten so much better. Cause used to me and him both would sit and cry because I was frustrated that I didn't know what he wanted and he was frustrated cause I didn't know what he wanted so we would both sit and cry. But most of the time he is pulling and waving, Basically, when he pulls and he waves his hands in front of it and pulls you to it. He will point and shakes his hands and take me to what he wants. (Personal communication with Jillian, 2015)

Sharon also reported, "We verbally ask him something and he will choose, whether it is by touching something or walking to the one he wants" (Personal communication with Sharon, 2015). PLS™-5 HCQ parent responses indicate that all children are now using physical gestures to let other know of their wants and needs. These specific physical responses are pointing, gesturing, leading someone to a desired items, or hand over hand actions.

Sign language. Some of the participants indicated sign language attempts, demonstrating the tact verbal operant, by preschoolers to make the child's wants and needs known and to interact with teachers and peers. Lynne explained sign language usage she has observed, "He is beginning to repeat the sign language instruction as he does the movies he watches at home. He knows many signs and will use them to ask for more snack or for an activity instead of using words" (Personal communication with Lynne, 2015). Ken also stated that his son is using sign language to ask for things "like thirsty" (Personal communication with

Ken, 2015). Sharon explained, "We always try to talk and show him sign language but he had rather use our hands to do it right now" (Personal communication with Sharon, 2015). Two parents indicated surprise when their child learned new signs and used them at home to communicate wants and needs. The children encountered an item and labeled the item they wanted or needed. Sign language alone is productive for some of these children.

Picture cards. Teachers reported using picture cards to assist in making choices and to assist in managing behavior. Again, the demonstration of reinforcing tacts led to a change in communicative behavior as well as social behavior. Ann says, "We use the pictures a lot and they seem to be, to work" (Personal communication with Ann, 2015). Danielle reported that one student responded to pictures and used a few pictures in an exchange method to communicate his choices with her (Personal communication with Danielle, 2015).

The teachers implemented picture cards in an effort to assist with behavior management, as a reminder for expected behaviors. Danielle went on to say,

> One student I had used picture cards to describe his feelings when he was upset of frustrated. When he started crying, we reminded him to use his picture cards. He would choose the card that explained the problem and his feelings. This helped him express his emotions before it escalated to a meltdown. (Personal communication, 2015)

The teachers reinforced the use of pictures as a tact that led to a change in behaviors. Picture cards were especially helpful to teachers to assist with making choices and managing behavior; however parents did not mention the use of picture cards as a communication method in use at home.

***Verbalizations*.** Parents and professionals report a variety of verbal responses including babbling, word approximations, and single words to interact with peers and adults, label objects

in the environment, name family members and relate to the daily routine. This ability to label objects verbally illustrated one class of verbal operants, the tact. Teachers and peers reinforced these verbal responses by interacting with the child in the manner requested.

On the PLS™-5 HCQ, all parents noted babbling as an initial communicative response, (Personal communication with Jillian, Katie, Ken, Sharon, & Tara, 2015). Sharon explained the communication progress of her child, stating,

He has come a long way. He used to not really say anything at all and if he did, it was a small babble, sounds like a moan. He will move his tongue around in his mouth like he is trying to form words. I've started seeing changes. (Personal communication, 2015).

The speech pathologist explains the communication attempts of another student. He is "making some verbal approximations for words such as drink, fish, bottle(baba) and clearly calls for his Nana when he see her arrive to pick him up"(Personal communication with Mary, 2015). Katie explained that her child now uses many words, can name family members, identify toys, label pictures, and use words in conversations. "He also uses words to relate to the daily routine" (Personal communication with Katie, 2015). Parents and professionals were excited in this progress, as their children were not using words at all prior to the implementation of total communication.

Multiple methods. Parents and teachers combined communication methods in order to increase a student's communication ability. It was the hope that children would implement at least one method to have some sort of functional communication. Parents and teachers reported that some children employ multiple means of communicating their wants as needs.

The speech therapist reported:

> One student we have is picking up new signs every day and using words, pictures and sign language very effectively. He was verbalizing only four words. He has significantly increased his verbal vocabulary, is using sign functionally and using some pictures during transitions and to manage behavior. He imitates every sign and word that we introduce and begins using then when we remind him to. The twins we had last year who were autistic made noises all the time and had no communication with others. Now they are using verbal communication as a primary means of communication with some pictures to assist with transitions, directions, and routine throughout the day. (Personal communication with Mary, 2015)

Tara reported, "Since introducing total communication methods, we um, we have seen a big difference. He has picked up on sign language more than anything. He is also trying to verbalize words" (Personal communication with Tara, 2015). She also reported on the PLS™-5 HCQ that her son uses a variety of attempts to communicate such as pointing, physical gestures, jargon, and simple words and phrases (Personal communication with Tara, 2015). The words he uses are chicken bite bites, glasses, Momma, and other family names (Personal communication with Tara, 2015). He can now label toys, foods, animals, daily routine activities, and actions using words combined with sign language (Personal communication with Tara, 2015). He uses sign language to tell when he is hungry, needs more, or is all-done (Personal communication with Tara, 2015)

While parents and teachers expected that the children would learn to use at least one method to communicate, it was surprising that some of the children began to use multiple methods simultaneously.

Research question two. Research question two focused on the reshaping of social interactions and social learning due to total communication. Social interactions refer to the interactions of preschoolers and their peers or siblings, as well as interaction with adults. Parent and teacher perceptions differed in responses. Parents overall stated that social skills had improved, citing increased play with parents, increased participation in physical activities, and more appropriate play with toys. Professionals did not acknowledge any of these findings, but simply stated that many of their students seek out others with whom to play both in the classroom and in physical activity, however they are not at the same level of play as their peers. Professionals and parents both saw increases in playing learning games.

Play with toys. Parents noticed that their children have started playing with toys and have progressed to pretend play with some of the toys. Jillian is excited that her son now plays with toys at home. "He plays with toy cars and lines up toys. He doesn't always share his toys. Sometimes he stacks blocks and sometimes he pretends with cups like he is drinking or with play food" (Personal communication with Jillian 2015). Tara shared that her son enjoys playing with Mr. Potato Head and now will play with some other toys (Personal communication with Tara, 2015). Katie informed that her child now plays with more of a variety of toys and uses them appropriately. Ken reported that his son plays with multiple toys together such as building a road with blocks for his trucks. While parents felt that their children are now playing with toys professionals did not indicate this as a new social skill.

***Play with adults*.** Parents went on to explain that their children are now interacting with them at home. Jillian reported on the PLS™-5 HCQ that her son now plays with her and his dad at home; "he will play games such as catching a ball and peek-a-boo" (Personal communication with Jillian, 2015). Sharon agreed that her son also plays peek-a-boo now with her, and he

enjoys being tickled and other types of physical play such as being chased (Personal communication with Sharon, 2015). Tara explained her child is beginning to play with adults, and is now able to go on errands with her (Personal communication with Tara, 2015). Caroline, a lead pre-kindergarten teacher, explained that she has experienced students with autism who are engaging with teachers as well (Personal communication with Caroline, 2015). The other members of the teacher focus group in which Caroline participated agreed that their students with autism often interact with, and want to play with teachers at school (Personal communication with Ann, Dawn, & Kay, 2015).

Play with peers. Playing with peers is the next step in learning appropriate play. Jillian explained her son's progressing interactions with other children:

> He is beginning to play with his sister but not much. Usually when he is playing and she comes up, he leaves but he has gotten to where in the last few months occasionally he will come play. I bought them a light up thing and he wanted all of us in the hall shining those lights and playing and he wanted her in there too. He played with her. (Personal communication with 2015

Katie also shared that her child is using words now to play with his sisters and that he will follow what they do (Personal communication with Katie, 2015).

Teachers presented a varying view of peer interactions when considering various students. Mary and Ann shared that some of their students

> use words to play with friends. The students interact with their friends. They talk with them and play with them. But they can be aggressive when asked to do a non-preferred asks or when not wanting to share with friends. (Personal communication with Mary and Ann, 2015).

Danielle shared that she witnessed, "the students sometimes communicate with their peers inappropriately when they want something. They often push, take the toy" (Personal communication with Danielle, 2015). Mary continued to explain that they "don't always know how to use their words and would rather grab or pull before they try to communicate" (Personal communication with Mary, 2015). Another teacher stated, "We are seeing that the children seek out others to play with in the classroom. They also play with them on the playground" (Personal communication with Caroline, 2015). Teacher and parent experiences varied concerning play with peers.

Play learning games. In additional to the learning games that children engage in at school, parents enjoy playing learning games with their children at home as well. Tara focused on learning games with her son. She made a learning board for him that includes various textures, fasteners, and items to match. "He loves to play with his learning board with me. He also enjoys looking at books and story time at bedtime" (Personal communication with Tara, 2015). Katie and Ken indicated on the PLS™-5 HCQ that their children also enjoy playing learning games such as naming colors, naming shapes, and putting together puzzles (Personal communication with Katie & Ken, 2015).

Teachers reported that children with a communication delay "do better one on one," than in large group. Caroline continued to agree, "If we are doing work on the board, they may stand up and point to their name, a picture, shape, color or whatever we are working on instead of using their words" (Personal communication with Caroline, 2015).

Research question three. Research question three sought to determine additional resources or support the participants perceived as needed in order to make total communication methods more successful. Parents reported training and additional materials as needed resources.

Training. Parents and professionals stated that more training in communication methods would make this method more successful. The respondents stated that they would like to have more training in the form of workshops focusing on communication methods with children with autism, not only for teachers but for parents as well. Tara stated, "I feel that educating parents or having a class would be very helpful" (Personal communication with Tara, 2015). In relation, Kay explained, "Training would be good. I have always thought that, because I have a child with autism and I would like for the teachers to be trained, and to know what is going on" (Personal communication with Kay, 2015). A workshop focusing on sign language instruction for both teachers and parents would lead to more success as well. Katie stated, "I guess I need to learn more about the sign language" (Personal communication with Katie, 2015). Sharon elaborated on this in her statement,

> Maybe we need to work on sign language more because I have witnessed children his age and older using it and it is a good way of communicating if you can't speak then that's the next step and it seems to work with other children. (Personal communication with Sharon, 2015).

The speech therapist also commented on the need for additional parent training,

> I'd love to have more carryover with parents, not saying that we are lacking, just not enough time to prepare with the parents like we would like to. I think that would be a better experience for the students and they would make more progress. (Personal communication with Mary, 2015).

Parents and teachers point out that there is a gap in communication. Preschoolers often have meltdowns when others do not understand what they want or when the child does not understand.

Materials. While all professionals responded that more picture cards would help in communication, two teachers stated that they would like "a variety of picture cards" (Personal communication with Caroline and Ann, 2015). Mary again stated that additional time to prepare materials for parents and school staff is important (Personal communication with Mary, 2015). One of the parents, Sharon, stated that she would like more pictures, (Personal communication with Sharon, 2015). All professionals reported a need for more materials, but this was not as concerning for parents.

Composite Textural Description

After horizonalization, looking at all the data equally, the data that remained provided a textural description of the experience as a whole. The individual parent and professional descriptions of their use of total communication methods combined to form a composite, textural description of the experience as a whole.

When asked about changes in the child's communication and social behaviors, parents and professionals used words such as positive and productive to describe the use of total communication. Parents provided specific examples of the positive changes and productive quality of total communication. Parents reported that prior to this strategy there were times of frustration and crying on part of the parent and the child. One parent expressed that there is a "gap in their communication as well as their relationship, not just our relationship, but his relationship with everyone around him," (Personal communication with Tara, 2015). This has greatly improved. It is important to note that parents feel positively about the use of total communication methods as a method of communication with their non-verbal preschooler. Parents noticed that their children began to show development of joint attention in that they were able to respond to sights and sounds in the environment, reacted to actions such as tickling,

looking at books, and play physical games such as ball and learning games. In the school setting, the ability to follow directions influenced the child's ability to comply with requests, and this was noted as a primary improvement.

Parents and professionals reported that all students began to babble, while others began using jargon, simple words, sign language, and pictures to express wants and needs. Parents and teachers were excited that some of the students not only began using one method to communicate wants and needs expressively, but some children were able to implement multiple methods simultaneously to communicate with others. As one parent explained, "He is very excited when he realizes that he can communicate with us and we can understand him" (Personal communication with Tara, 2015).

Parents reported that their children now play and that their social skills have "gotten better" (Personal communication with Ken). Parents reported that the preschoolers with autism who are using total communication methods would now interact with toys, adults, and peers, and engage in learning games. Regarding functional communication, the children use picture cards to make choices between which toys with which to play. They are using words, sign language, pictures, and verbalizations to communicate with peers and adults. These preschoolers are also able to participate in learning games and activities such as pointing to shapes or colors, looking at books, and participating in large group activities. Some of the general education teachers agreed with this as well, reporting similar experiences. However, regarding social interactions, special education teachers felt as if the children still did not exhibit appropriate play actions such as sharing. They reported that children often do not use words to communicate during interactions with peers and they are not always making choices among toys.

All participants cited a need for additional training and more materials as resources that would make total communication more successful. Specifically, training in sign language instruction, as well as how to communicate with children with autism, were the suggestions for additional training.

Composite Structural Description

After looking at the varying meanings of the experiences, themes, feelings, and thoughts influencing the experience, as well as determining specific quotations that represent the experience, structural themes were determined. Imaginative variation explains how the "experience of the phenomenon came to be what it is" and explains, the conditions that brought light to the experience (Moustakas, 1994, p. 98). In this study, the professionals started using total communication methods with the preschoolers when the child entered school at age three. Some of these children have only been in the program for a few months while others are five years old and have been in the program for almost two years. I asked parents to use total communication methods at home since the child entered the program as well. I identified the structural description by looking at the parents and professionals' perceptions of the use of total communication methods in use with preschoolers diagnosed with autism. Overall, the participants expressed progression in student communication and social skills. Participants spoke favorably in description of total communication methods and were eager to learn more about this method of communication. Participants requested additional materials as well.

Composite Textural and Structural Synthesis

After compiling separate textural and structural descriptions, I synthesized the data to reach the essence of the experience of using total communication methods as described by

parents and professionals. This synthesis established that parents and professional both spoke of progress that students made.

All the participants spoke of the experience in a positive manner. All participants noted an increase in functional communication. Many of the parents admitted that they often anticipate their child's needs instead of waiting for a communication attempt (Personal communication with Jillian, Sharon, & Ken, 2015). However, the PLS™-5 HCQ completed by parents and the parent interviews indicated a variety of communication attempts made at home as well as an increase in receptive language skills. Participants noted joint attention and following directions have improved with the use of total communication methods. Further, parents indicated progress in communication attempts at home and stated it was because of what the teachers "do at school" (Personal communication with Jillian, Katie, & Ken, 2015). Katie explained this progress concerning her child:

> He is getting a lot better since he came to school. He is saying more at home but is still not answering questions. Until he started school, he would just point or make a train sound. He said a few words but didn't really talk. Now he is talking more. (Personal communication with Katie, 2015)

Total communication methods reshape social skills in that preschoolers with autism who are using total communication methods to communicate are better able to play with toys, interact with teachers and peers, and engage in learning tasks. This statement was not entirely agreed upon in that some professionals felt as if some students continued to be aggressive and not use words when playing with toys; however, there was more evidence cited that social skills had improved.

The participants described additional needs to aid in the successful implementation of total communication. The needs that were communicated as being important were additional training, especially in the area of sign language instruction and how to communicate with children with autism. The professionals requested additional materials to use in the classroom.

Summary

In this study, the data collection instruments employed were the PLS™-5 HCQ, individual parent interviews, and professional focus groups. After analysis of these documents with the Atlas.ti software, these themes were identified: (a) joint attention, (b) following directions, (c) communicative attempts, (d) play with toys,(e) play with peers, (f) play with adults, (g) learning games, (h) materials, and (i) training.

The research questions focused on the influence of total communication strategies on functional communication and socialization skills, as well as any additional support the participants may need.

Regarding research question one, total communication methods influenced functional communication in a positive and productive manner by increasing both receptive and expressive language skills in preschoolers with autism. Parents and teachers reported that preschoolers developed joint attention in that the children were able to attend to tasks and activities, and as well, as react to their environment. They increased their ability to follow directions using a variety of methods such as gestures, words, sign language, and pictures as well as the combination of these methods. Teachers spoke mostly about how the use of the pictures, sign language, and words showed an improvement in the ability to understand classroom rules, procedures, and transitions as well as leading to an increase in the management of student behavior.

Research question two regarded the reshaping of social interactions because of total communication methods. While the viewpoints varied across participants, the majority of the responses indicated an improvement in social skills. This was demonstrated in the ability of the students to play with toys, to interact with adults and peers, and to engage in learning games. The is a reformation from previous social interactions prior to using total communication in that these students were not interacting with peers or adults, did not play with toys, and did not demonstrate the receptive or expressive skills to participate in learning games.

Research question three was concerned with additional support or resources that parent and teachers felt would make this strategy more successful. The participants identified two needs: training and materials. Every professional participant specifically stated training as a need. The areas of training were designated as additional training in sign language instruction and communication needs of preschoolers with autism. One professional also reported that parents need additional training. While parents did not specifically state training, they made general statements referring to the need to learn more about sign language.

CHAPTER FIVE: DISCUSSION

Overview

Communication is the most basic functional life skill that a preschool child develops. Children with autism experience delays in communication and are often non-verbal, indicating no communication skills at all. Therefore, it is imperative that these preschoolers develop a means of making their wants and needs known. There are many strategies proven effective in quantitative studies; however, these studies do not focus on the qualitative perspective of those involved with the interventions or strategies. While these strategies are effective from a numerical perspective, a gap in the literature exists, in that a description of the experiences from the perspectives of those implementing the interventions is not evident. The purpose of this transcendental phenomenological study is to explore the total communication experiences of preschoolers diagnosed with autism as described by their teachers and parents at Harris Elementary School. Chapter Five includes a summary of the findings, implications related to theoretical frameworks and the literature, limitations, practical implications, and recommendations for future research.

Summary of the Findings

The first research question explored how total communication strategies influenced preschool student's ability to communicate functionally. The themes identified concerning functional communication were joint attention, following directions, and communicative attempts. Parents cited that their child demonstrated joint attention. Parents pointed out that their children are noticing changes or actions in the environment, and will even attend to play with toys and looking at books.

Overwhelmingly, the participants saw an increase in student ability to follow directions. Parents and professionals alike describe events in which children are able to implement total communication methods to demonstrate acceptable actions when given a directive or command. Following directions related to the daily routine was the most prevalent example of receptive language relating to the implementation of total communication. Finally, participants indicated an increase in expressive language skills. Parents and professionals described an increase in the usage of communicative attempts in the form of physical prompts, sign language, pictures, verbalizations, and a combination of these methods as a means for the children to express their wants and needs to others.

Regarding research question two, parents noted an increase in social skills, while general education and special education teachers had varying views. The parents cited an increase in social skills; children are able to play with toys, sibling, adults, and some learning activities such as story time. General education teachers indicated that their preschoolers with autism are interacting, with both teachers and peers, as well as engaging in learning games. Some of these professionals pointed out that their children are able to play with toys independently. Special education teachers have varying views, however. Some of them imply that the preschooler still has difficulty with communicating when sharing with peers and just take the toys away instead of using words to solve conflicts with peers. Others indicated that students are now able to play with toys and interact with adults in learning games. Even though some views vary, participant perceptions indicated that the use of total communication transformed children's social skills.

Finally, concerning research question three, parents indicated that materials and training were needed resources. Parents indicated that they would like more training in how to use sign language. Professionals indicated a need for training for both themselves and for the parents.

The teachers suggested training to assist the parents, as well as to address the communication needs of preschoolers with autism.

Overall results of this study indicate that total communication was a positive experience with all the participants. I described the essence of the experience of using total communication here in the summary of the findings.

1. The use of pictures, sign language, and verbalizations employed by parents and teachers in a reinforcement model positively influenced students' communication abilities, in that these students showed an increase in both receptive and expressive language skills.
2. Preschool students demonstrated new social skills as they developed the ability to play with toys, interact with adults and peers, and participate in learning games.
3. Parents and teachers asked for additional training and additional materials in order to make this strategy more successful.

Discussion

Implications and Discussions Related to the Theoretical Framework

As theoretical frameworks form the groundwork for this study, it is necessary after analysis of the data, to make a connection between that data and the theories framing the study. The theories that grounded this study are operant conditioning though the lens of communication as explained in the book *Verbal Behavior*, social learning, and social development.

Operant conditioning and verbal behavior. B. F. Skinner (1938) developed operant conditioning based on the behaviorist work of Ivan Pavlov and John Watson. Operant conditioning refers to a reinforcement model of behavior modification (Miller 2011). Skinner outlined behavior modification in order to analyze a child's problem behaviors and a process of

reinforcement which the specific behavior is modified or changed (Skinner, 1957). Operant conditioning applies to learning in an educational setting, specifically concerning the learning of new behaviors (Skinner, 1938). In an effort to encourage or discourage a learner's behaviors following operant conditioning, reinforcement of a new behavior encourages repetition of the behavior (Skinner, 1938). This model relies on both positive and negative reinforcement to bring forth a change in behavior.

Skinner (1957) elaborated further on this work using operant conditioning in his book title *Verbal Behavior*. In this book, Skinner describes the modification of language with these operants. He explained that verbal operants are the smallest units of language (Skinner, 1957). "Any movement capable of affecting another organism may be considered verbal. The listener must be responding in ways in which have been conditioned precisely in order to reinforce the behavior of the speaker" (Skinner, 1957, p. 14). "Two main classes of verbal operants are mands and tacts" (Skinner, 1957, p. 224). A mand is similar to giving a command, while reinforcing the appropriate response or behavior. The other operant is a tact. Coming in contact with an item, and then labeling the item is the best description for a tact. The reinforcer would be the repetition of the response. Skinner went on to explain that this type of back and forth use of tacts and mands, and reinforcing the turn taking of conversation is dependent on the interaction with others.

In this study, the behavior that was in need of modifying is language or communication development. This applies to using total comunication methods with non-verbal prescoolers. The repeated reinforcement, the presentation of a picture, sign language and verbalization when making a command or giving a directon, gets a desired response from the child, while behaviors such as physical aggression and yelling warrant a negative response or loss of a desired activity.

Parent and professionals used total comunication as verbal opernats, mands, and tacts, with reinforcements to show a positive change in communication as well as progress in communicative attempts, many which lead to increased vocalizations. Classroom teachers used total communication to explain desired bahviors realting to the daily routine. The preschoolers responded appropriately with the support of total communication. Additionally, when a student signed "thirsty" for his parents, he was given a drink providing another succes of this strategy. The simple implementation of this total communication method extends Skinner's (1938, 1957)work from the learning of language as an infant to that of overcoming a significant delay and finding a means to communicate with others.

Social learning theory and social development. Concerning the acquisition of language, as Skinner (1957) explained in his book *Verbal Behavior*, learning is dependent on the interactions of with others. Bandura (1977) posited that learning takes place through passive observations of others in the environment. Preschool classrooms are established and curriculums designed and implemented based on this theory. There are times in the preschool day in which children learn through play, as well as through the observations of adults and peers in social learning opportunities. Psychologists who work with children with autism often recommend that these children observe models of appropriate behaviors in order to learn from, and repeat the actions of their peers. Vygotsky (1934) explained that communication is the means through which these social interactions occur. Participants indicated that their child's social skills have increased in that they are showing joint attention, playing with toys, and interaction with adults and peers in both play and learning activities. These new skills demonstrate the social learning theory in that they are now able to observe others and interact with them appropriately. These

observations were passive observations during class time or playtime at home, not gained during structured classes on how to play with toys or friends.

Vygotsky (1935) furthered this social learning theory, formulating the social development theory, stating that learning is a social activity and occurs in developmental steps. Vygotsky later described these steps or zones through which children learn and can complete tasks with scaffolding. The difference between the child's mental age and the "level he reaches in solving problems with assistance indicates the zone of proximal development" (Vygotsky, 1934, p. 187). In this case, the children are not able to communicate independently and require assistance provided by total communication methods. As life-long learners, there will always be tasks that require support prior to independent accomplishment. In this study, parents and professionals have indicated that they need additional support in the form of materials and training in order to help the children become successful and reach their communication goals. Likewise, children with autism require substantial support to gain new skills. Participants indicated that the use of total communication, especially used at school, is the contributing factor to their child's increasing communication abilities.

Implications and Discussions Related to the Literature

The synthesis of the data and the identified themes led to three significant findings in this study. These statements provide answers to the research questions, which were grounded in the theretical frameworks and literature. Following are the significant findings.

1. The use of pictures, sign language, and verbalizations employed by parents and teachers in a reinforcement model positively influenced students' communication abilities in that these students showed an increase in both receptive and expressive language skills.

2. Preschool students demonstrated new social skills as they developed the ability to play with toys, interact with adults and peers, and participate in learning games.
3. Parents and teachers asked for additional training and additional materials in order to make this strategy more successful.

Positive influence in receptive and expressive language skills. Total communication methods were determined to be a positive influence on the receptive langauge skills of joint attention and following directions as well as expressive language regarding communicative attempts. Shumway and Weatherby (2009) explained that joint attention is an essential prerequisite for developing language. Many children with autism require instruction as a means to communicate for a variety of functions. Some of these functions are requests, labeling, express feelings, wants, needs, or social interactions (Prizant et al., 2003). The children in this study were able to develop joint attention, and then progressed to the development of receptive and expressive language. The students were able to follow directions, especially relating to the daily routine. Parents and professionals felt as though their children developed expressive abilities using verbalizations, sign language, pictures, and combinations of these methods to communicate in a functional manner, making their wants and needs known.

As stated previously in Chapter One, there is a need for additional research concerning the selection of appropriate interventions as well as the effect of those interventions on communication abilities of children with autism (Brunner & Seung, 2009; Shumway & Weatherby, 2009). The results of this study confirm the findings of previous research that learning increased when multiple communication strategies were implemented (Kelly, 2001). This also supports previous research concerning using multiple methods of communication,

demonstrating that students' "total communication results in faster and more complete receptive and/or expressive vocabulary acquisition than does speech alone" (Mirenda, 2003, p. 204).

Social skills. Social skills are dependent on communication abilities. Parent experiences determined that their child's social skills changed with the use of total communication. Teacher perceptions were varied, but overall, student social skills increased with the use of total communication. Students increased in their ability to play wth toys, interact with adults and peers, and to interact in socal learning situations. These findings add to the existing literature that states that specific treatments improve social skills (Brunner, 2009). Types of play comprised the themes relating to social skills for preschoolers with autism. This finding corroborates the statement made by Jones and Carr (2004) that "play is a critical role in social and language development"(p. 13). The findings of this study add to the body of research that evaluates the effects of various interventions for children with autism on social skills, challenging behaviors, and academic skills, determined as a need by Ganz and colleagues (2012).

Resources. Previous research called for the examination of perceptions of parents and teachers concerning communication and social skills strategies (Murray, Ruble, Willis, & Molloy, 2009). Parents require instruction to become interventionists in their home (McDuffie & Yoder, 2010). The findings of this study identified that both parents and teachers requested additional training to feel successful in implementing communication strategies for preschoolers with autism.

Implications

The findings of this study present practical implications for both parents and educators. Parents raising children with autism learn many strategies proven to improve communication and social skills. Many times parents are not sure which to use, and what genuinely would work for

them. This study provides parent perceptions in real world language and examples that might provide encouragement for a family to try total communication strategies at home.

In the classroom setting, I recommended that both special education and general education teachers implement total communication methods with non-verbal children with autism, regardless of the age of the child. The significant increase in communication skills and social skills serves as encouragement to both general education and special education teachers who struggle to communicate with children with autism. Additionally, teachers struggling with managing behaviors related to delays in communication and socialization can discover that the total communication method is an intervention that is successful, not only in increasing communication skills, but in increasing social skills and decreasing maladaptive behaviors relating to the lack of communication. The professional dialogue presented in this study provides educators with positive responses that would encourage the implementation of a total communication approach to aid in classroom communication.

Limitations

Weaknesses that the researcher cannot control are defined as limitations as explained by Creswell (2007). Thus, I have identified limitations in this study. There are three limitations to consider. Consistency of total communication usage in the school or home setting may be a limitation. Parents and teachers, or therapists, may not always use the same method or may not use any one method on a consistent basis. Another limitation is that parent responses may not always be credible in that they do not have the same expectation or understanding of concepts or implementation of the strategy as an educator might have. In addition, it is questionable as to whether the children are making a connection with the picture or manual sign, and learning to use a manual sign language or picture to get a specific want or need, rather than simply choosing

a card that gets a response (Yoder & Lieberman, 2010). As this study deals with preschoolers with autism, as well as the parents and professionals who work with these children, it is difficult to generalize the findings for other populations. Finally, the ethnicity of the group is not a representation of all populations in that all participants in the study are Caucasian, thus allowing for little generalization.

Recommendations for Future Research

Although, not a significant theme, many parents wanted to explain the emotional reactions experienced by both the parent and their child when he or she is not able to communicate. They expressed situations like crying, sadness, and frustration when describing their child's abilities. They also pointed out the frustration, crying, and tantrums that their child experienced when not understood. A study focusing on emotional experiences of parents and children with autism would lead to a better understanding of a parent's need for communication strategies that work with children diagnosed with autism.

Additionally, the majority of the professional participants were paraprofessionals. While these professionals work with students on a daily basis and really get to know their students, they often lack the knowledge of strategies, developmental stages, and experience with specific disabilities that an experienced special education teacher has gained throughout years of training and experience. Therefore, a study with only highly qualified special education teachers who work with children with autism would provide beneficial information for use in the school setting.

The addition of researcher observations of the children in both, home and school settings, would allow for a more in-depth description of the children's functional skills in the areas of

communication and socialization. This would also allow for a connection between the parent reports and the professional reports.

Summary

Communication is the means through which we make our wants and needs known, express our feelings, and interact with others; it is important to increase the verbal capabilities of those children who do not yet speak. Non-verbal children with autism constitute a significant portion of this population of preschoolers. There is a present need for providing a means of functional communication for children with autism (Yoder & Lieberman, 2010). It has become evident that total communications strategies work in teaching children with autism to communicate. Sign language, purchasable programs, picture and video usage, and many other strategies or interventions demonstrated success on an individual basis. Interventions do not have to stand alone, but can be combined to provide the most appropriate and efficient instruction for each child (Brunner & Seung, 2009; Tincani, 2004; Yoder & Lieberman, 2010). Describing which of these strategies work best for children with autism who display a broad range of communicative abilities is imperative to provide insight into the functional communication and social interactions of children while also providing information to parents and teachers.

The data collection instruments, the PLS™-5 HCQ , parent interviews, and professional focus groups, provided data that I analyzed to shine light on the parent and teacher perceptions of the use of total communication methods. First, I discovered through parent and teacher statements that the combination of sign language, pictures, and verbalizations on yielded positive influences on functional communication. Participants described an increase in both receptive and expressive language skills. Students gained the ability to demonstrate joint attention and the

ability to follow directions, especially related to the daily routine. Expressively, students began to use sign language, picture cards, verbalizations, and combinations of methods in an increased ability to communicate functionally, expressing wants and needs.

The parents and professionals described how total communication methods reshaped social skills. Participants' responses focused on an increased ability to learn new play skills. Participants reported that students gained the ability to play with toys, interact with peers and adults, and to engage in social learning experiences such as learning games.

Finally, teachers requested additional materials to use in their classrooms. All participants shared that there was a need for additional training and materials. Responses indicated that training specifically relating to sign language instruction was important for parents. Additionally, teachers were interested in training not only to implement communication strategies, but also to understand the communication needs of preschoolers with autism.

These shared participant responses filled the gap in the literature in that it provides a qualitative look at teacher and parent perceptions of the communication interventions that work in quantitative research. Parents and teachers experienced the implementation of a communication strategy with positive results. This is encouraging due to the most recent update from the Centers of Disease Control (CDC) concerning the prevalence of autism. Since the onset of this study, the CDC updated the statistics concerning the prevalence of autism. As I noted in Chapter One, the CDC reported that one in 88 children are born with autism. A updated report released on August 26, 2015 by the CDC, indicated that "about 1 percent of the world population has autism spectrum disorder leading to a prevalence in the United States estimated at 1 in 68 births"(CDC, 2014, p. 1). Delays in communication is one of the defining characteristic of autism leading to the increased need for strategies that are not only effective but are user friendly

and supported not only by clinicians or researchers, but those parents and teachers who implement the strategy on a daily basis. The findings of this study provide an easily implemented and managed strategy that elicits positive results and increases receptive and expressive language skills in nonverbal preschoolers with autism. Another defining characteristic is the lack of social skills in children with autism. This study is significant in that it also provides encouragement in that social interactions can develop with the proper communication support. The implementation of the total communication method can close the communication gap, as well as the gap in relationships with preschoolers with autism and their parents, teachers and peers.

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APPENDICES

Appendix A: Institutional Review Board Approval Letter

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

August 20, 2015
Leigh Ann Beesley
IRB Approval 2277.082015: Total Communication Methods for Preschool Children with Autism: A Transcendental Phenomenological Study of Parent and Professional Perceptions

Dear Leigh Ann,

We are pleased to inform you that your study has been approved by the Liberty IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
The Graduate School

Liberty University | Training Champions for Christ since 1971

1971 University Blvd. Lynchburg, Va. 24515 IRB@liberty.edu Fax (434) 522-0506 www.liberty.edu

Appendix B: Parent Informed Consent

Informed Consent Form

The Liberty University Institutional Review Board
has approved this document for use from
8/20/15 to 8/19/16
Protocol # 2277.082015

Total communication methods for preschool children with autism: a transcendental phenomenological study of parent and Professional perceptions

Leigh Ann Beesley

Liberty University

School of Education

You are invited to be in a research study of communication methods with preschoolers. You were selected as a possible participant because your child's special education records indicate a weakness in communication skills. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

Leigh Ann Beesley, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Background Information:

The purpose of this study is to explain the experiences of using total communication methods with preschoolers.

Procedures:

If you agree to be in this study, I would ask you to do the following things:

1. Use pictures, gestures, sign language and/or words in communicating with your child
2. Complete a home communication questionnaire
3. Participate in an individual interview that will be audio recorded. This interview can take place at your preference of the following locations: in your home, at the school or head start facility, or in another quiet public place such as the library. The interview should last no more than one hour.

Risks and Benefits of being in the Study:

The risks in this study are no more than you would encounter in everyday life. Data collection will not take place during school hours. Hence, no instructional time will be taken away from your child.

There are no direct benefits of participation in this study.

Compensation:

No compensation will be made for participation in the study.

Confidentiality:

The records of this study will be kept confidential. In any sort of report I might publish, I will not include any information that will make it possible to identify a participant.

Research records will be stored securely and only the researcher will have access to the records. Parent names and the school name will be changed, using a pseudonym. Hard copies of notes and questionnaires and data analysis will be stored in a locked file cabinet in my office. This data will remain on site for three years, and then will be shredded at that time. Audio recordings will be stored digitally on a flash drive and stored in the locked cabinet as well. At the end of three years, this too will be erased from the drive.

During the data collection and analysis process, a peer review will be conducted in which an educator not involved with the study will evaluate the materials in order to establish trustworthiness. This is the only outside person who may have access to any data.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University or Dade County Schools. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

How to Withdraw:

If you decide to withdraw from the study, you are requested to submit a letter in writing stating that you no longer wish to participate. Any data collected will be destroyed immediately and will not be used in the study. Any hard copies will be shredded. Any digital copies will be deleted.

Contacts and Questions:

The researcher conducting this study is Leigh Ann Beesley. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at 706-657-6165, EXT 40118 or you may email my advisor, Dr. Gail Collins at glcollins2@liberty.edu.
If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd, Suite 1837, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information to keep for your records.

Statement of Consent:

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

☐ The researcher has my permission to audio-record me as part of my participation in this study.

Signature: _____Date: _____

Signature of Investigator: _____Date: _____

My preferred method of communication with the researcher is

☐Phone number_____

☐ Email address _____

Appendix C: Professional Informed Consent

Professional Informed Consent Form

The Liberty University Institutional Review Board
has approved this document for use from
8/20/15 to 8/19/16
Protocol # 2277.082015

Total Communication Methods for Preschool Children with Autism: A Transcendental Phenomenological Study of Parent and Professional Perceptions

Leigh Ann Beesley

Liberty University

School of Education

You are invited to be in a research study of communication methods with preschoolers. You were selected as a possible participant because special education records indicate that students in your class exhibit a weakness in communication skills. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

Leigh Ann Beesley, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Background Information:

The purpose of this study is to explain the experiences of using total communication methods with preschoolers.

Procedures:

If you agree to be in this study, I would ask you to do the following things:

1. Continue to use pictures, gestures, sign language, and/or words in communicating with your students.

2. Participate in a focus group interview that will be audio recorded. This focus group will take place at either the elementary school or head start facility and will last approximately one hour.

Risks and Benefits of being in the Study:

The risks in this study are no more than the participant would encounter in everyday life. As the data collection consists of focus group interviews with teachers and therapists, these will take place after school hours. No instructional time will be taken away from the children. There may be perceived risks in that some of the teachers and paraprofessionals who are recruited are under

direct supervision of the researcher as their administrator. This supervisory relationship will not be impacted due to participation or refusal to participate in the study

The benefits to participation are a deeper understanding of communication methods as well as the opportunity to relate with those who share in the communication experience through a focus group interview.

Compensation:

No compensation will be made for participation in the study.

Confidentiality:

The records of this study will be kept confidential. In any sort of report I might publish, I will not include any information that will make it possible to identify a participant.

Research records will be stored securely and only the researcher will have access to the records. Student, teacher, paraprofessional, therapist, and parent names and the school name will be changed, using a pseudonym. Hard copies of notes and questionnaires and data analysis will be stored in a locked file cabinet in my office. This data will remain on site for three years, and then will be shredded at that time. Audio recordings will be stored digitally on a flash drive and stored in the locked cabinet as well. At the end of three years, this too will be erased from the drive.

During the data collection and analysis process, a peer review will be conducted in which an educator not involved with the study will evaluate the materials in order to establish trustworthiness. This is the only outside person who may have access to any data. Additionally, it should be noted that I cannot maintain or ensure that other focus group participants will protect your confidentiality.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University or Dade County Schools. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships. If you decide to withdraw from the study, you are requested to submit a letter in writing stating that you no longer wish to participate. If you withdraw, any data collected from you will be destroyed immediately and will not be used in the study.

Contacts and Questions:

The researcher conducting this study is Leigh Ann Beesley. You may ask any questions you have now. If you have questions later, you are encouraged to contact her at 706-657-6165, EXT 40118 or email my advisor, Dr. Gail Collins, at glcollins2@liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the Institutional Review Board, 1971 University Blvd, Carter 134, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information to keep for your records.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

The researcher has my permission to audio-record me as part of my participation in this study.

Statement of Consent:

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

Signature: _____Date: _____

Signature of Investigator: _____Date: _____

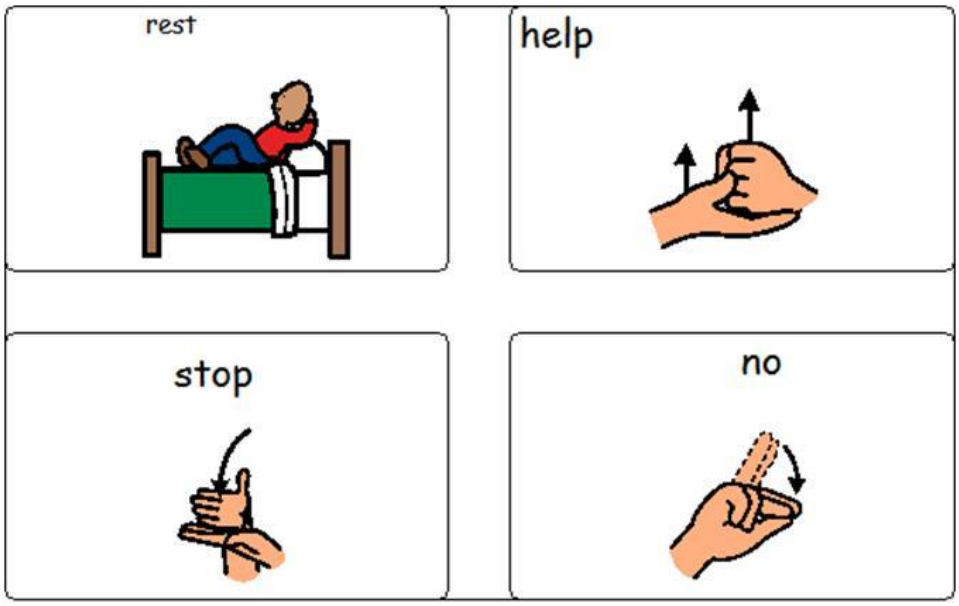
My preferred method of communication with the researcher is

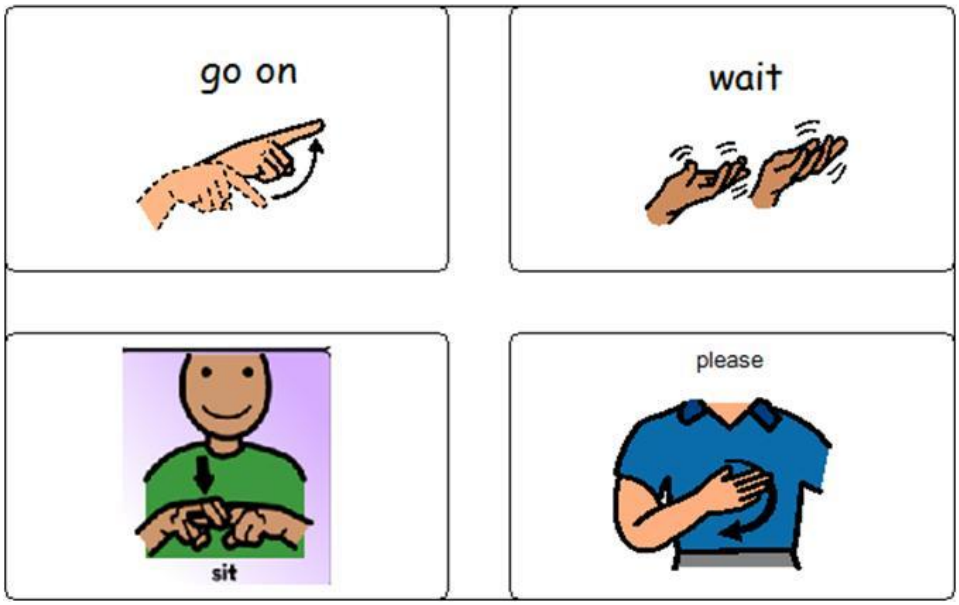
Phone number_____

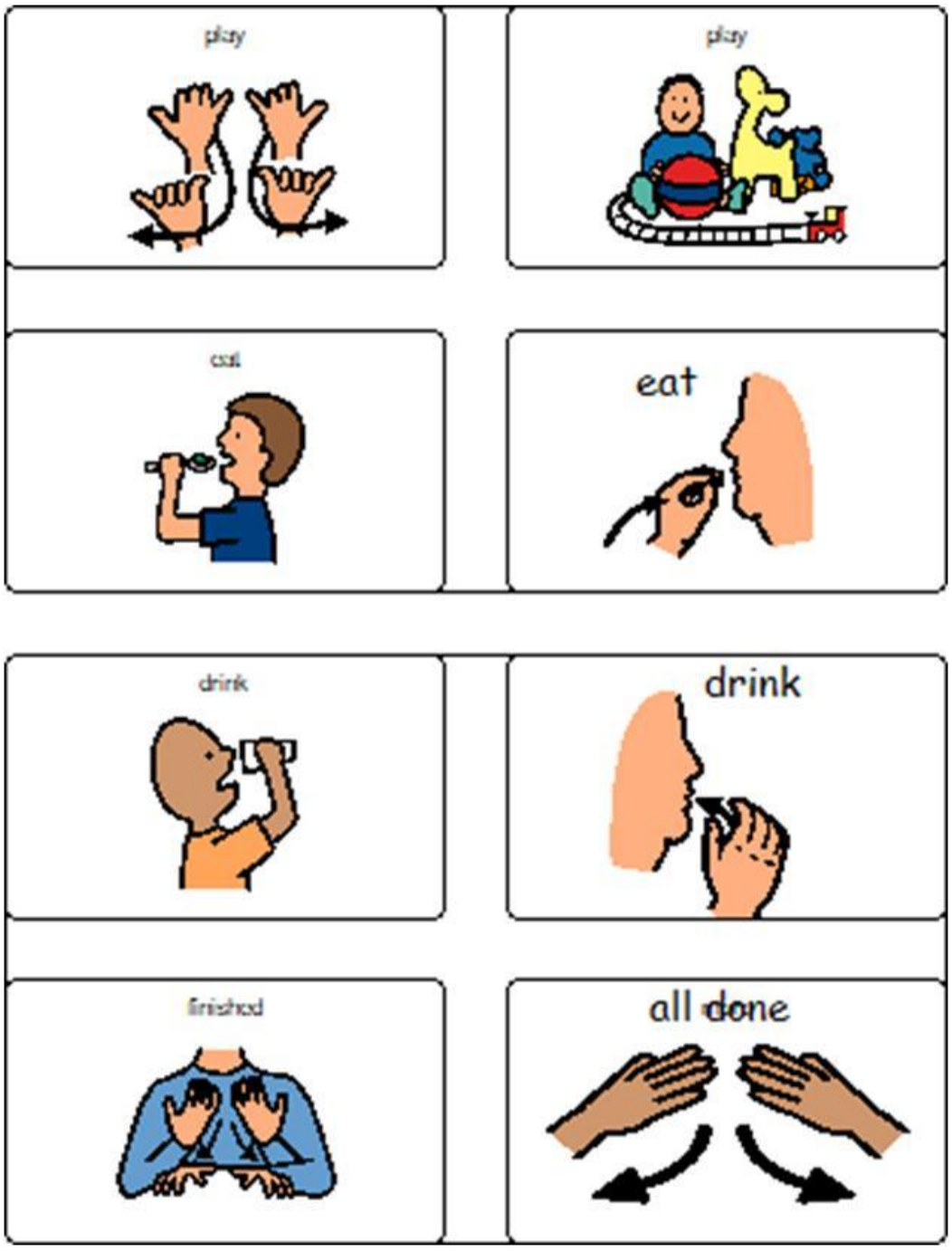
Email address _____

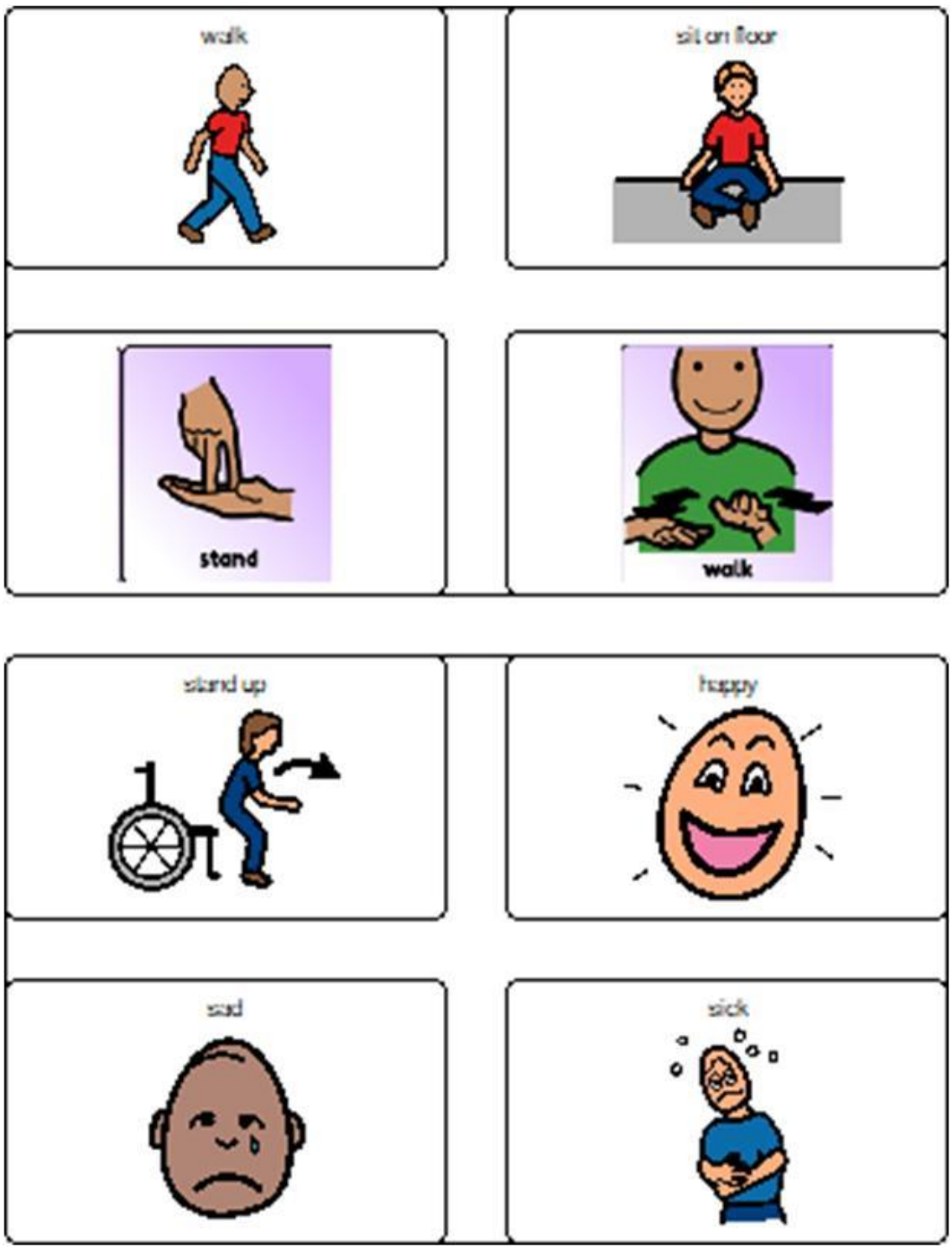
Appendix D: Picture, Word, Sign Language Communication Cards

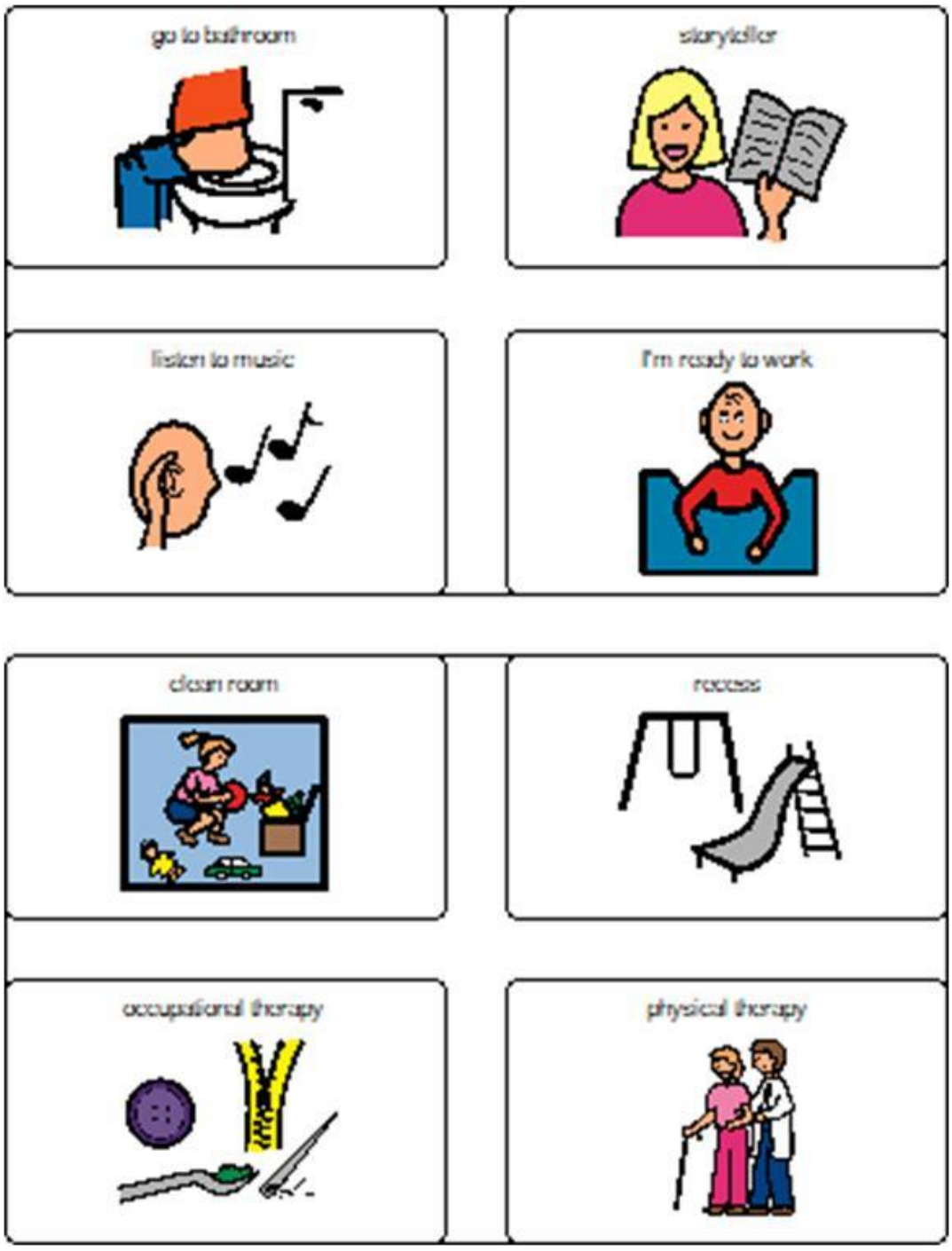
These are the communication cards currently in use with the participants of this study.











Mayer-Johnson

2100 Wharton Street

Suite 400

Pittsburgh, PA 15203

Phone: **1 (800) 588-4548**

Fax: **1 (866) 585-6260**

Email: mayer-johnson.usa@dynavoxtech.com

Web site: www.mayer-johnson.com

Appendix E: Boardmaker® Plus Software Permission Request and Letter

Please use the Picture Communication Symbols (PCS) in your presentation or informational materials with our permission. Please include the following copyright statement on each reproducible page:

The Picture Communication Symbols ©1981–2011 by Mayer-Johnson LLC. All Rights Reserved Worldwide. Used with permission.

Boardmaker®® is a trademark of Mayer-Johnson LLC.

In addition, please include the following company information in the resource section of your documentation:

Mayer-Johnson

2100 Wharton Street

Suite 400

Pittsburgh, PA 15203

Phone: **1 (800) 588-4548**

Fax: **1 (866) 585-6260**

Email: mayer-johnson.usa@dynavoxtech.com

Web site: www.mayer-johnson.com

Appendix F: PLS™-5 Home Communication Questionnaire Permission

Dear Mrs. Beesley,

Since you state that you have already purchased the forms, Pearson has no objection to your use of the Home communication questionnaire in your dissertation research project, provided that no forms reproduction takes place.

Because of test security and validity concerns, permission is not granted for appending tests to theses, dissertations, or reports of any kind. You may not include any actual assessment test items, discussion of any actual test items or inclusion of the actual assessment product in the body or appendix of your dissertation or thesis. You are only permitted to describe the test, its function and how it is administered and discuss the fact that you used the Test(s), your analysis, summary statistics, and the results.

Regards,

William H. Schryver

Senior Legal Licensing Specialist

Appendix G: Parent Interview Questions

1. Describe your experiences with total communication methods in your home.
2. Discuss any problems you may be facing due to lack of communication abilities/delays.
3. Describe any changes your child has experienced concerning communication.
4. How would you describe your child's ability to communicate as compared with his friends or siblings?
5. Explain how you and your child communicate most often and how has this changed since using total communication methods?
6. Describe your experience when your child has difficulty with making wants and needs known.
7. Describe social interactions you have observed with your child and siblings or other friends.
8. Please describe any other concerns to make using total communication more successful.
9. What other comments, suggestions, or recommendations would you like to mention about using total communication at home with your child?

Respondents who offer one word or short phrase responses to any of the prompts will be asked to elaborate by saying, "Tell me more about that."

Appendix H: Sample Parent Interview Notes

1 experience w/ sign language productive

pic

"

as well

2 when [redacted] 1st screaming, pointing

gap in understanding

His relationship w everyone else

3 positive changes- incorp. sign + pec

A lot of progress

"excited"

4 extremely low functioning

5 Communicate by screaming

sign language - big difference

more than

anything

trying to verbalize

6 He screams and is getting better
bite, hit, fight b/c not
understand
fight w/ other children
taking toys away
want toys
only form to push, bite, screams

7
His social interactions are lacking.
He just watches others.
He tries to participate by sitting
close to play. He does not do imagiative
Play w/ toys.

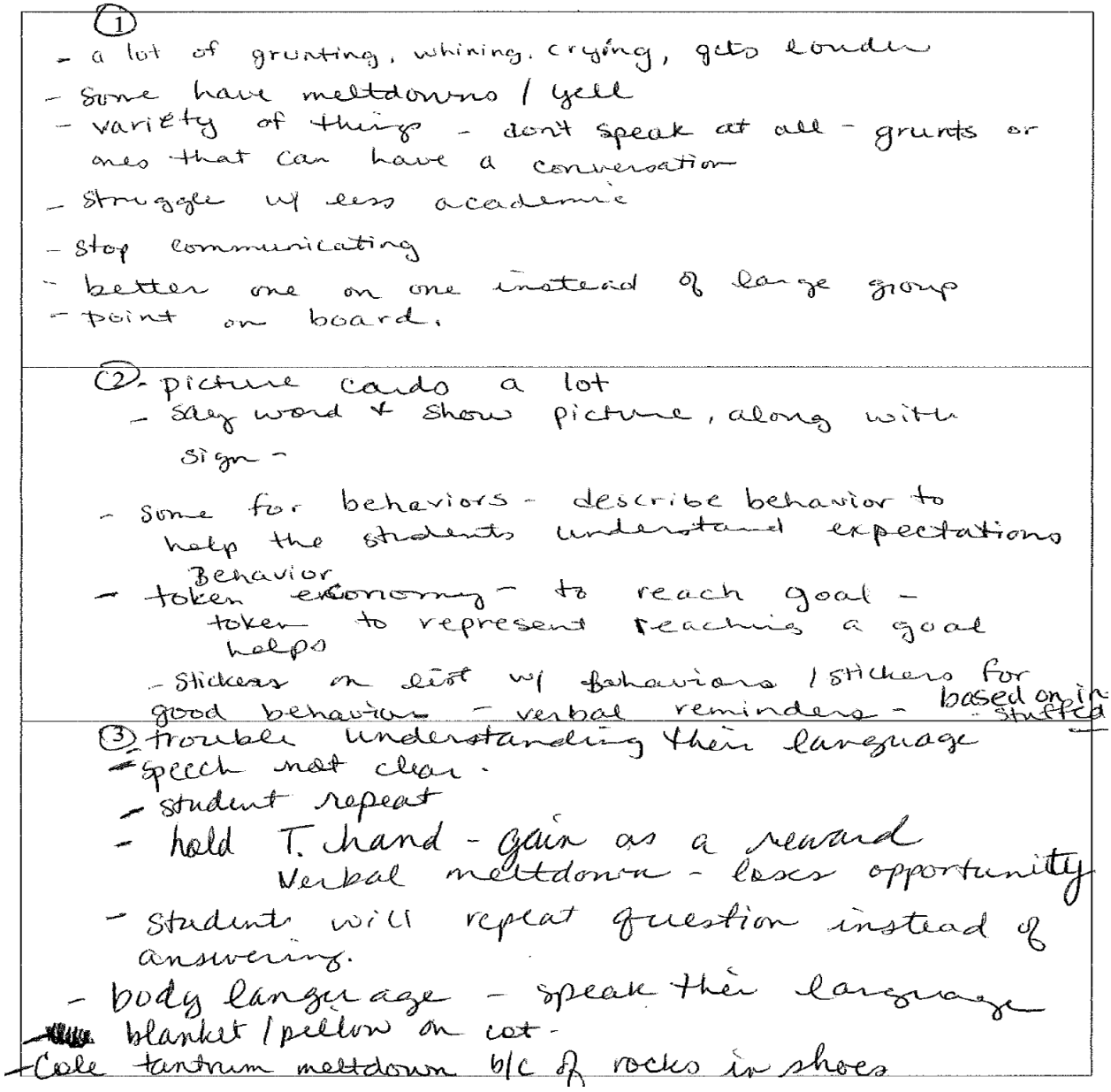
8 Trying to incorporate electronic
Communication forms
funding available for autistic children

Appendix I: Focus Group Prompts

1. How would you describe your students' ability to communicate as compared with his peers?
2. Explain how you and students with autism in your classroom communicate most often and how has this changed since using total communication methods?
3. Describe your experience when a child has difficulty with making wants and needs known.
4. Describe social interactions during play times or group learning times concerning the students in your classroom with communication delays.
5. Please describe any other concerns or needed resources to make using total communication more successful in the classroom.
6. What other suggestions, comments, or recommendations do you have to make this experience better for you and the students in your classroom

Respondents who offer one word or short phrase responses to any of the prompts will be asked to elaborate by saying, "Tell me more about that."

Appendix J: Sample Focus Group Notes



(1)
- a lot of grunting, whining, crying, gets louder
- Some have meltdowns / yell
- variety of things - don't speak at all - grunts or ones that can have a conversation
- Struggle w/ less academic
- stop communicating
- better one on one instead of large group
- point on board.

(2) - picture cards a lot
- say word & show picture, along with sign -
- Some for behaviors - describe behavior to help the students understand expectations
Behavior
- token economy - to reach goal - token to represent reaching a goal helps
- Stickers on list w/ behaviors / stickers for good behaviors - verbal reminders - based on in stuffed

(3) trouble understanding their language
- speech not clear.
- student repeat
- hold T. hand - gain as a reward
Verbal meltdown - loses opportunity
- Students will repeat question instead of answering.
- body language - speak their language
- blanket / pillow on cot -
Cole tantrum meltdown b/c of rocks in shoes

④ Our students love them, play on play grou
- Almost like they know - very affectionate
or sensitive. Sensitive w/ them.

- Ticklers w/ rules - helps w/ follow rules -
- droop tray - assisting -
jump in to help them be successful
caring sense.
- seek out others to play watches play
parallel play -

⑤

Training -
- Teachers need trainin
- how they think, lear

- How to
athe
in cla
- social
skill

more variety of picture cards
for more activities

6

Incorporating ~~large~~ Big Body play
Muscle skills

Appendix K: Data Collection and Analysis Timeline-Audit Trail

Task	**Date Completed**
Receive IRB approval	8/20/2015
Epoche prior to data collection	8/31/2015
Pilot study dates- Peer review of questions/PLS™-5 HCQ	8/20/2015-8/28/2015
Request recruitment list	8/21/2015
Receive recruitment list	9/7/2015
Distribute recruitment letter/consent forms	9/8/2015
PLS™ Distributed	Upon receipt of consent form
Deadline for consent form/PLS™ submission	Extended to 10/11/2015 due to small number of responses
Consent forms received	9/10/2015-10/1/2015
Schedule interviews	Upon receipt of PLS™-5 HCQ: 9/21/2015-10/1/2015
Conducted and transcribe interviews	9/21/2015-10/12/2015
Schedule Focus groups	10/12/2015
Conduct and transcribe focus groups	10/13/20-10/9/2015
Epoche after data collections	10/19/2015
Member checks for accuracy	10/22/2015-10/29/2015
Atlas.ti© data upload, code, analyze	11/2/2015-12/4/2015
Participant review of themes	12/10/2015
Analyze data –First draft chapters 4 and 5	12/4/2015-1/25/2016
Peer debriefing- peer review of data and findings	2/5/2016

Appendix L: Atlas.ti© Report-Open Codes and Themes

Code Families

HU: Beesley Dissertation

File: [E:\Beesley Dissertation.hpr7]

Edited by: GUEST

Code Family: Description of child's communication delays

Codes (1): [Communication delays]

Quotation(s): 25

Code Family: Description of child's socialization delays

Codes (1): [social skill delays]

Quotation(s): 37

Code Family: expressive language

Codes (5): [communicates with peers] [physical prompt] [picture cards] [Sign Language] [Vocalizations]

Quotation(s): 99

Code Family: Feelings

Codes (1): [Parent perceptions]

Quotation(s): 5

Code Family: Needed Resources

Codes (2): [Materials] [training]

Quotation(s): 18

Code Family: Needs not significant

Codes (1): [Needs]

Quotation(s): 4

Code Family: Parent perceptions

Codes (1): [Parent perceptions]

Quotation(s): 5

Code Family: receptive language

Codes (3): [Daily routine] [Following directions] [joint attention]

Quotation(s): 68

Code Family: social skills

Codes (6): [communicates with peers] [help from peers] [Learning activities] [Play with adults] [Play with peers] [Play with toys]

Quotation(s): 61

Appendix M: Atlas.ti© Report Themes

Code-Filter: All Themes

HU: Beesley Dissertation

File: [E:\Beesley Dissertation.hpr7]

Following directions

Vocalizations

Social skill delays

Physical prompt

Communication delays

Play with peers

Picture cards

Play with adults

Joint attention

Play with toys

Sign Language

Daily routine

Training

Materials

Learning activities

Communicates with peers

Parent perceptions

Needs

Help from peers

Appendix N: My Personal Experiences (sample)

Most of the preschoolers in my class have communication delays; many of them are not talking yet at three years of age and are considered non-verbal. Since many autistic students are non-verbal or functionally not communicating, an alternate method is required. Pictures and sign language are effective based on quantitative data. My thoughts concerning the use of total communication are that a combined method of using sign language, pictures, and verbalizations is the best intervention to aid non-verbal students in learning to communicate. My paraprofessionals, therapists, and I use this method in the developmental, special education classroom. This method works at school in improving the communication of the many non-verbal students that I work with each year. The use of total communication has not only increased the functional communication abilities of preschoolers with autism and many other disabilities, but has increased social interactions that these children experience as well.

My perception is that if the parents and teachers/therapists working with these autistic students are implementing this method of communication and they will see progress in student communication and social interactions. I am concerned that parents and inclusion teachers do not fully implement this communication method at home or in their classroom. I think they try, but they also give in to their child wants or needs, instead of giving the child a reason to communicate. I have made the materials available to the inclusion teachers and parents that I work with. I have also taught a workshop on how to use the pictures, words, and sign language together. I think that additional training and specific in classroom and at home support is required to make this more successful.

Appendix O: Sample Parent Interview Responses

INT: Discuss any problems you may be facing due to lack of communication ability or delays.

Jillian: Well, the problem is sometimes we don't know what he is wanting, but that has gotten so much better. A lot better. Cause used to me and him both would sit and cry because I was frustrated that I didn't know what he wanted and he was frustrated cause didn't know what he wanted so we would both sit and cry. But most of the time when he is pulling and waving and he is getting taller to reach it too.

INT: Is there anything else you'd like to mention about using total communication at home with your child?

Sharon: Um maybe we need to work on the sign language more um because I have witness children his age and older using it and it is a good way of communicating if you can't speak then that's the next step and it seems to work with other children , even if it is a couple of signs, that's better than nothing

INT: Describe any changes your child has experienced concerning communication.

Tara: Well positive changes since I spoke with you we incorporated sign language and some picture communication l and he is making a lot of progress. He is very excited when he realizes that he can communicate with us and we can understand him. He really uses help please and more please (signing).

INT: Explain how you and your child communicate most often and how has this changed since using total communication methods?

Katie: Until he started school, he would just point or make train whistle sound. He said a few words but didn't really talk. Now he is talking more but he still doesn't answer questions and stuff.

INT: Describe any changes your child has experienced concerning communication.

Ken: His speech is improving**.** He is using some sign language more to ask for things.

INT: Is there anything else you'd like to mention about using total communication at home with your child?

Tara: Yes, I would since, since we felt we were thrown in the situation and he arrived at our house nonverbal and we um we not very knowledgeable of his disabilities, I feel that educating parents or having a class would be very helpful so, so far you have helped with that but your assistance has been all we have received so far.

Appendix P: Sample Professional Focus Group Responses

INT: Explain how you and students with autism in your classroom communicate most often and how has this changed since using total communication methods?

Mary: One student we have is picking up new signs every day and using words, pictures and sign language very effectively. Since he started school a month ago, verbalizing only four words, he has significantly increased his verbal vocabulary, is using sign functionally and using some pictures during transistions and to manage behavior. He imitates every sign and word that we introduce and begins using them when we remind him to.

INT: Describe social interactions concerning the students in your classroom with communication delays.

Caroline: we ae seeing that the autistic children seek out others to play with in the classroom

Dawn: some are in parallel play, where they play with the same toys beside another student

Ann: On the playground they will play with peers and then want to interact with teachers and engage with them

INT: Please describe any other concerns or needed resources to make using total communication more successful in the classroom.

Kay: training would be good. I have always thought that because I have a child with autism and I would like for the teachers to be trained to know what is going on

INT: Explain how you and students with autism in your classroom communicate most often and how has this changed since using total communication methods?

Mary: One student we have is picking up new signs every day and using words, pictures and sign language very effectively. Since he started school a month ago, verbalizing only four words, he has significantly increased his verbal vocabulary, is using sign functionally and using some pictures during transitions and to manage behavior. He imitates every sign and word that we introduce and begins using them when we remind him to.

Danielle: One non-verbal student responds to a few signs receptively, but does not use them himself. He also does not respond to pictures. At the beginning of the year when this child started school, he did not respond to any means of communication, so we are seeing a slow increase in his receptive communication ability.

Abrielle: Another student responds to pictures and is using a few pictures in an exchange method to communicate. He also will receptively responds to signs paired with words or pictures such sit, all done, more, jump, play, drink, stop.

Mary: This has greatly improved since last year. We used the same methods with him, but he only attended school two days a week. This year he is at school four days a week and is making

progress. He now receptively understands all directions or questions directed to him. He can use pictures to make choices. He can use a button to request more. He is making some verbal approximations for words such as drink, fish, bottle (baba) and clearly calls for his Nana when he sees her arrive to pick him up.

Abrielle: Also, he picked up a Clifford book and sat down to look at it. While looking at it, he did the sign for dog.

Lynne: Another student we have is verbal, however he scripts cartoons or movies all the time instead of responding to others. However, he is beginning to repeat the sign language instruction as he does the movies he watches at home. He knows many signs and will use them to ask for more snack or for an activity instead of using words.

Mary: The twins that we had last year mainly made some unintelligible sounds, twin speak. They are now using verbal communication as a primary means of communication with some pictures to assist with transitions, directions, and routine throughout the day. They students interact with their friends. They talk with them and play with them. But they still are aggressive when they are asked to do a non-preferred task or when not wanting to share with friends.

Appendix Q: Sample of Memoing

Parent Interview 1:

- Emotional responses from parent and child when not able to communicate
- Used sign language and physical prompts with child who was present during interview
- See additional social interactions with sister instead of just parents

Parent Interview 2:

- favorably in description of total communication methods
- did not appear to have negative feelings toward the use of total communication
- Anticipates needs of her child
- See some changes – progress
- See that he notices other children now and tried to interact with them
- requested additional training and materials to learn more at home.

Parent Interview 3:

- Mother was very excited
- Short time use with huge results
- Positive attitude toward sign language and pictures
- asked if I was going to write a book for parents and teachers to use to learn more about total communication.

Focus Group 2:

Special education teachers see a lot of progress with students: increase in communication mainly. There is some increase in social skills. They continue to see that there are difficulties

with not using words or communication effectively to interact with peers. It was interesting to note that the parents often did not speak of as much progress in specific communication abilities as the professionals did. I feel that the professionals see the small steps in both social and communication development as the children progress, while parents are so often times busy with living their lives and taking care of their children that they do not see these baby steps.