

Running Head: DESIGNING A PARAPROFESSIONAL TRAINING PROGRAM

THE DESIGN OF A TRAINING PROGRAM FOR PARAPROFESSIONALS
WORKING WITH STUDENTS WITH AUTISM IN AN URBAN SCHOOL DISTRICT

A DISSERTATION

SUBMITTED TO THE FACULTY

OF

THE GRADUATE SCHOOL OF APPLIED AND PROFESSIONAL PSYCHOLOGY

OF

RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

BY

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IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE

OF

DOCTOR OF PSYCHOLOGY

NEW BRUNSWICK, NEW JERSEY

MAY 2015

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Abstract

The number of paraprofessionals supporting the education of students with disabilities has increased significantly in recent years; concurrently, there has been an expansion of the paraprofessional's role in the instruction of students, particularly for students with low incidence disabilities such as autism. There has also been an increase in the number of students on the autism spectrum who are being educated in their local school districts. Students with autism have very challenging support needs and are most likely to require paraprofessional support so they may be properly educated. The increasing reliance on paraprofessionals in public education raises concerns regarding their training and preparation to perform the multitude of tasks that they might be assigned. Models of best practices for educating students with autism recommend training paraprofessionals to fulfill specific responsibilities they encounter as part of their roles working with these students. The purpose of this dissertation was to design a training program for paraprofessionals working with students with autism in an urban school district in New Jersey. A needs assessment was conducted through interviews and surveys in the district and the training program was developed based on those results. Data collected indicated that the program should be targeted to recently hired paraprofessionals new to the assignment of working with students on the autism spectrum. This cohort of paraprofessionals would benefit from training to enhance their knowledge and skills in working with students with autism. The program consisted of five training sessions that addressed the following topics: Overview of Autism and the Autism Program, Basic Behavioral Concepts and Assessment, Behavioral Procedures, Teaching Procedures and Data Recording. In addition, a performance feedback component was included in order

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to reinforce the paraprofessionals' knowledge and skill acquisition from the trainings.

Detailed lesson plans were provided for each of the training goals. The limitations of the needs assessment and program design were discussed, in addition to recommendations and implications.

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Acknowledgements

First and foremost, I would like to express my deepest gratitude to my dissertation committee, particularly to my dissertation chair Dr. Kenneth Schneider, without whom this dissertation would not have been possible. Ken, I thank you for your guidance, your unwavering support throughout this process, and encouragement for me to persist despite obstacles along the way. Your expertise, knowledge and insight have been invaluable. I would also like to thank Dr. Karen Haboush for serving as my second committee member; I am grateful for your positivity, encouragement and support during this process. I truly appreciate all you have both done for me.

Thank you to the teachers, staff members and my friends at GSAPP. I am grateful for having had the opportunity to learn from so many wonderful professors and supervisors at GSAPP, including my committee members, who have inspired me and facilitated my professional development. I would like to extend a special thanks to Kathy McLean and Sylvia Krieger for their encouragement, guidance and patience in answering all of my many questions throughout my time at GSAPP; your help and dedication to the students at GSAPP is very much appreciated. In addition, I feel lucky to have had an amazing and supportive cohort - I would particularly like to thank my classmates and friends Ewa Lavin, Meredith Cregg-Wedmore, and Angie Crawford, for cheering me on and helping me believe I could finish this project.

Thank you to my family for all of your love and support. I am grateful to my parents and grandparents for emphasizing the value of education and for making sacrifices that allowed me to pursue educational opportunities. I am also grateful to have brothers who can always make me laugh, even in the most stressful of times.

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To Thy Tran, thank you for your encouragement, for making me laugh and for understanding when I had to spend nights and weekends working on my dissertation. I truly appreciate all of the cooking and cleaning you did for me so that I wouldn't starve and to free up my time for more writing.

Finally, to one of my dearest friends and favorite people, Rick Flynn, thank you for making the process of writing seem far less daunting. More importantly, thank you for supporting me unconditionally, actively listening to me vent, inspiring adventures, and for keeping me sane for half a lifetime.

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Chapter I

Introduction and Statement of the Problem

The purpose of this program was to develop and establish a standardized training program for the paraprofessionals who work as classroom and personal assistants for students with autism in an urban school district's self-contained autism program. The district's administrators and autism program staff identified the need for paraprofessional training. In this district, there are frequently new assistants working in the self-contained autism classrooms due to program expansion, an emergent need for a personal assistant and the need for staffing the extended school year program as well as staff attrition. The autistic population has very specialized needs and few of the paraprofessionals assigned to work in the program initially have any background or training in working with these students. Previously implemented training practices in the district were not standardized, consisting largely of on the job training as well as intermittent in-services provided by district behaviorists or consultants. This was problematic as the burden of training was placed largely on teachers who did not necessarily have the time or experience in providing training to adequately prepare the paraprofessionals; in addition, there was also a history of turnover in regard to the behaviorists or consultants that supplemented the on the job training such that that training practices varied depending on the people in those positions at the time and was contingent upon whether the district's budget could provide funding to employ those individuals. It is imperative to ensure the paraprofessionals working with these students are highly trained and effective in their roles. Creating and implementing a standardized training program in the district can decrease the impact of

the following: inconsistent quality of on the job training when teachers are new or lack experience in providing training, turnover of individuals in the program charged with providing training, in addition to the need for outside consultation and the corresponding expense. The district's needs were thoroughly examined using Maher's (2000) program planning an evaluation framework to conduct a needs assessment and design a training program.

In order to develop a training program for the paraprofessionals in the district, Maher's (2000) program planning and evaluation framework was utilized to conduct a needs assessment to gather the necessary information to design a program tailored to the district's needs. Relevant information collected included background and context information that could impact program implementation as well as the knowledge and skill areas that are most critical for paraprofessionals in performing their roles. The information collected through the needs assessment, in conjunction with a review of the relevant literature pertaining to paraprofessional training, was used to create program goals; select appropriate methods, procedures and materials for training; develop the program; and to document the program design for future use.

The following section of this dissertation will review the literature relevant to paraprofessional preparation in general as well as present research about autism and specific interventions indicated for students with autism; literature related to adult training and training practices specific to paraprofessionals working with students with autism will also be reviewed. Subsequent chapters will outline Maher's (2000) model that serves as a framework for this dissertation and methods, a clarification report presenting the results of data collection, the program design and a discussion that outlines

the limitations of the needs assessment and program design in addition to recommendations and implications.

Chapter II

Literature Review

Paraprofessionals

The number of paraprofessionals supporting the education of students with disabilities has burgeoned in recent years and has been accompanied with an expansion of the paraprofessional's role in the instruction of students (Giangreco, 2003; Giangreco & Broer, 2007; Giangreco, Edelman, Broer & Doyle, 2001; Giangreco, Sutter and Doyle, 2010; Ghre & York-Bar, 2007; Wallace, Shin, Bartholomay and Stahl, 2001). Recent data indicate that there are more than 312,000 paraprofessionals who are involved in servicing students with disabilities in the context of special education and that 40% of states have more full-time paraprofessionals than special education teachers (Carter, O'Rourke, Sisco & Pelsue, 2009; Giangreco, Sutter & Doyle, 2010; U.S. Department of Education, 2002, 2007). The trend of increasing reliance on paraprofessionals has been accompanied by concerns regarding the preparation of these individuals to perform the multitude of tasks that they might be assigned, both in terms of hiring prerequisites as well as training responsibilities to fulfill specific responsibilities they encounter as part of their individual roles.

Legislation and policy initiatives. Calls to improve educational outcomes for students with disabilities have resulted in legislative and policy initiatives that address the issue of paraprofessional qualifications, amongst other issues pertaining to providing children with appropriate educational services. Prior to these legislative and policy initiatives, schools in the United States educated only one in five children with disabilities (U.S. Department of Education, 2010). In addition, many states had passed

laws to exclude children with more severe disabilities from school, including students who were blind, deaf, emotionally disturbed or who had intellectual disabilities, denying them access to educational opportunities (U.S. Department of Education, 2010).

Landmark federal legislation was passed in 1975; the Education of All Handicapped Children Act (Public Law 94-142) guaranteed that all children receive a free and appropriate education that would be provided in the least restrictive environment. The law passed in 1975 and subsequent legislation provided support to children who had been completely excluded from access to the educational system as well as to children with limited access due to lack of appropriate staff and services to meet their unique needs; it is relevant to paraprofessional employment in that the some students require these services in order to receive a free and appropriate education in the least restrictive environment (Etscheidt, 2005; Giangreco, Edelman, Broer & Doyle, 2001). As a means of increasing the number of staff that would be necessary in order to implement this legislation in the schools, federal officials began to discuss training a new type of employee, paraprofessionals, to assist in educating children with disabilities. While increasing access to the education for disabled students represented progress in educational thought, the belief that many students with disabilities were not educable persisted and paraprofessionals, who were not required to have a college education or certification were considered to be an adequate and less expensive option for providing services (Giangreco, Edelman, Broer & Doyle, 2001).

In 1990, this Education for All Handicapped Children Act was amended and became the Individuals with Disabilities Education Act (IDEA), which was again amended and reauthorized in 1997 and 2004. Since the initial passage of the act

emphasis has slowly shifted to individualizing education and supports to meet a child's needs and hiring skilled and sufficiently trained staff to work with children with disabilities. The 2004 revision of IDEA, which is the law currently in effect, specifically addresses the preparation and supervision of paraprofessionals, requiring that qualifications for paraprofessionals be in line with any certifications, licensing and registrations approved by the state in which they work. This revision also stipulates that paraprofessionals who provide special education and other related services must be appropriately trained and supervised (Etscheidt, 2005; Giangreco, Edelman, Broer & Doyle, 2001). A licensed or certified professional practitioner must supervise paraprofessionals.

The No Child Left Behind Act of 2001, or NCLB, required that the preparation and assessment of paraprofessionals become more rigorous as well as limiting the activities that they could perform, defining the paraprofessional's responsibilities and outlining the way in which they must be supervised (Trautman, 2004). Specific requirements for paraprofessionals were put into place in order for schools to receive Title 1 federal funding. Before NCLB was passed, paraprofessionals were required to receive a high school diploma or a GED within 2 years of being employed (U.S. Department of Education, 2009). Following the implementation of NCLB, all paraprofessionals hired after January 8, 2002 were required to have completed two years of study at an institution of higher learning, which is the equivalent of 48 credits or a minimum of an associate's degree, before they could be hired. Another option beyond that of completing college coursework is taking and passing a formal state test that reflects knowledge and the ability to assist in reading, writing or mathematics instruction;

some of the assessments that have been approved by states include ParaPro, WorldKeys, ParaEducator, the Paraprofessional Assessment of Knowledge and Skills (PAKS) and the Western Governors University Exams (U.S. Department of Education, 2009). Some states have developed alternate approaches such as accumulating training points to achieve qualified status in Massachusetts or participating in a yearlong program in Tennessee (U.S. Department of Education, 2007a). These alternate approaches may be more practical as they assist the paraprofessional in gaining the skills needed to perform in their job setting, which may not necessarily be addressed by the coursework taken by a paraprofessional or studying for one of the state approved tests. Paraprofessionals are exempted from these requirements only if they are hired as a translator in order to enhance the participation of a student or students in the classroom or to perform the following activities that do not involve direct contact with children on a full time basis: conducting parental involvement activities, working as a cafeteria or bus aide or performing clerical duties. Paraprofessionals who were hired before January 8, 2002 were required to meet these requirements before the end of the 2005-2006 school year.

Beyond defining the qualifications required of paraprofessionals, NCLB has limited the range of activities to which Title I schools may assign paraprofessionals (U.S. Department of Education, 2007b, 2009). According to NCLB, instructional paraprofessionals can function as one-on-one tutors for eligible students or tutor groups of students only if they are performing this role when the student is not scheduled to receive instruction from a teacher. Paraprofessionals are also allowed to assist in classroom management, including organizing instructional materials and implementing behavior plans, in addition to providing assistance in a computer laboratory, library or

media center. Title I paraprofessionals also may serve as a translator or conduct parental involvement activities. Paraprofessionals who support instruction are required to do so under the direct supervision of a highly qualified teacher; the highly qualified teacher must plan the lessons and instructional activities a paraprofessional carries out, evaluate the achievement of the students with whom the paraprofessional is working and work in close proximity to the paraprofessional (Etscheidt, 2005; Trautman, 2004; U.S. Department of Education, 2004; Yell, Drasgow & Lowrey, 2005).

Legislation vs. practices: typical roles of paraprofessionals. While IDEA and NCLB have had a positive impact in that schools are accountable for providing meaningful and appropriate educational experiences and supports to children with disabilities, research on paraprofessionals indicates that not only do paraprofessionals typically have greater responsibilities than mandated by current legislation, but that they also lack the necessary training, experience and supervision to perform these responsibilities (Giangreco, Edelman, Broer & Doyle, 2001). Over time, the role of the paraprofessional has evolved and now paraprofessionals are often very involved in providing instruction, collecting data, adapting materials, assisting with functional assessments and implementing interventions (Carter, O'Rourke, Sisco & Pelsue, 2008; Downing, Ryndak & Clark, 2000). In a review of literature relevant to paraprofessional supports that was published between 1991 and 2000, Giangreco, Edelman, Broer and Doyle (2001) found that the roles most commonly reported by studies of paraprofessionals included providing instruction in academic subjects and life skills, collecting and managing data, working with students with behavior issues, assisting with peer interactions, providing personal care such as assistance with the bathroom or feeding

as well as performing clerical tasks. Other tasks identified as pertaining to paraprofessional job responsibilities were assisting in testing and assessment, lesson and activity planning, adapting and modifying materials and communicating with parents. Findings of studies involving interviews and surveys of paraprofessionals were congruent with those of Giangreco, Edelman, Broer and Doyle (2001). Paraprofessionals reported that they were expected to provide behavioral support, administer direct instruction, adapt and modify materials and activities, assist with personal care and interactions with peers, prepare for or participate in IEP meetings and complete clerical tasks; there is controversy as to whether these roles are appropriate for paraprofessionals based on the training that they receive. (Carter, O'Rourke, Sisco & Pelsue, 2008; Downing, Ryndak & Clark, 2000).

General training practices for paraprofessionals. Several issues have been identified in the research that has examined paraprofessional training. One issue is that teachers frequently allow paraprofessionals to assume instructional responsibilities for students under the assumption that they have been trained in instructional design and implementation despite research indicating that paraprofessionals receive little to no training (Giangreco, 2003; Wallace, Shin, Bartholomay and Stahl, 2001). The problem created by the assumption that paraprofessionals are trained for their roles is exacerbated by the fact that paraprofessionals are rarely provided with initial training before they start working and therefore are working with students without necessarily knowing how to perform their responsibilities (Giangreco, Broer & Edelman, 2002). If teachers assume that paraprofessionals are trained and no training has occurred, it creates a situation in

which paraprofessionals have to learn how to perform their role without adequate assistance while on the job.

In a survey administered by Carter, O'Rourke, Sisco & Pelsue (2008), paraprofessionals reported that the most common form of training they received was on-the-job training, followed by in-service training, unspecified types of training and conference training. The authors suggest that the prevalence of on-the-job training as the most common form of training provided to paraprofessionals indicates that the typical approach to training by schools is informal and lacks standardization; as a result, the quality of the training is dependant on the person who is providing the training. Teachers often lack the training required to train and supervise paraprofessionals and feel unprepared to take on that role (Wallace, Shin, Bartholomay and Stahl, 2001). If schools choose to provide on-the-job training, it is essential to ensure that capacity is built among the teachers expected to provide the training in order to enhance the quality and efficacy of on-the-job training. The paraprofessionals participating in the survey also reported that they were commonly trained in basic terminology, rules and procedures to manage student behaviors, purposes of programs for students with disabilities, the impact of disabilities on a student's life and ethics; however, there may be a disconnect or lack of relevance between the training that is offered and the actual training needs of paraprofessionals (Wallace, Shin, Bartholomay & Stahl, 2001). Since paraprofessionals may be assigned to students with diverse needs, general trainings might not impart the skills they require to be successful in performing their individual responsibilities.

It is important to provide specialized training to paraprofessionals due to the diverse nature of needs of students with disabilities, both in terms of addressing the needs

of children with different disabilities but also to address the varying expression of symptomatology for individuals who are diagnosed with a given disability.

Paraprofessionals who are assigned to work with students with high incidence disabilities, or disabilities that occur more frequently such as learning disabilities, would be required to perform very different tasks than those performed by paraprofessionals working with students with low-incidence disabilities such as autism (Carter, O'Rourke, Sisco & Pelsue, 2008); however, even paraprofessionals working exclusively with students with autism may find themselves working with students who range from very low functioning to giftedness. There has been an increasing reliance on paraprofessionals particularly for students with low incidence disabilities who have the most challenging support needs and difficulties with learning (Carter, O'Rourke, Sisco & Pelsue, 2009; Giangreco, Edelman, Broer & Doyle, 2001; Wallace, Shin, Bartholomay & Stahl, 2001). Students with autism often require a one-to-one staff to student ratio and often spend more instructional time with paraprofessionals than they do with their teacher (Scheurmann, Webber, Boutot & Goodwin, 2003).

Autism

Kanner (1943) published the first paper describing autism as a condition in childhood, in which individuals presented with significant impairments in social interaction and communication as well as a resistance to change. The children Kanner studied had difficulty relating to others, which he felt was the primary characteristic of autism, in addition to speech delays and issues such as echolalia and pronoun reversal; he also noted that these children had excellent rote memories and preferred routines becoming upset when their schedules were disrupted. This paper is significant in that

previously, children with autism were diagnosed with disorders such as epilepsy, mental retardation, brain dysfunction, schizophrenia or hearing impairments due to their lack of communication with the outside world. Kanner's subjects were seemingly very diverse yet he was able to identify their shared features and gave their disorder a name (Grinker, 2007). One year after Kanner's paper was published, Asperger wrote a paper about a related pattern of behavior, autistic psychopathology, that became known as Asperger's syndrome; the disorder Asperger described was characterized by features such as high intelligence, lack of eye contact, clumsiness and a restricted range of interests and has since been considered to be a higher functioning form of autism (Grinker, 2007; Wing & Potter, 2002). The children that Asperger studied had social and behavioral deficits, similar to those Kanner observed in his subjects, however, they did not have the symptom of delayed speech. Over time, the diagnostic criteria have changed and autism is now considered to be a spectrum disorder that includes some of the features from Kanner's and Asperger's conceptualizations of the disorder in addition to reflecting ongoing research (American Psychiatric Association, 2013). With symptoms ranging from mild to severe, individuals who have the disorder may express different symptoms and have varying ranges of functioning. Kanner's and Asperger's work was the first step in identifying the criterion that is now used to define autism today, leading to further research, increased identification of individuals with autism and a better understanding of the needs of individuals with autism which can be applied to educational settings. It is critical that those working with students with autism in schools have an understanding of the complexity of this disorder as well as the appropriate skills in order for them to provide educational services that meet the needs of this population that can be very

challenging to work with. Staff training is a critical component in enhancing the knowledge base and skills of the paraprofessionals who work with students with autism, as they have the least training and in some situations, the most direct contact with these students due to the need for individualized instruction in the most severe cases.

Epidemiology. At the time Kanner and Asperger's work was published, autism was believed to be a rare condition, occurring approximately in two to four of every ten thousand children; however, studies conducted in the 1990s and more recently have reported prevalence rates of anywhere between twenty to sixty cases of autism out of every ten thousand individuals (Palmer, Blanchard, Jean & Mandell, 2005; Rutter, 2005; Williams, Higgins & Brayne, 2006; Wing & Potter, 2002). A study that was released in December of 2009 by the US centers for Disease Control and Prevention (CDC) found that 1 in 110 children was classified with an autism spectrum disorder, a 57% increase from a previous analysis in 2002 which indicated that 1 in approximately 150 children was classified with an autism spectrum disorder (CDC, 2009; Mitka, 2010). The most recent study by the CDC, released in 2010, found that 1 in 88 children was classified with an autism spectrum disorder, a 78% increase from the 2002 data (Kuehn, 2012). While autism continues to be a low incidence disability, this rise is significant in terms of the level of services required to address the unique and diverse needs of children on the spectrum, including the increased need for paraprofessional support. The reported increase in both the prevalence, the proportion of a population that is diagnosed with autism at a single point in time, as well as the incidence, the number of new cases of autism in a given period of time, has led to what has been called an "autism epidemic" in

the media. Researchers have posited explanations for this increase, though they have not been able to entirely rule out an actual increase in cases of autism.

Studies have suggested the following explanations for increases in the incidence and prevalence of autism: changes in the diagnostic criteria, the realization that there is the potential for comorbidity with other disorders, heightened public awareness with accompanying federal legislation, a true increase in numbers and better diagnosis (Grinker, 2007; Kuehn, 2012; Rutter, 2005; Williams, Higgins & Brayne, 2006; Wing & Potter, 2003). Kanner's original diagnostic criteria was more restrictive than the current set of criteria, requiring an individual to display aloofness and indifference to others as well as an extreme resistance to changes in routine which manifested before the age of two in order to receive the diagnosis of autism; in addition, Asperger's syndrome was conceptualized as a separate disorder from Kanner's autism. The less inclusive criteria as well as the distinction of separate types of autism may have impacted incidence and prevalence rates, since only some of the individuals who would now be diagnosed with autism were included in the research (Wing & Potter, 2003). The concept of a spectrum of autism, in which autism is viewed as impairments in the areas of social interaction and communication, in addition to having a narrow range of interests or activities that could vary in severity and form did not emerge until the 1970s (Wing & Potter 2003). Today, the autism spectrum includes not only classic autism, but also the disorders previously referred to as Asperger's Syndrome and Pervasive Developmental Disorder, Not Otherwise Specified (American Psychological Association, 2000; American Psychological Association, 2013a). The broadening of the concept of autism has resulted in an increase in the inclusion of individuals at opposite ends of the spectrum, those who

are severely impaired and those who are mildly impaired, who are diagnosed and are eligible for educational and other services (Grinker, 2007; Rutter, 2005). The changing criteria from early studies to current studies could account for the increase in prevalence because more individuals now fit the criteria of autism, resulting in higher prevalence rates. The criteria that studies use or alternately, the way in which researchers interpret the diagnostic criteria can also impact autism rates. In addition, recent research indicates that there has been a rapid growth of autism and related disorders in minorities; minorities have had historically lower rates of autism diagnoses, suggesting a trend of better diagnosis (Kuehn, 2012).

The inclusion of individuals with comorbid disorders is related to the broadening of diagnostic criteria. Kanner believed that children with autism were of normal intelligence and that autism was a unique disorder, thereby excluding children with other developmental and physical disabilities from a diagnosis (Wing & Potter, 2003). Children with lower intelligence were typically classified with intellectual disability or learning disabilities; however, it is now recognized that children with autism can range from very low intelligence to very high intelligence. Comorbidity with other disabilities is also recognized. Other conditions that commonly occur with autism include epilepsy, Fragile X, cerebral palsy, phenylketonuria, Turner's syndrome, tuberous sclerosis, Tourette's syndrome, and Down's syndrome (Grinker, 2007; Williams, Higgins & Brayne, 2006; Wing & Potter, 2003). Some children may also have depression, obsessive-compulsive disorder along with unusual attention, learning and processing abilities or deficits (Watts Hull, 2010). The broadening of diagnostic criteria, in conjunction with recognizing and including children with comorbid disabilities has

resulted in a very diverse set of needs that school districts are now legally required to address.

Beyond changes to the diagnostic criteria for autism, the growing public awareness of autism and the resulting legislation has impacted incidence and prevalence rates (Grinker, 2007; Wings & Potter, 2003). Public awareness of autism began to spread after parent associations developed with the goal of obtaining educational services and treatment for their children with autism (Grinker, 2007; Wings & Potter, 2003). This increased awareness of and interest in autism led to a corresponding rise in awareness amongst educational and clinical professionals as well as more research, media coverage and a higher likelihood that parents, teachers or pediatricians identify symptoms that would result in an autism spectrum diagnosis; necessitating an increased number of trained paraprofessionals working with students with autism in the educational setting (Williams, Higgins & Brayne, 2006).

Current diagnostic criteria. *The Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-V; American Psychological Association, 2013a) is a manual that is widely used by clinicians to diagnose and classify mental disorders. In the previous edition, the DSM-IV-R, an individual with autism could be diagnosed with one of four different disorders, including Autistic Disorder, Asperger's Syndrome, Childhood Disintegrative Disorder or Pervasive Developmental Disorder, Not Otherwise Specified (American Psychological Association, 2000; American Psychological Association, 2013); The DSM-V now has one category, referred to as Autism Spectrum Disorder (ASD), that consists of some features associated with the four previously existing disorders. There is some controversy regarding the new criteria, as several studies that

examined whether individuals that qualified for an autism diagnosis under the DSM-IV-TR would retain their diagnosis under the DSM-V found that a significant number of individuals no longer met criteria; this is particularly true of individuals classified under the categories of Asperger's Disorder and Pervasive Developmental Disorder (Gibbs, Aldridge, Chandler, Witzlsperger & Smith, 2012; Matson, Hattier and Williams, 2012; Tsai, 2012; Wing, Gould and Gillberg, 2011; Worley & Matson, 2012). As service provision is often dependent on current diagnostic criteria, there is concern that individuals with significant impairments who no longer meet criteria may lose access to services that are still needed. It remains to be seen how this will impact access to resources in different areas, including education. For example, in states such as New Jersey, the eligibility of students with autism for special education and related services is linked to obtaining a medical diagnosis of autism in conjunction with a concurrent communication impairment as described in N.J.A.C. 6A:14-3.5(c)2.

In the revised criteria for ASD as outlined in the DSM-V (American Psychological Association, 2013a), the core features include deficits in reciprocal social communication and social interaction as well as restricted or repetitive patterns of behavior, interests or activities. In each of these two areas, the severity of symptoms is rated as requiring support, requiring substantial support or requiring very substantial support. To receive a diagnosis, an individual would have to demonstrate all of the following deficits in social communication and interaction in order to meet the criteria for ASD: deficits in social-emotional reciprocity; deficits in nonverbal communicative behaviors used for interacting socially; as well as deficits in developing, maintaining and understanding relationships. Some examples that illustrate these deficits include

difficulties with social approach and back-and-forth conversation, failing to initiate or respond to social interactions, decreased sharing of emotions or affect, poor eye contact, unusual body language, difficulties in understanding body language, an inability to understand and adjust behavior to suit social contexts, difficulties in making friends or an absence of interest in others. In terms of the criteria of restricted or repetitive patterns of behavior, interests or activities, an individual would have to demonstrate at least two of the following: stereotyped or repetitive motor movements, use of objects or speech; insistence on sameness, inflexible adherence to routines, or ritualized patterns of behavior; highly restricted, fixated interests; and over or under-reacting to sensory input or unusual fixation on sensory stimuli. This might present as lining up toys, echolalia, becoming unusually upset at small changes or transitions, extremely limited or obsessive interests, distress when faced with certain sounds or textures and a failure to react to pain or temperature. In addition to the deficits described above, symptoms must be present in early childhood and cause clinically significant impairment in important areas of functioning. The most recent prevalence of autism in the United States has risen in recent years and currently approximately 1% of the population is diagnosed with the disorder (American Psychological Association, 2013a).

While symptoms of individuals with autism range on a continuum from mild to severe, the deficits that comprise the diagnosis are often comorbid with other disorders and medical conditions. ASD is frequently associated with intellectual and language impairments; about 70% of individuals have one comorbid disorder and about 40% have two or more disorders in addition to their autism spectrum disorder diagnosis. (American Psychological Association, 2013a). Other conditions that commonly occur with autism

include obsessive-compulsive disorder; epilepsy, Fragile X, cerebral palsy, phenylketonuria, Turner's syndrome, tuberous sclerosis, Tourette's syndrome, attention deficit disorder, specific learning disabilities, sleep problems, developmental coordination disorder, anxiety disorders, depressive disorders and Down's syndrome (American Psychological Association, 2013a; Grinker, 2007; Watts Hull, 2010; Williams, Higgins & Brayne, 2006; Wing & Potter, 2003). The broadening of diagnostic criteria, in conjunction with recognizing and including children with comorbid disabilities has resulted in a very diverse set of needs that school districts are now legally required to address.

Core features: social impairments. Social interaction deficits are a key feature of the autism diagnosis. Children with autism may not respond to their name when called, avoiding eye contact and seemingly lack attachments to people, even their caregivers (National Institute of Health, 2008, Watts Hull, 2010). Those with autism have difficulty in learning to read social cues that indicate what others may be thinking or feeling as well as seeing things from another person's perspective, both of which make it difficult to predict or comprehend the people's actions (Macintosh, Reichman-Decker, Winkelman & Willbarger, 2006; National Institute of Mental Health, 2008). Individuals with autism may also have difficulty with regulating their emotions, resulting in outbursts that can include crying, yelling or physical aggression (National Institute of Mental Health, 2008). These outbursts can cause others to keep their distance, thereby decreasing the amount of social interaction available to individuals with autism and exacerbating existing difficulties with social interaction. Developmental theories of autism suggest that impairments in social attention early on deprive an individual with

autism from receiving social information and that the deprivation further disrupts the development of the brain and appropriate behaviors (Dawson, et al., 2004). The social impairments of autism at their most severe would make the world a bewildering place due to the inability to make predictions and understand the world. At the less severe end of the continuum, social impairments would make it difficult to form relationships and understand social conventions.

Researchers have examined some of the features of social impairments in autism. Dawson et al. (2004) performed an experiment to assess social orienting, the ability to independently attend to naturally occurring stimuli; joint attention, the ability to interact through sharing, following and directing the attention of another; and attention to distress, attending prosocially to another's distress. The results of the study indicated that preschool children with autism were significantly impaired in their ability to socially orient, to engage in joint attention and in their attention to distress. The impairments of children with autism in social orienting applied to both social and non-social stimuli, though the impairment was more pronounced with social stimuli. Joint attention was the most sensitive in terms of discriminating children with autism from children with other developmental disabilities and typically developing children; 83 percent of children could be identified as having autism when their ability to engage in joint attention was observed, followed by their ability to socially orient. The authors concluded that joint attention and social orienting could be useful in identifying young children with autism. It was also suggested that children with autism were less likely to be motivated by social stimuli and that finding ways to increase their motivation in this area could be useful. The behavioral symptoms of autism can also impact social impairments. Stereotypic behavior,

self-injurious behavior, social avoidance and other challenging behaviors that individuals with autism engage in decrease opportunities for social learning and can negatively impact the development of social skills over time (McConnell, 2002).

Core features: communication impairments. The pattern of communication impairments manifested by individuals with autism can take varying forms. Some children with autism never develop speech and some lose it after a few months, while others have significant delays in speech acquisition or use speech in unusual ways (National Institute of Mental Health, 2008). In terms of nonverbal communication, facial expressions and gestures might not match the intent of a person with autism spectrum. When those with autism are unable to communicate what they need or want through verbal or nonverbal means, screaming or physical attempts to obtain objects, escape or attention may result. Some children without the ability to communicate verbally can be taught sign language or to point to pictures as alternate means to communicate; the child must first be taught to point to a physical object or action before moving on to the more complex task of associating and utilizing a sign or a picture as a symbolic representation.

Beyond nonverbal communication, research indicates that language deficits of young children with autism who can speak can be categorized under two general types. One type is characterized by deficits that involve language reception and production of speech sounds while the other involves deficits in semantics, comprehending the meaning of language, and pragmatics, the ability to use language to communicate effectively, process language and engage in discourse (Rapin & Dunn, 2003). Children with autism appear to have significantly more severe and pervasive deficits in comprehension and

pragmatics than children with developmental language disorders who are not classified with autism.

There is a range in the severity of language disorder amongst individuals with autism who can speak. Some of the unusual usages of speech exhibited by verbal individuals with autism with more severe symptoms include flat intonation, singsong speech and the confusion of personal pronouns. Individuals with autism may also engage in echolalia, the repetition of words or phrases that are said by another person; while this was once considered to be nonfunctional, it is now viewed as serving a function specific to an individual, such as to request a caretaker to recreate the situation in which a repeated phrase was originally associated or as a means of rehearsing language that the individual is in the process of acquiring (Tager-Flushberg, Paul & Lord, 2005). These symptoms are characteristic of classic autism. A significant number of those who are lower functioning on the autism spectrum may never develop speech at all. In contrast, other individuals with autism who have less severe symptoms, such as mild delays or even advanced language and vocabulary, might have significant difficulty in sustaining a conversation, constructing a narrative, taking the perspective of another person or interpreting someone's tone of voice, facial expression and body language as conversational cues (National Institute of Mental Health, 2008; Rice, Warren & Betz, 2005). Milder language delays and advanced language are typically seen on the higher functioning end of the autism spectrum. Despite these difficulties, these individuals have strengths in reading skills such as decoding and spelling; Approximately 5-10% of individuals with autism are hyperlexic, which is characterized by advanced word recognition, a preoccupation with reading, letters or writing as well as a discrepancy

between strong word recognition and weak comprehension of reading material (Tager-Flushberg, Paul & Lord, 2005). Weaknesses in reading parallel language weaknesses in that comprehension deficits are typically found in both skill sets. Adults with these disorders may improve in comprehension of discourse but will likely have continuing issues with maintaining conversations, taking turns in conversation, discussing subjects of interest to a conversational partner as opposed to their own particular topics of interest, intonation and socially appropriate eye contact (Rapin & Dunn, 2003). Some individuals with autism continue to display unusual speech patterns throughout their lifetimes. The ability to use functional language by the time an individual with autism reaches school age is indicative of better long-term outcomes and children who are able to engage in the social behaviors of joint attention and imitation are more likely to acquire language (Tager-Flushberg, Paul & Lord, 2005).

Core features: restricted, repetitive and stereotyped behaviors. Individuals with autism may exhibit a diverse range of peculiar behaviors and behavioral deficiencies. Those with autism may have limited interests and react to the slightest change in routine as though it is catastrophic (Watts Hull, 2010). In terms of play, children may lack interest altogether and if they are interested, may engage in stereotypical play that may involve obsessively lining up toys in the same patterns or becoming very attached to just one toy, as opposed to engaging in pretend play and exploring a variety of toys and objects which is typical of normally developing children (Watts Hull, 2010). If someone were to accidentally move one of the toys or if a favorite toy were misplaced, a child with autism would become extremely upset (National Institute of Mental Health, 2008). Children with autism often become upset when any

part of their daily routine is disrupted. In addition, repetitive movements may also be observed, such as rocking back and forth or flapping of the hands or arms, despite having good muscle control and otherwise appearing physically normal; toe walking or suddenly freezing in place are other behaviors that are common of individuals with autism (National Institute of Mental Health, 2008). These behaviors are concerning as they can be socially inappropriate and stigmatizing, take up a great deal of time, interfere with family activities and lead to anxiety, agitation and disruptive behavior when routines are changed (Lam & Amam, 2007).

Turner (2009) reviewed the research on repetitive behavior that she describes as a general term for behaviors that are repetitious, rigid, invariable and inappropriate. The broader term can be divided into two categories: one consists of lower-level behaviors including stereotyped movements, repetitive manipulation of objects and repeated self-injurious behaviors and the other consists of more complex behaviors. This higher-level category includes object attachments, a need for following a routine, repetitive language and restricted interests. According to Turner (2009), stereotyped movements are found at higher rates in young children who met diagnostic criteria for autism; in addition, the extreme distress elicited by disruptions to routine and elaborate rituals that involve the activities of other individuals are infrequently found in individuals without autism. One possible explanation for repetitive behavior is that it is learned and that these behaviors are reinforcing since the behavior provides perceptual, auditory, visual or tactile stimulation; providing an equivalent alternative form of stimulation has been shown to decrease repetitive behaviors as has removing the sensory consequence of the behavior. It is likely, however, that repetitive behavior is determined by a number of factors,

depending on the individual and his or her environment. Some interventions for these behaviors have included contingency procedures, including time out or overcorrection after the undesirable behavior occurs, which are not particularly effective. Other interventions include rewarding an individual for not displaying a behavior such as in differential reinforcement of other behavior or differential reinforcement of incompatible behaviors. Completing a functional assessment to determine the function that maintains the repetitive behavior is recommended.

Educational Implications of Autism

In 1991, autism was included as a reporting category in the Individuals with Disabilities Education Act for the first time. The creation of a new category will typically result in a large initial growth in numbers; evidence for this is demonstrated by a similar increase in the classification of traumatic brain injury, which was also added as a category that year (Grinker, 2007). Including autism as a category also contributed to increasing awareness of autism. The US Department of Education Statistics reflected a national increase in the number of autism cases by 23 percent in 1993, the year after autism became an IDEA category (Grinker, 2007). The number of school age children with autism identified under IDEA grew from 53,644 in 1988 to 337,572 in 2008, which represents an increase in prevalence from .08 to .45 percent (Watts Hull, 2010). While this may seem to be a very small proportion of all school age children, the increased number of students with autism in the school system has placed a strain on districts, teachers and support staff, who have to find ways to meet the intensive needs and challenges presented by these students. In terms of the population eligible for special services, the proportion of children with autism rose from less than 1 percent in 1998 to

5.1 percent in 2008 (Watts Hull, 2010). Regardless of the explanations for the increase in the rate of children with autism, school districts are required to provide special education services to children with autism from birth to age 21; this can include enrollment in specialized classrooms or schools, one-on-one instruction, inclusion with supports, behavioral interventions, speech therapy, occupational therapy, physical therapy, paraprofessional support and more depending on the specific nature of the needs of a student with autism (Palmer, Blanchard, Jean & Mandell, 2005). These needs will depend on which features of autism an individual manifests as well as the severity. While autism continues to be a low incidence disability, the rise in numbers of students in the educational realm is significant in terms of the level of services required to address the unique and diverse needs of children on the spectrum. Providing staff with appropriate training to meet the needs of these students is imperative in order to meet their needs as well as to prevent school districts from being involved in costly litigation.

The cost of autism. Under IDEA, children with autism are entitled by law to a free an appropriate education (FAPE) in the least restrictive environment (LRE) from the age of three to the age of twenty-one. Autism is one of the most expensive disabilities to treat in an educational context due not only to the significant needs of these students but also because of the cost of litigation. The Special Education Expenditure Project (SEEP), the most recent study commissioned by the US Department of Education to examine spending on special education, indicates that in 1999-2000 the average cost of educating a regular education student was \$6,556 while the cost of educating a student with autism was \$11,543, the highest per pupil expenditure of the 13 IDEA disability categories included in the study; the study also states that students sent to non-public or out of

district schools is \$25,550, 3.9 times the cost of educating a typically developing student (Chambers, Shkolnik, & Perez, 2003). More recently, intensive interventions in settings such as full time programs are estimated to average about \$40,000 per student per year (Shattuck & Grosse, 2007). Lavelle et al. (2014) found that when comparing with and without parent reported autism spectrum disorder that an average of \$8610 more was spent by school districts to educate a student with autism and that school services were the biggest contributor to costs associated with autism in childhood as a result of increased special education resources assigned to these students. Another study reported that public schools in the United States pay an average of \$18,790 per year for a student with autism in comparison to \$6,556 a year for a typically developing student (Watts Hull, 2010). Shattuck & Gross (2007) extrapolated upon the results of the study, adjusting for expenditure and multiplying by the total enrollment of students with autism during the 2004-2005 school year, estimating that \$2.3 billion was spent in America to educate students with autism for that school year. The cost of special education services such as special classes and related services for students with autism are higher than those for any other disability due to the highly specialized needs of these students, which is reflected in the higher per pupil expenditures.

Depending on a student's needs, they may need related services such as a reduced student to teacher ratio, occupational therapy, speech therapy, physical therapy, feeding therapy, assistive technology, counseling or one-on-one paraprofessional support. Some of these services can substantially increase the cost of educating a student with autism. According to the Bureau of Labor Statistics (2013), in 2012, paraprofessionals on average made \$25,310 per year and more in some states; for instance, the average in New Jersey

was \$26,710 per year. A student with autism who requires a one-on-one aide or a 2:1 classroom aide in order to derive benefit from the educational curriculum would therefore cost more to educate than a typically developing child. Studies have found that paraprofessionals have left their positions because they were asked to perform duties that they felt were unsafe, tasks for which they had not received training or tasks beyond the reasonable expectations of the job, all of which contribute to stressful working conditions; this paraprofessional turnover which can stem, at least in part, from lack of training leads to additional costs, including the time involved in recruiting, screening, interviewing, orienting and ongoing training as well as the potential disruption and corresponding adverse impact on the academic progress of students with autism (Giangreco, Sutter & Doyle, 2010). Hiring, training and retaining paraprofessionals can decrease both the financial cost of turnover to school districts as well as any negative impact on the education of students with autism, who have difficulty with changes to their routines.

Since autism was added as an IDEA category in 1990 both the numbers of students classified with autism and court cases involving students with autism has risen dramatically but not proportionally. It has been argued that the higher cost of educating a student with autism is a factor in the higher proportion of litigation involving students with autism, as there are higher stakes involved (Yell, Katsiyannis, Drasgow & Herbst, 2003; Zirkel, 2011). Children diagnosed with ASD receive a significantly higher amount of special education and related services as well as total hours of service than their peers with other disabilities, even when the severity of the disability was taken into consideration (Bitterman et al., 2008). One study reported that court cases involving

FAPE/LRE were more than 10 times as likely to involve a student with autism than any other classification within the special education population when cases between 1993 and 2006 were examined; in addition, results indicated that the proportion of autism court cases is higher than the proportion of autism enrollments within the time frame of the court cases included in the analysis (Zirkel, 2003). One of the procedural violations that could cause a school district to be taken to court is the lack of qualified personnel to work with students on the autism spectrum; a district violates IDEA if those who implement a student's IEP do not have appropriate and adequate preparation and training to provide services to which the student is entitled (Mandlawitz, 2002; Yell, Katsiyannis, Drasgow & Herbst, 2003). School districts are more likely to attain favorable outcomes in court when staff working with students with autism have adequate training and experience (Mandlawitz, 2002). The selection of paraprofessionals is an administrative prerogative unless the choice of paraprofessional deprives a student of FAPE or prevents the student from benefitting from the educational program provided; when parents allege that staff are not appropriately qualified, school districts have been able to win in court by establishing the qualifications of staff members as well as that paraprofessionals were sufficiently trained (Etscheidt, 2005). In the absence of adequate training for paraprofessionals school districts can risk additional litigation, as the paraprofessional could be in danger of injury with certain students with severe behaviors; in addition, if an aide has received appropriate training and a student sustains an injury for which the district is taken to court, the district can not be found liable if the injury was the result of a paraprofessional's negligence (Etscheidt, 2005).

Educational interventions. Much of the cost of teaching students with autism can be attributed to the fact that students with autism require specialized, evidence-based interventions that meet their needs and these interventions frequently require one adult or teacher to one child; there is no one method that is universally agreed upon as the “best” way to educate learners with autism due to the diverse and complex nature of the disorder in terms of the disparity of symptoms that are expressed and levels of severity. The potential for comorbid disorders and multiple disabilities further complicates the development of educational programs. Compared to other groups with disabilities, individuals with autism have poorer prognoses and may not be responsive to interventions (Simpson, 2004). This poor response to intervention could result from the failure to individualize an educational program to an individual student’s needs in conjunction with using practices that are not evidenced based. Iovannone, Dunlap, Huber and Kincaid (2002) suggest that the research on educational interventions for students with autism has not been integrated and applied to decision making at the state or district level and thus identify six core elements that should be incorporated into an educational program for students with autism: individualized supports and services, systemic instruction, structured learning environments, specialized curriculum content, the use of positive behavioral supports and functional behavior assessment as well as family involvement. In addition, despite lack of agreement on a specific method of delivering instruction to students with autism, research indicates that students who meet the criteria of an autism diagnosis are best managed through utilizing the principles of applied behavior analysis (ABA) (Cooper, Heron & Heward, 2007).

School districts throughout the country use different methodologies and have developed different training programs based on these methodologies. Several methodologies or frameworks exist in terms of choosing an approach to teaching students with autism and paraprofessionals must be trained to implement specific strategies used within the framework utilized to teach the students to whom they are assigned. ABA is the most well-researched and successful approach to teaching students with autism; however, there are several different methodologies that are based on ABA principles. (Barbera, 2007; Carr and Firth, 2005; Sundberg and Michael, 2001). ABA, as it relates to autism, involves the scientific analysis of behavior and the subsequent application of learning theory to develop interventions that are targeted to change socially significant behaviors. Goals are created to change specific behaviors; data is collected before, during and after interventions; and effective reinforcement is identified and implemented as part of ABA procedures (Sundberg & Michael, 2001). Applied Verbal Behavior Analysis (AVB) is one of the more recent service delivery models to have emerged that is based in ABA research and principles and like other ABA based approaches, this approach stresses early intervention, the use of a discrete trial training format to present instructions and consequences and providing focused and daily treatment opportunities (Carr & Firth, 2005). According to Sundberg & Michael (2001), AVB can be distinguished from other approaches in that it focuses on developing a child's ability to use functional language, combining principles of ABA with the theoretical framework of verbal behavior developed by B.F. Skinner (1957). The goal of AVB is to increase the use of functional language by individuals with autism which, depending on a student's

level of functioning, can include varied forms of symbolic language such as verbal communication, signing and picture based communication systems.

AVB has several advantages over other methodologies that have contributed to the increasing popularity of this approach. In terms of motivation and reinforcement, other methodologies utilize a negative reinforcement paradigm in which students with autism work to earn a break from a task; in contrast, the AVB approach employs positive reinforcement and motivation as a primary strategy to increase on task behavior. The teacher and paraprofessionals are established as conditioned reinforcers through providing students with positive reinforcers noncontingently at first and then slowly requiring the student to comply with demands to receive reinforcement (Kates-McElrath & Axelrod, 2006). Difficulties with social interaction are one of the primary features of the autism spectrum and students are more likely to approach and interact with teachers and paraprofessionals because they are associated with positive reinforcement.

Instruction in the AVB approach is delivered through Natural Environment Teaching (NET) which capitalizes on student interest for providing instruction and may occur in any location, in conjunction with Intensive Teaching Trials (ITT) which breaks down tasks into small parts to progressively teach a task, concept or skill (Carr & Firth, 2005; Kates-McElrath & Axelrod, 2006). Utilizing both NET and ITT can assist a learner with autism to generalize skills to other environments beyond simply teaching skills in isolation as is typical of other methodologies. In addition, a high reinforcement value of learning can be maintained as opposed to requiring a student to work to escape from the learning environment. Data collection in AVB programs more typically use probe data. Teachers and assistants collect data a few times a day, as opposed to trial-by-trial data

collection that is ongoing throughout the day (Kates-McElrath, 2006). The use of probe data is advantageous in that this method of data collection enables the teachers to focus on teaching instead of recording responses. Paraprofessionals working with students with autism in an AVB program require training not only pertaining to addressing the highly specialized needs of students with autism but also in specific behavioral principles and strategies, providing instruction as supervised by the classroom teacher, collecting data, assisting with social interactions and facilitating use of language.

Despite the research regarding effective interventions for autism, there seems to be an overall lack of accepted professional standards in the educational field (Scheurman, Webber, Boutot & Goodwin, 2003). While New Jersey has not set a specific policy or standards that must be adhered to across districts, it has published a quality improvement guide with standards that a panel of autism experts considered to be best practice for educating students with autism (New Jersey Department of Education, 2004; Simpson, McKee, Teeter & Beytien, 2007). The guide recognizes that students on the autism spectrum are challenging to educate due to their deficits in skills necessary for learning such as attention, imitation, communication, socialization and motivation, in addition to exhibiting behaviors that interfere with the educational process. It is suggested that early and intensive educational opportunities be provided to students on the spectrum, with the majority of students in classrooms with low student to teacher ratios of a maximum of two or three students to one adult and an extended school year to prevent recoupment of skills. Typically, there will be one teacher in a classroom with one or more paraprofessionals in order to attain this standard while reducing costs. In order to be successful, an autism program must identify and address the specific needs of each

student while providing a curriculum that facilitates the development of communication and language, social skills, play, engagement, academics, replacement of challenging behaviors and self-management. Methods of instruction that are scientifically validated and that utilize procedures to collect and analyze data are recommended; instructional methods based on ABA in particular are considered to be an effective means of increasing appropriate behaviors and skills while decreasing inappropriate behaviors (New Jersey Department of Education, 2004; Simpson, McKee, Teeter & Beytien, 2007). The standards are meant to guide the development of autism programs that are effective and appropriate in meeting the needs of students on the spectrum.

Personnel Preparation and Autism

The New Jersey Department of Education (2004) also specifically addresses training needs, emphasizing that the training of staff working in autism programs, including administrators, teachers, Child Study Team members and paraprofessionals is essential; training should include intensive pre-service and in-service training for new staff, frequent in-service training specific to the program, attendance at workshops and conferences to further develop the knowledge and skill base of staff and ongoing consultation and technical assistance for all staff. Training for paraprofessionals should also include specific and direct instruction pertaining to carrying out the IEPs of the students with which they work. Scheurmann, Webber, Boutot and Goodwin (2003) also address the need to prepare paraprofessionals to work with students with autism through training; as students with autism may spend a significant amount of instructional time with paraprofessionals, it is critical that they be skilled in teaching techniques, including trail training, naturalistic teaching, visual supports, and methods to enhance social skills

as well as control behaviors. Training in independent living, cognitive and academic instructional skill interventions and other strategies may be necessary (Simpson, 2003). Simpson (2003) recommends that skills should be modeled, taught, practiced and evaluated when staff members will be working with students with autism. While the New Jersey Department of Education and researchers have suggested guidelines for staff training in regards to individuals that work with students with autism, it has been left to individual districts to design and implement trainings, which may be lacking in frequency, comprehensiveness and generalizability due to fiscal and logistical constraints.

Adult training techniques. It is critical to consider the existing research in effective adult training techniques when determining how best to design trainings for staff member working with students with autism such as paraprofessionals. Jahr (1998) reviewed the literature and reported on procedures most often used in staff training; utilizing these procedures to improve on-the-job training as well as other types of training for paraprofessionals can better prepare them for their roles. Instructional procedures, which include lectures, discussions, and information provided in a verbal or written format, are rarely effective in training staff if used in isolation, particularly when the trainee is expected to apply the training to their role. If paraprofessionals are to be trained in a workshop that emphasizes instructional procedures, it is important that this technique be combined with other techniques in order for the training to be effective. Similarly, the training technique of modeling, when a trainer demonstrates a task and then allows the trainee to rehearse the task, does not transfer well to the job setting in the absence of other techniques. Additional techniques that can be employed to train staff

include role-play and providing feedback. Role-play as a paraprofessional training technique would allow the trainer and the paraprofessional to take on the role of a student and the person working with a student to practice skills. Feedback, provided that it is clear and immediate can also be an effective means of imparting skills, with a teacher or trainer informing a paraprofessional of what they are doing correctly and what they are not doing correctly as the paraprofessional is performing a task. Performance feedback has been shown to be an effective method to promote the generalization of staff skills (Bolton & Mayer, 2008). Teaching self-management techniques, such as setting daily goals, monitoring behavior and administering self-praise are also useful techniques to teach staff. Jahr suggests that these techniques are best used in combination but notes that it is more difficult to measure the effects of the techniques individually when researching their effectiveness.

In evaluating training programs, Jahr (1998) also suggests that training procedures for staff should improve client behavior, that staff should be able to generalize their training across clients and settings, and that the staff should be able to demonstrate the effects of training for an extended amount of time following training. As applied to evaluating paraprofessional training programs, a program would be effective if the training results in enhanced student performance after the student works with the paraprofessional, if the paraprofessional is able to work effectively with different students and in different classrooms beyond the training and that the paraprofessional is able to maintain the skills over time. In addition to generalization, Leblanc, Ricciardi and Luiselli (2005) suggest that training programs should be developed with practicality and time efficiency in mind as well as congruency with staff values. Time efficiency is

particularly important if paraprofessionals are removed from class to complete training, which can disrupt services to the student (Bolton & Mayer, 2008).

Paraprofessional training and autism. Research has been conducted which examined the use of different adult training techniques to impart knowledge and skills to paraprofessionals working with students with severe disabilities such as autism, as well as the generalization of knowledge and skills following training. One study provided a 4-hour in-service in a one-on-one format to improve paraprofessionals' ability to facilitate peer interactions between students with and without disabilities (Causton-Theoharis & Malmgren, 2005). The in-service focused on widening the paraprofessional's perspective regarding the social interaction of students, understanding the importance of peer interactions, clarifying the paraprofessional's role in facilitating interactions and discussing specific skills such as modeling interactions for students, identifying student strengths, directly teaching social interaction skills and actively pairing students. While this study demonstrated that the training led to an increase in the paraprofessional's facilitation of students' social interactions, this increase was modest. In light of Jahr's literature review of adult training (2008), one weakness of this study may have been the use of a lecture and discussion format in the absence of other training techniques; there was also no long term follow up to determine how well the paraprofessional performed over time.

Hamad, Serna, Morrison and Fleming (2010) examined the efficacy of an online, 3-module course in teaching families and service providers of students with autism, including paraprofessionals, about early behavioral intervention (EBI), a technique based in ABA that emphasizes the use of prompts to cue behavior, prompt fading to encourage

students with autism to display behaviors independently, differential reinforcement, error correction and data collection to determine efficacy of procedures. The training procedures included short online lectures, video demonstrations of procedures, study questions and online quizzes, requiring approximately 4 to 8 hours to complete. Results indicated that participants made significant gains in knowledge from pretest to posttest, though the authors acknowledge that without supervised skill acquisition and data collection regarding skill implementation and behavior change of targeted students with autism that they were unable to assess whether the training generalized and the participants were applying the knowledge that had been gained. Another study that used video modeling to train paraprofessionals found that this technique resulted in an increase of accuracy in paraprofessionals' ability to implement discrete trial training sessions; however, the study failed to assess whether the skills were generalized and maintained beyond the one week probe conducted following the training (Catania, Almeida, Liu-Constant & Digennaro Reed, 2009). In addition, the authors noted that it was decided to provide one of the participants with feedback to correct a consistent error in performing the skills when observed during the probe, indicating that the video modeling may not be effective with all participants when used in isolation (Catania, Almeida, Liu-Constant & Digennaro Reed, 2009). While the techniques used in these studies were economical in terms of cost and time, it is critical to examine the generalization and the maintenance of skills over time to assess efficacy of training programs and to determine if any adjustments are necessary (Jahr, 2008). Balancing economy with selecting techniques that result in effective skill acquisition, generalization and maintenance should also taken into consideration when designing training programs.

Discrete trial instruction (DTI) is a teaching methodology for students with autism that is based on ABA; this methodology is focused on providing learning opportunities in a systematic way, prompting accurate responses, administering positive reinforcement and correcting errors in responses (Bolton and Mayer, 2008; Leblanc, Ricciardi & Luiselli, 2005). Mayer and Bolton (2008) provided a training that was designed to increase the accurate implementation of DTI that would generalize from a training setting to the teaching environment; the training was conducted in a conference room and the paraprofessional was observed working with a student on the job. The three-hour training package received by the participants included didactic instruction, modeling, general case instruction and practice while receiving specific performance feedback. Feedback serves several important functions which include providing an opportunity for praise, informing the trainee about changes that need to be made and motivating the trainee to achieve better performance (Hall, Stadnick Grundon, Pope & Balderama Romero, 2009). The performance feedback included the trainer making a positive statement about the paraprofessional's performance, identifying and praising skills that were performed accurately, identifying any step that was not performed properly, describing how to perform any step that was performed incorrectly, questioning to determine whether the paraprofessional understood the feedback, a summary of what the paraprofessional should do next and concluding with an encouraging statement or statements. During the training, the paraprofessionals' performance improved from low accuracy at baseline to high accuracy following the training and practice trials. When the paraprofessionals were evaluated on the job, their performance decreased initially, through it was higher than the baseline collected prior to receiving the training package,

then the accuracy of their treatment implementation increased over time, with supervision. Ongoing supervision was provided to the paraprofessionals by different supervisors following the training; this was not standardized and therefore not accounted for in the results of the study. The overall findings support the use of a multicomponent training package including performance feedback. The paraprofessionals were able to generalize the content of the training to their jobs and maintain accuracy above 90% for the 16 to 23 weeks in which they were assessed for the purposes of the study; however, the degree to which the different components contributed to the generalization could not be assessed.

Leblanc, Ricciardi and Luiselli (2005) also examined performance feedback as a training component in teaching DTI. They implemented and evaluated an abbreviated performance feedback intervention as a means of training paraprofessionals to conduct discrete trial instruction of students with autism; paraprofessionals, after completing a baseline session with a student, reviewed a checklist of DTI skills, which was followed by performance feedback regarding each item on the checklist. The skills of the paraprofessionals increased and were maintained over time with the student that they were assigned to work with; the study did not assess generalization to other students. Instruction in skills and video feedback of performance, in which the individual watched a tape of their performance of specified skills while receiving feedback, has also proven to be effective (van Vonderen, de Swart & Didden, 2010).

In many studies of performance feedback, researchers or consultants provide the feedback. Hall et al. 2009 trained paraprofessionals who attended a day long workshop with their supervising teacher; the workshop included information on behavioral

strategies, modeling, role-play and behavioral rehearsal of effective strategies in their typical setting. Initially, though the paraprofessionals were able to demonstrate skills at the workshop, the skills did not generalize to their work environment or the use of skills decreased over time. The supervising teachers then started to give performance feedback and the use of correct strategies increased. This study demonstrates the importance of ongoing coaching and mentoring through performance feedback in a trainee's work environment after consultants or researchers are no longer involved. Special education teachers can be trained to provide feedback to maintain a paraprofessional's skills after training to ensure generalization and maintenance over time, which would be more cost effective than hiring consultants to provide ongoing feedback.

Summary

The number of paraprofessionals working with students with disabilities, particularly autism, in educational settings has significantly increased in recent years. Paraprofessionals are often the individuals who often have the most direct contact with students with autism; however, they typically have the least training to prepare them to work with the autistic population. It is critical that training for paraprofessionals working with students with autism be provided, as students with autism have a complex set of needs requiring specialized, research based interventions. Adult training research in general as well as research specific to training paraprofessionals who work with students with autism is relevant to the design of effective training programs that effectively address paraprofessionals' needs related to the acquisition of adequate knowledge and skills in the vocational domain.

Chapter III

Methods

Maher (2000) conceptualizes human resource programs as an arrangement of resources, organized to add value to individuals, groups or organizations; based on this definition, Maher (2000) developed a systems framework for strategic program planning and evaluation. This dissertation employed Maher's (2000) program and evaluation framework in order to assess the training needs of the paraprofessionals working in an urban school district's autism program. The information gathered through a needs assessment was subsequently utilized to develop a program that would effectively and appropriately address these needs. Maher's (2000) model outlines four separate though interrelated phases, to be completed in the process of program planning and evaluation: clarification, design, implementation and evaluation. For the purposes of this dissertation, the clarification and design phases of Maher's (2000) model were utilized.

The clarification phase involves collecting data about the target population and its needs; this dissertation focused on the paraprofessionals and their training needs. Maher (2000) defines a human service need as a discrepancy between the current state of affairs in the psychological or educational functioning of a target population and the desired state of functioning in a given domain. A domain is a set of related behaviors and functions. Some domains include the cognitive, affective, socialization, communication, educational, vocational, psychomotor and physical domains. The process of determining the needs of a target population in these domains is referred to as a needs assessment. The educational and vocational domains were selected as the relevant domains on which to focus; specifically, the paraprofessionals' current level of knowledge and skills

pertaining to working with students with autism was assessed. The needs assessment was designed to ascertain whether a discrepancy existed between the current level of knowledge or skills and the knowledge or skills required to perform their roles effectively. This approach is intended to identify discrepancies or needs that may exist related to the growth, development and improvement of the paraprofessional staff, enable any needs to be prioritized based on the magnitude of the discrepancy and then addressed programmatically. A teacher questionnaire was used to ascertain the knowledge and skill areas that teachers perceive as most critical for paraprofessionals in performing their roles. The paraprofessionals were asked to complete a questionnaire to assess their skills and knowledge in working with students with autism as well as to gather information about their educational background and training experiences; the latter will help to identify a potential need to segment the target population for trainings based on skills and knowledge while the former will identify areas of training needs.

The clarification phase also involves assessing the relevant context in which the target population operates (Maher, 2000). The paraprofessionals are embedded in a context that impacts the readiness of the paraprofessionals, relevant stakeholders and organization to design and implement a human services program. Information was collected pertaining to factors that can facilitate or inhibit the design and implementation of a program, which was then considered in terms of using these factors to the program's advantage and attempting to overcome them, respectively. The readiness of the organization was assessed through this process to inform program design, to determine if or when would be appropriate to implement the program and the feasibility of sustaining

a program. This information was collected through interview of key administrators within the urban school district.

The design phase is the second of the four phases in Maher's (2000) program planning and evaluation framework. In the course of this phase, the program purpose and goals are outlined, the program design alternatives are considered, the program is developed and the program design is documented. Information collected in the clarification phase informs this process which results in a clear description of all aspects of the program so that the program can be thoroughly understood and subsequently implemented. Designing the program entails specifying the purpose of the program and SMART goals. According to Maher (2000) goals should be SMART or Specific, Measurable, Attainable, Relevant and Timeframed. Following the creation of SMART goals, the eligibility standards and criteria as well as the policies and procedures of the program were delineated. Based on the components, phases or activities determined to be necessary to address the needs of the paraprofessionals, the following were then considered: the methods and techniques that would be used to deliver the program, the materials and equipment that would be used, the facilities where the program would be held, the personnel who would implement the program, any incentives that might be provided and the budget, if any. A plan for implementation and evaluation was discussed but not implemented as part of this dissertation.

Participants

Participants in the needs assessment process consisted of paraprofessionals, teachers and administrators working within or with the autism program in an urban school district. All of the paraprofessionals and teachers working in the program were

given the opportunity to complete a questionnaire. The program currently consists of 11 classrooms housed in five separate school buildings. Each classroom has one teacher who manages two to six paraprofessionals. Two paraprofessionals in each classroom are classroom assistants and any additional paraprofessionals function as personal assistants; however, they are asked to rotate duties as needed. Based on this information 11 teachers and 22-66 paraprofessionals were asked to complete a questionnaire. In addition the supervisor of the autism program and director of special services were asked to participate in an interview regarding the program, as they have more pertinent knowledge of the program as compared to other administrators in the district.

Procedures

The research design for the study was descriptive; specifically, a survey design was utilized. The paraprofessional and teacher surveys were created by the principal investigator and dissertation committee based on important knowledge and skill areas pertaining to working with children with autism, research findings as well as the principal investigator's experiences working with the autism program. The interview questions for the administrators were based on Maher's (2000) AVICTORY model and were intended to collect information pertaining to factors in the district that would either facilitate or inhibit the design of a training program. All of the teachers and paraprofessionals working in the autism program were asked to complete a questionnaire and selected administrators were asked to participate in an interview at the onset of the study in order to obtain data regarding the training needs of the paraprofessionals. Those completing questionnaires received a hard copy of the survey.

The paraprofessionals were given a description of the study and an informed consent (Appendix A, B) as well as a copy of the questionnaire (Appendix E, F). Since many of the paraprofessionals working for the district speak Spanish, the informed consent form as well as the questionnaire was translated into Spanish. Native speakers working for the school district who work with special education students completed this process; one person translated the forms into Spanish and another translated the Spanish forms back into English in order to ensure that the translation was accurate. The paraprofessionals were given both forms and could complete the questionnaire in their preferred language. Surveys were chosen as a means of collecting this data, as it was felt that the participants would be more honest in their answers when filling out an anonymous questionnaire.

The paraprofessionals were asked to complete items that provide demographic information, including gender, work experience, highest degree attained, language and prior training in the area of autism. This data was requested in order to determine if the population needed to be segmented to receive different trainings when a training program is developed. In addition, the paraprofessionals' perceived confidence in their ability and knowledge in specific technical areas relevant to working as an assistant in the autism program was assessed as well as the perceived areas of need and interest in regard to training areas; both teachers and paraprofessionals were asked to provide data regarding perceived areas of need in regard to paraprofessional training. The teachers were given a description of the study and an informed consent (Appendix C) as well as a copy of the questionnaire (Appendix G).

The supervisor of the autism program and the director of special services were asked to participate in an interview with the principal investigator. They were given an informed consent form that described the study (Appendix D). The administrators' interview questions focus on providing background and context information regarding the autism program, available resources and readiness of the district to implement a training program (Appendix H); this information is relevant to program design and implementation. An interview format is best suited to this information, as the questions are open-ended and may require further elaboration. The questions are those outlined in Maher's (2000) program planning and evaluation framework.

Steps were taken to avoid/minimize participant risks. The identities of the participants and the district have been kept anonymous; there will be no names or codes linking the participants to the data and the name and location of the dissertation will not be mentioned. All information collected from this needs assessment will be kept in a locked filing cabinet. The records will be shredded at the time of disposal after three years of completion of the research. In addition, the director of special services and Board of Education have approved this project, therefore, responding to the interview and survey items will not pose a risk to the employment of participants.

The study was explained to each of the subjects by the principal investigator, the consent was read, and the subject's questions answered. The subject initialed all pages, and then signed the consent form if he or she chose to participate. A dated and signed copy was given to the subject. Coercion was minimized by emphasizing that participation in the research is voluntary and that choosing to participate or not will have no impact on employment status, as stated in the informed consent forms. There were no

external incentives that might increase any undue influence on the subjects. If participants choose not to respond to certain items, the completed items were included in the results.

Internal and external validity were considered in the design of this study as well as the survey and interview items. In terms of internal validity, it is believed that the design of the study, including the variables and methods of collecting data are appropriate to conducting the needs assessment as described above. No sampling techniques were utilized and all of the staff members will be asked to participate in this study. In regard to external validity, the collection of data relevant to the training needs of paraprofessionals working for the autism program is meant to tailor a program specific to the needs and context of this setting; in this case, generalizing the data to different populations is less relevant.

Treatment of Data

The results of the surveys were analyzed item-by-item. The closed ended responses collected from the questionnaires were analyzed using SPSS descriptive statistics. The central tendency of the responses and the frequency with which items were endorsed were generated and interpreted. Consideration was given to knowledge and skill areas pertaining to working with students with autism that the teachers and paraprofessionals identified as most needed in selecting areas to be focused on when developing a training program as well as administrator input. In regards to the open ended data from the interviews, the information were summarized and used to assess the readiness of the school district and resources available to develop and sustain a training program.

Chapter IV

Clarification Report and Results

The clarification phase, the first phase of the program planning and design process, is presented in this chapter. The clarification phase consists of introductory information, a description of the organization and client, and a description of the target population as well as assessments of the needs of the target population and the relevant context of the organization. The purpose of this section is to obtain a clear understanding of the pertinent factors that can impact program design and implementation; this understanding facilitates the development of a program that not only meets the needs of the target population but also is viable and pragmatic given the circumstances that currently exist in the organization.

Entry into the Organization

The principal investigator's entry into the organization began five years ago, when completing a doctoral internship and working full time for the district as a school psychologist. During that first year, the principal investigator was assigned to case manage two of the autism program's classrooms. At monthly case manager meetings pertaining to the management of the program, training staff was discussed and the original supervisor of the program encouraged the project to ensure that incoming staff members were adequately trained. Discussions continued with subsequent supervisors and the district's board of education as well as its director of special services approved the project during the 2012-2013 school year; data was collected the following school year after IRB approval was obtained. The principal investigator continually worked with the program for five years; some of the information contained in this report is based

on these experiences, in addition to information obtained through administrator interviews.

Introductory Information: Organization and Client

The organizational unit for this project is a large urban school district that is located in New Jersey. This district can be characterized by both low student achievement and many residents living below the federal poverty threshold. In addition, the district is culturally diverse, with its more than 20,000 students representing approximately 50 different countries and 37 language groups, though the community's population is predominantly Hispanic. There are more than 30 schools in the district, which service students from preschool through 12th grade. Within the school district, this project specifically focused on the autism program.

History and philosophy of the autism program. The autism program in the urban school district being assessed was established to provide specialized and comprehensive educational services to students with a diagnosis of Autism Spectrum Disorder (ASD) or behaviors associated with this disorder. Prior to the program's inception, students with autism were either sent out of district or, in less severe cases, maintained in district in other programs that did not provide instruction directly geared towards the needs of these students. Since children with autism are a diverse population with different manifestations of symptoms, the program was designed to address both the common needs associated with autism as well as the specific needs of each student. In accordance with the principle of providing students an education in the least restrictive environment, as stated in the Individuals with Disabilities Education Act (IDEA), there is an emphasis on providing exposure to students without autism through mainstreaming

and reverse mainstreaming. Staff members work towards preparing students to exit the program to inclusion and other less restrictive classes that include peers without autism when appropriate for the student. To this end, a goal of the program is to ensure generalization of skills across settings, incorporating a life skills and parent education component to enhance student success in the community and at home, in addition to success in the school environment.

In terms of the structure of the autism program, Applied Behavior Analysis (ABA) methodology provides a general framework for the program, which specifically utilizes Applied Verbal Behavior Analysis (AVB) principles to provide instruction through Intensive Teaching Trial (ITT) sessions and Natural Environment Teaching (NET); the children are reinforced for communication, social interaction and appropriate behavior which increases the value of utilizing skills that are taught. The New Jersey Department of Education (NJDOE) Administrative Code as well as the NJDOE Autism Program Quality Indicators were also taken into account when designing the program. NJDOE Administrative Code – Special Education (6A:14-4.7) requires that self-contained autism programs maintain a student ratio of three students to every staff member with a maximum of 6 students per class; the autism program maintains a student ratio of two students to one staff member, limiting each class to 6 students as code requires, with the exception of the preschool classes. The preschool students with autism are in preschool disabilities classes that can go up to as many as 12 students; however, the student to adult ratio stays the same. The low student to teacher ratio meets one of the standards of the NJDOE Autism Program Quality Indicators (2004). Other indicators such as providing a full day and extended year program, providing services in the least

restrictive environment possible, basing instruction on individual needs as well as ongoing data collection are also integrated components of the program. Data are collected in order to identify areas of need, to identify reasons for problem behaviors, to develop interventions and to monitor intervention success; these data are maintained in a data book for each student.

This author is a case manager within the program and therefore has been involved in discussions regarding the training component of the program. While the autism program has previously scheduled some ongoing in-services for staff on an as needed basis with the input of case managers and clinical support staff, there are frequently new paraprofessionals working in the self-contained autism classrooms due to program expansion, an emergent need for a personal assistant and the need for staffing the extended school year program, as well as staff attrition; a standardized training program does not currently exist in the district for these staff members. This has led to interest in reexamining the current training model geared towards paraprofessional in the district not only by the administration and teaching staff but also by paraprofessionals themselves.

In terms of building capacity, new classrooms are needed in order to accommodate students who are aging out of the program as it now exists; the autism program currently ends at the 6th grade and the students either go out of district or into a less restrictive classroom. There are also more students at existing grade levels than can currently be accommodated by the number of spots available, necessitating an expansion of the program through additional classrooms. Beyond the expansion of the program, which leads to the need for new classroom assistants, additional paraprofessionals are frequently hired to become personal assistants for new or existing students as the need

arises. Staff attrition also impacts the need for new staff; some of the paraprofessionals request transfers due to the high demands of working with students with autism, get injured while working and have to take time off, accompany a student to a less restrictive program when they exit the autism program or retire. The district often hires substitutes rather than permanent staff; these substitutes are not provided with benefits and often leave if they can find a position that provides them, which also increases attrition. Paraprofessionals are also not required to work the extended school year program, which means that some of the paraprofessionals working with the students over the summer could also benefit from training. The need for new staff due to program expansion or staff attrition is problematic in that few of the paraprofessionals who are hired as replacements have experience in working with students with autism and that there are no provisions for training before they enter the classrooms as per the assistants' contracts. Existing research regarding best practices supported conducting a needs assessment in order to provide appropriate training for paraprofessionals.

Client. When this project was initially discussed, the client was the supervisor of the autism program and also one of the individuals involved in the creation of the program. The original supervisor involved with the project expressed interest in addressing the vocational domain in regard to ensuring that the paraprofessionals working in the autism program had the necessary knowledge and technical skills to work with students with autism. The supervisor of the program has changed three times since the project began; however, the current supervisor has been in place for the past two years and is now the client along with the director of special services. The current supervisor of the autism program and the director were selected as clients due to their

direct involvement with and knowledge of the program. The current clients believe that this program will add value to the paraprofessionals as well as to the organization.

Target population description. The target population initially included all of the paraprofessionals working for the autism program. Currently, the autism program is comprised of 11 classrooms. Each of the classrooms has at least two classroom assistants and up to four additional personal assistants, depending on the needs of the students. At the time of data collection, 23 of these paraprofessionals completed needs assessment surveys, which included demographic information pertinent to training needs such as language spoken, prior experience working with the autistic population, amount of time that the paraprofessional has worked with the autistic population, highest level of education, as well as educational information related to having exposure to academic coursework, workshops or consultations specifically focused on autism. This information, along with other information assessing the needs of the paraprofessionals, was gathered by means of a questionnaire; the paraprofessionals could choose to respond in either English or Spanish. Following administrator interviews and analysis of needs assessment surveys completed by the paraprofessionals themselves, it was decided to segment the population and focus on training paraprofessionals entering the autism program.

Language background. Since the school district has a high proportion of Spanish speakers and the paraprofessional population is drawn, at least in part from the surrounding community, information about the paraprofessionals' first language and preferred language was collected in order to determine whether it was necessary to accommodate multiple languages in providing training. Based on the surveys returned,

36% of the paraprofessionals in the autism program endorsed English as their first language while Spanish was the first language of the remaining 64% of the paraprofessionals. In regard to preferred language, 53% of the paraprofessionals who responded to the survey preferred to communicate in English, 26% do not have a preference between English or Spanish and 21% prefer to communicate in Spanish.

While the program previously has had a behaviorist, a case manager and a supervisor who spoke Spanish fluently, the current administration, case managers, coach and the majority of the teachers speak English as both their first and preferred languages. Based on this information, it may be necessary to consider language as a factor in training, even though only 21% of the target population reported being more comfortable speaking Spanish. It could be problematic if a paraprofessional does not understand the nuances of the English language, particularly if a paraprofessional begins working for the program with no work experience, education or professional development pertaining to the specialized needs of students with autism.

Table 1

First Language of the Paraprofessionals

Language	Percent
English	36.4
Spanish	63.6

Table 2

Preferred Language of the Paraprofessionals

Language	Percent
English	52.6
Spanish	21.1
Either English Or Spanish	26.3

Vocational and educational characteristics. Typically paraprofessionals, especially personal aides, have the most direct contact with the students; however, despite this degree of responsibility, they also have the least amount of education and training to meet the specialized needs of students with autism. This is supported by the demographics of the target population. The previous work experience, level of education and participation in courses, workshops and consultations specific to working with students with autism is relevant to ascertaining the degree to which training for the population might need to be differentiated; it might be necessary to segment the target population when introducing a training program, given varying levels of knowledge and skills. While 52% of the paraprofessionals had experience working with students with autism, the remainder of the paraprofessionals had no experience working with the autistic population prior to being assigned to positions in the autism program. As there is no current training in place before a paraprofessional is placed in a classroom, this indicates that approximately half of the paraprofessionals are learning on the job, through direction from their classroom teacher, at least initially. In regard to the highest level of level of education achieved by the paraprofessionals, 19% of the paraprofessionals had completed high school or a GED, 33% completed some college coursework, 19% had completed a 2-year college degree, 24% had completed a 4-year college degree and 5% reported other certifications such as the CDA, otherwise known as the Childhood Development Associate credential. Only 32% of the paraprofessionals reported having taken college coursework relevant to working with the autistic population while 64% had not been exposed to college coursework in this area.

Table 3

Paraprofessionals' Experience Working with Students with Autism

Experience	Percent
Yes	52.4
No	47.6

Table 4

Highest Level of Education Attained by Paraprofessionals

Highest Level of Education Completed	Percent
High School or GED	19.0
Some College	33.3
2 year college/Associates degree	19.0
4 year college/Bachelors degree	23.8
Other	4.8

Table 5

Paraprofessionals' Exposure to College Coursework Pertaining to Working with Students with Autism

College Coursework	Percent
Yes	31.8
No	63.6

Beyond experience and educational background, supplemental workshops in addition to consultations with the district's previous behaviorist, consultants and current coach also affect the paraprofessionals' level of knowledge and skills in working with students with autism. Forty-one percent of paraprofessionals working in the autism program reported never having attended a workshop about autism and an additional 27% attended between one and five workshops. The remaining paraprofessionals attended more than six workshops, with 9% attending six to nine workshops, 5% attending ten to fourteen workshops and 18% attending fifteen or more workshops. In terms of

consultations, 32% of the paraprofessionals have never participated in consultation or performance feedback from a behaviorist, outside consultant or coach at the time this information was requested and another 32% had participated in one to five consultations. The remaining paraprofessionals participated in 6 or more of the consultations, with 5% participating in six to 9 consultations, 14% participating in ten to fourteen consultations and 18% participating in fifteen or more consultations. Based on this data, approximately 41% of the paraprofessionals have not attended a workshop and 32% of the paraprofessionals have never participated in a consultation to increase their knowledge and skills in the area of working with students with autism in an educational setting. Since the surveys were administered at the beginning of the school year, it is likely that these percentages represent the paraprofessionals just entering the program either to fill new openings or to replace staff that retired, found new positions or exited the program with a student. It is was determined that this group is the most critical to address with a training program; after this need is addressed, the program can later be expanded to provide more advanced training to the more experienced paraprofessionals.

Table 6

Number of Workshops Attended by Paraprofessionals

# of workshops attended	Percent
None	40.9
1-5	27.3
6-9	9.1
10-14	4.5
15 or more	18.2

Table 7

Number of Classroom Consultations Attended by Paraprofessionals

# of consultations	Percent
None	31.8
1-5	31.8
6-9	4.5
10-14	13.6
15 or more	18.2

Needs Assessment

A needs assessment was conducted to develop additional insight regarding the paraprofessionals' needs in the vocational domain; obtaining information specific to any gaps that might exist in the knowledge and skills necessary for the paraprofessionals to effectively work with students with autism would enable a program to be targeted to this population and its context. Relevant demographic information was also collected from the paraprofessionals and reported in the description of the target population. The vocational domain was selected in order to focus on functions having to do with job and work performance. In order to better pinpoint specific gaps in the knowledge and ability of the paraprofessionals working in the autism program, questionnaires were developed with the input of the program's previous behaviorist and consultants to identify the greatest areas of need in knowledge and skills that are utilized most frequently in the autism classrooms. Both the paraprofessionals and teachers completed questionnaires in order to provide input regarding training needs.

Table 8

Structure of Needs – Vocational Domain

Current State of Affairs	Desired State of Affairs	Needs Assessment Question
Some of the paraprofessionals currently working in the autism program do not have the knowledge and skills necessary to effectively perform their roles.	All of the paraprofessionals working for the autism program acquire knowledge and skills necessary to effectively perform their roles.	In what ways do the paraprofessionals in the autism program need to augment their current level of skills and knowledge relevant to working with students in the autism program?

Data collection variables. The data collection variables included the paraprofessionals' level of confidence, the degree to which they felt that they needed additional training and their level of interest in the following technical competencies relevant to working as a paraprofessional in the autism program:

- Conducting preference assessments
- Communicating with staff and other individuals
- Basic behavior assessment and treatment
- Antecedent-Behavior-Consequence (ABC) Data
- Data recording
- Behavior procedures (escape extinction, pairing, etc.)
- Discrete trial/Intensive teaching
- Activities of daily living
- Facilitating social skills
- Prompting and prompt hierarchies
- Functional Behavior Assessments (FBAs) and Behavior Intervention Plans (BIPs)
- Requesting/Manding
- Incidental teaching
- Autism overview
- Reinforcement

In addition, the teachers were also asked to rate which technical competencies were the most necessary to be addressed through a training program for the paraprofessionals.

Data collection methods, instruments and procedures. In order to answer the needs assessment question, the primary investigator utilized knowledge obtained from experience working in the program in addition to information collected from paraprofessional and teacher questionnaires. Teacher responses were sought to complement the information provided by the paraprofessionals; it was also believed that the teachers, who typically have more extensive backgrounds in working with students with autism, would be better able to identify areas of need for the paraprofessionals in their classrooms. Twenty-three paraprofessionals and 8 teachers completed and handed in surveys. Additionally, needs assessment data included interviews with administrators to obtain information regarding the knowledge and skills of the paraprofessionals as well as to obtain a clearer understanding of the context of the organization, factors that might impact the implementation and ultimate success of a program.

Methods and procedures for data analysis and interpretation. Data obtained from the surveys was entered into SPSS by the primary investigator. Beyond demographic information, the paraprofessionals were asked to rate their level of confidence in their level of knowledge and skill in each of the technical competencies on a Likert Scale of 1 to 5, with 1 indicating that they were not confident and number 5 indicating that they were very confident in a given area. They were also asked to indicate the degree to which they felt training in each area was needed, with 1 indicating that the training was most needed and 5 indicating that it was least needed; Similarly, the paraprofessionals were asked to rate their level of interest in receiving training in each of the areas, with 1 indicating that the topic was of most interest and 5 indicating that the topic was of least interest. The latter areas were reverse coded when the data was entered

into SPSS. The teachers were also asked to indicate the degree to which they felt training in each area was needed, with 1 indicating that it was most needed and 5 indicating that training in that area was least needed; the data from their responses to this question was also reverse coded in SPSS. Descriptive statistics and frequencies were run for the data obtained from the paraprofessional and teacher questionnaires in order to obtain the central tendency of responses to each item as well as the frequency with which participants responded in a given way to each item. Simple linear regressions were also run on the data from the paraprofessional surveys to determine whether the independent variables of amount of experience, exposure to previous consultations with the district behaviorist of consultants and the number of workshops attended, in order to determine if there was a relationship between these variables and the technical competencies that are necessary for paraprofessionals working in the autism program. The survey results and their potential impact on program design were analyzed.

Needs assessment results. The results of the needs assessment, which was conducted in the form of surveys completed by the paraprofessionals and teachers, will be discussed in the following section. These surveys were distributed in order to gain a greater understanding of the training needs of the paraprofessionals and to identify the needs of paramount importance that will be addressed by a training program. This information, in conjunction with an assessment of the context in which the target population exists will serve as the foundation for a program.

Question 1: In what ways do the paraprofessionals in the autism program need to augment their current level of skills and knowledge relevant to working with students in the autism program?

Teacher survey. There are currently 11 classrooms in the program. At the time surveys were distributed in September, one of the teachers was on medical leave due to illness and another was on a year-long maternity leave so substitutes were assigned to those classrooms. It was decided not to ask substitutes to respond to the questionnaire because they did not have backgrounds in working with students with autism. Nine questionnaires were distributed and eight were returned. Since six of the teachers rated the degree to which they felt each of the 15 technical competencies presented in the survey were needed and two of the teachers indicated which 5 out of the 15 competencies were most needed, the data from the latter participants' questionnaires were not included in the data analysis. The teacher responses were reverse coded such that higher numbers indicated that the teachers felt training paraprofessionals in a given technical competency was more necessary, therefore, the technical competencies with the higher means signify areas of greater need. The top five technical competencies that the teachers rated as most needed areas of training were behavioral procedures such as escape extinction and pairing ($M=4.50$, $SD=.837$), basic behavior assessment and treatment ($M=4.33$, $SD=.816$), ABC data ($M=4.17$, $SD=.753$), data recording ($M=4.17$, $SD=.983$) and teaching procedures such as discrete trial, intensive teaching and natural environment teaching ($M=4.00$, $SD=1.225$). Other areas that were indicated to be areas of higher need in regard to providing training to the paraprofessionals were requesting and mands ($M=3.83$, $SD=1.835$), an overview on autism ($M=3.83$, $SD=1.329$) and prompt hierarchies ($M=3.83$, $SD=.983$). The means of the teachers' ratings in each of the technical areas are summarized in Table 9. In a section provided for comments, one teacher suggested that training for new teachers would also be helpful so that all personnel would be

familiarized with the technical competences that program staff members are expected to utilize, specifically in regard to ABA procedures.

Table 9

Most Needed Technical Competencies According to Teachers

Technical Competency	Mean	Std. Deviation
Behavioral procedures	4.50	.837
Behavioral assessment and treatment	4.33	.816
ABC data	4.17	.753
Data recording	4.17	.983
Teaching procedures: discrete trial, intensive teaching, natural environment teaching	4.00	1.225
Prompt hierarchies	3.83	.938
Autism overview	3.83	1.329
Requesting and mands	3.83	1.835
Facilitating social skills	3.50	1.378
Communicating with staff and others	3.50	1.378
Reinforcement	3.50	1.378
Preference assessments	3.33	1.033
Activities of daily living	3.17	1.602
FBAs and BIPs	2.83	1.722
Incidental teaching	2.67	1.506

Paraprofessional survey. Twenty-three of the paraprofessional surveys were returned; two of the participants did not complete the items correctly, therefore their responses were not included in the data analysis. The paraprofessionals also indicated the technical competencies that they felt were most needed; this data was treated in the same way as that gathered from the teacher questionnaires and therefore higher means indicated the areas in which the paraprofessionals felt there was a greater need for training. The results were similar to those obtained from the teacher questionnaires. The paraprofessionals indicated that the top five areas of greatest need were teaching procedures such as discrete trial and intensive teaching ($M=3.45$, $SD=1.317$), ABC data

($M=3.40$, $SD=1.667$), incidental teaching ($M=3.25$, $SD=1.317$), behavioral assessment and treatment ($M=3.20$, $SD=1.575$) and data recording ($M=3.19$, $SD=1.537$). Additional areas of training needs endorsed by the paraprofessionals included an autism overview ($M=3.14$, $SD=1.389$), prompt hierarchies ($M=3.13$, $SD=1.317$) and behavioral procedures ($M=3.05$, $SD=1.669$). Table 10 reports the results for each of the competencies that were calculated from the paraprofessionals' responses.

Table 10

Most Needed Technical Competencies According to Paraprofessionals

Technical Competency	Mean	Std. Deviation
Teaching procedures: discrete trial, intensive teaching, natural environment teaching	3.45	1.317
ABC data	3.40	1.667
Incidental teaching	3.25	1.209
Behavioral assessment and treatment	3.20	1.576
Data recording	3.19	1.537
Autism overview	3.14	1.389
Prompt hierarchies	3.13	1.552
Behavioral procedures	3.03	1.669
Facilitating social skills	2.95	1.605
FBAs and BIPs	2.76	2.300
Activities of daily living	2.70	1.490
Communicating with staff and others	2.67	1.528
Preference assessments	2.62	1.936
Reinforcement	2.48	1.537
Requesting and mands	2.33	1.426

Simple linear regressions were run in SPSS to determine whether there was a relationship between the independent variables of the amount of time the paraprofessionals had worked with children with autism, the number of workshops the paraprofessionals attended and the number of consultations the paraprofessional had participated in with the district behaviorist or consultants and the dependent variables of

the paraprofessionals' level of confidence in each of the technical competencies, the degree to which they felt training was needed in each of the technical competencies and their level of interest in each of the technical competencies. In regard to the independent variable of amount of experience working with the autistic population, none of the relationships reached statistical significance, with the exception of the degree to which the paraprofessionals indicated that training was needed in the area of FBAs and BIPs ($F=4.501$, $p=.05$). The paraprofessionals with more experience working with students with autism were more likely to endorse that there was a greater need for training in this area.

When the linear regressions were run with the independent variable of number of workshops attended by the paraprofessionals, none of the dependent variables related to confidence reached statistical significance; however, several of the variables related to the degree to which paraprofessionals felt trainings were needed and their interest in trainings did reach significance. The paraprofessionals who had attended a greater number of workshops were more likely to indicate a greater need for training in the following areas: preference assessments ($F=6.667$, $p=.019$), FBAs and BIPs ($F=4.896$, $p=.039$), behavioral assessment and treatment ($F=13.572$, $p=.002$), incidental teaching ($F=7.064$, $p=.016$), data recording ($F=4.988$, $p=.038$), reinforcement ($F=4.823$, $p=.041$), activities of daily living ($F=10.838$, $p=.004$), facilitating social skills ($F=11.712$, $p=.003$) and prompt hierarchies ($F=6.294$, $p=.026$). In terms of the dependent variable of the paraprofessionals' interest in trainings, the only variable to reach significance was the level of interest in training regarding preference assessments ($F=6.146$, $p=.024$).

Paraprofessionals who had previously attended a greater number of workshops were

more likely to indicate that there was a greater need for training in the area of preference assessments.

Linear regressions with the final independent variable of the amount of consultations reached significance with some of the confidence variables as well as the degree to which paraprofessionals felt trainings were needed, though none of the variables related to the paraprofessionals' interest in training areas reached significance. The paraprofessionals who had participated in more trainings with the district behaviorist and consultants while part of the program were more likely to be confident in the area of preference assessments ($F=11.834$, $p=.003$) and incidental teaching ($F=7.505$, $p=.013$). In addition, paraprofessionals who had participated in a greater number of consultations were more likely to endorse a greater need for training in FBAs and BIPs ($F=4.592$, $p=.045$) and behavioral assessment and treatment ($F=5.327$, $p=.033$).

Context Assessment

Understanding the relevant context in which a target population and their needs exist is critical in the decision making process involved in the design and implementation of human services programs (Maher, 2000). As was previously addressed, Maher's (2000) AVICTORY framework was utilized in order to delineate the factors that either facilitate or hinder the design and implementation of a training program for the paraprofessionals as well as the readiness of the organization to implement the program as designed. The ability of the district to commit resources for a training program, the values that people within the organization have regarding the paraprofessionals and the proposed program, the current ideas held by members of the organization regarding the paraprofessionals and their needs, the circumstances that are relevant to the

organization's structure and direction, whether or not the timing of a program is appropriate, the level of obligation that is felt by organizational members to assist the paraprofessionals, potential resistance or factors that may impede helping the target population as well as the potential yield or benefit that may proceed from program implementation as perceived by organizational members was examined. This information was obtained through administrator interviews as well as the principal investigator's knowledge from working with the autism program in the district. The supervisor of the autism program as well as the special education coach of the autism program provided the majority of the information as they are more involved in the day to day running of the autism program; the special education coach was asked to participate in the interview by the administrators because she directly works with all of the classrooms in the program. Considering that the context for this program is specific, if attempting to generalize the resulting program to another setting, the context of that setting would have to be assessed and considered.

Ability. Understanding the level and resources that can be allocated towards a program is crucial in the design and implementation program; the administrator interviews included questions about the human resources, technological resources, informational resources, physical resources, financial resources and temporal resources that could be made available to provide training to the paraprofessionals in the autism program. In regard to human resources that could be allocated for a training program, the supervisor of special services and special education coach suggested that the special education coach as well as child study team case managers, related service providers and more experienced teachers could be utilized to provide trainings to the paraprofessionals.

It was also suggested that the staff development department be asked to assist with scheduling training dates and bringing in outside resources as necessary.

Technological, informational, physical, financial and temporal resources that could be made available for a training program were also discussed. Technologically, the district has an IT department that could be asked to collaborate in the development of a training program. Some potential ways that they might contribute include recording trainings and creating a digital library or providing video equipment, laptops, computers or projectors as needed. Creating a web based training system was suggested as a possibility, as well as creating a digital data collection system which staff would then be trained to use.

In regard to other technological as well as informational resources, the district has purchased access to a web-based application called Rethink Autism. The program previously used Rethink Autism for training and data collection; however, its use was discontinued after half a year due to the app's lack of customization. The site was revamped and the district decided to resume using this resource. The platform includes a series of short training videos that illustrate ABA techniques and concepts that are utilized by staff members working for the autism program. Trained teachers and therapists were filmed working with students with autism and quizzes were developed to assess the degree to which individuals absorbed the information. The training videos available on the website will be integrated into training sessions in order to reinforce the information provided by the trainer and the quizzes will be given as a means of assessing the paraprofessionals' understanding of the techniques and concepts. The administration is planning to provide all the paraprofessionals, both ones that are contracted and those

that are hired regularly as substitutes, with email addresses so that they can access the site to watch the videos again. Exploring the use of other apps for the programs' iPads and the potential need for incorporating the use of these technologies into future trainings was discussed.

Currently, the program is in a state of transition in terms of other informational resources. The supervisor of special services reported that the program will be moving to a standards based assessment that has not yet been selected. The district is interested in finding an assessment that can be used not only to pre-assess students but to measure growth over time. The general education standards and accompanying assessments are based on a Common Core Curriculum; administration is hoping to modify these standards to the program. While the paraprofessionals should be aware of the curriculum, it was suggested that it might be advisable to focus on other areas when developing a training program. The possibility of creating a training manual to decrease the impact of staff turnover was discussed.

In terms of physical locations in which the trainings could be held, the district has multipurpose rooms in multiple buildings that can be made available for training at several schools. There are also Early Childhood Centers that have large rooms that are outfitted with current technologies such as starboards. It was suggested that the district could apply for grants and other local funds to assist in funding a training program. Temporal resources were also addressed. There are two training days that are built into the paraprofessional contracts at the beginning of the school year that could be utilized to provide trainings. The paraprofessionals are also required to go to at least five staff trainings a year that occur on a monthly basis at their schools and it was suggested that

this time be utilized to provide trainings of shorter duration, as contracts specify that the paraprofessional can be kept for no more than an hour after school. Providing trainings that involved the paraprofessionals going elsewhere during the school day was discussed but was not a preferred option due to the difficulty in having to hire substitutes and other logistical issues. Offering after school workshops was suggested for paraprofessionals that are contracted; however, there are many substitutes working as aides who cannot be required to attend any of the training times as they do not have contracts. If there is an emergent need, it was felt that the classroom teacher, coach, case managers or related service providers could provide professional development or performance feedback that is embedded into the work day.

Values. The concept of values encompasses current and historical customs, traditions and beliefs of the organization; this is relevant to the program design process as it enables a program to be customized to the organizational culture. Some things that have traditionally mattered to the district's staff include professional growth and development. In the past, professional development has been offered for the paraprofessionals in autism program, mostly through workshops with the previous program behaviorist and consultants that came into the classroom to provide performance feedback. The issue has never been addressed programmatically, which can be attributed to the challenging demands of the district and community. Administrators, leadership personnel, case managers, coaches and related service providers have other duties beyond the autism program; dealing with and managing daily exigencies frequently trumps long term planning. In addition, the state budget cuts to education impacts the ability to

maintain consistent staffing and thereby continuity of planning and implementation of programs.

Ideas. The administrator's perceptions of what training the paraprofessionals would mean and what the training would entail was also assessed through the interviews. The administrators feel that there is a clear need to provide training and professional development to staff members working in the autism program, particularly the paraprofessionals, due to the high rate of turnover, frequent need for additional personnel due to emergent needs and the litigious nature of the program. There was an intensive training from a consulting company when the program was first implemented in the district to teach the staff how to provide services to students using AVB methodology; that training has not been repeated since, despite the turnover in staff. Until the 2013-2014 school year, outside consultants from that company were hired to come into the district to assist the teachers with the students and staff; these consultants provided suggestions as well as some training and performance feedback to the paraprofessionals on an as needed basis. These consultations were discontinued because the district felt that the consultants were following a medical model while the district wanted to move to a model that was based in educational theory. Instead, the current coach for the program who previously taught for the program was hired and the district is looking into alternate assessment tools rather than the previously utilized Verbal Behavior Milestones assessment and Placement Program (VB-MAPP). While the coach is able to provide some training, she has to cover 11 classrooms and training is not her only responsibility; therefore, it is felt that a training program would be useful in ensuring that sufficient training is provided. The supervisor of the autism program and the coach expressed that

providing the paraprofessionals with training was very important to them. They felt that having a standardized program was something that was long overdue and that providing staff development to individuals working with students with autism is indicated by research outlining best practice. Both expressed interest in providing trainings to other paraprofessionals working with students with autism in the general education setting as well, hopefully extending a training program beyond just the autism program. This would be particularly useful for students exiting the program and for students who should be placed in other classrooms so that students can be provided with a free and appropriate education in the least restrictive environment as outlined in IDEA.

Circumstances. Obtaining an understanding regarding pertinent organizational circumstances or information about the facts and conditions within the organization is relevant to program design as well as determining appropriate timing for implementation (Maher, 2000). In regards to the stability of the positions of current administration, leadership and personnel, there has historically been a high turnover rate for various reasons. The administration, case managers, therapists and leadership personnel involved in the autism program all have other duties and responsibilities in the district and can be reassigned if there is a need elsewhere within the district; the autism program is not the sole focus for these personnel. In addition, the stability of the teaching staff can be impacted by long term illnesses, maternity leaves, transfers and the decision to pursue employment elsewhere, though if at all possible, it is preferred to maintain consistency in the teaching staff. If there is a need for a new teacher, administration focuses on hiring well-qualified individuals who have a solid background in working with an autistic population so that the teachers can assist in orienting new paraprofessionals to the

program. The administration also would prefer to maintain as much stability as possible in regards to the employment of the paraprofessionals in case a teacher needs to be replaced, in addition to maintaining consistency for the students; however, the least stable population among the personnel in the autism program is the paraprofessional staff. While at the beginning of the program, more staff were appointed, currently, human resources or the individual buildings will often assign substitutes. The case managers have asked the buildings to be as consistent as possible, but the substitutes will often ask to be transferred if they feel that the demands of the position are too difficult. They will also often leave if they are able to obtain a position with benefits elsewhere. While some of the paraprofessional staff has been with the autism program from the beginning, more paraprofessionals are needed to replace staff members that follow students exiting the program, for new students with an emergent need for a personal aide and to adequately staff new classrooms that are opened.

Beyond stability of personnel that would be associated with the autism program, the organization's mission and strategic plan are critical to program implementation. Currently, the autism program is undergoing some transition following the end of the consulting agency's contract. The administration would like to find new assessment tools for the program and move to a more educationally based focus, rather than a medical model, though this will not significantly impact the day to day routines in the classrooms. Once the appropriate instruments are selected or developed to meet the program's needs the administration intends to maintain consistency going forward, unless new research indicates that procedures should be changed. The program's coach is currently working

towards standardizing data sheets, program books and teaching strategies to aid to facilitate the transition of students from one classroom to another.

Timing. Temporal factors can impact the essential features and breadth of program design. The administrators and coach that were interviewed were supportive of allowing time for program design, implementation and evaluation. While the autism program has its own funding and there are grants that can be applied for in order to fund a program, it is hoped that resources already available in the district such as staff, technological equipment and physical space can be utilized to the fullest extent possible. There are no current events such as elections or new leadership that would make the timing of a program inappropriate. The administration welcomes the opportunity to augment the current training practices of the autism program and feels that the training will be well received.

Obligation. The obligation of individuals within the district to be involved in the program or the level of buy-in is relevant to programmatic decisions, especially when it is necessary for individuals to actively support an initiative like training as well as whether more information is necessary to increase the obligation that individuals and groups feel towards a program (Maher, 2000). The administration, case managers, teachers and related service providers are actively supportive of a training initiative. Those interviewed did not feel there was anyone who might not support a training program.

Resistance. Resistance to a program may take the form of overt resistance, such as open statements at a meeting or less obvious resistance such as not attending planning sessions; it is important to understand resistance so that it can be neutralized as much as possible (Maher, 2000). Most of those asked to participate in the process of designing

and implementing this program have been overtly supportive; however, it did take more time than was originally allotted for staff to complete the paraprofessional surveys, despite frequent reminders, and there were those who chose not to complete them. It is possible that this is indicative of covert resistance and that some of the paraprofessionals need additional information or incentive in order to obtain buy-in to this process. Some potential aspects of the program that may lead to resistance are timing and budget. It is anticipated that there may be some difficulty in achieving a high turnout if training is scheduled after school because the substitute paraprofessionals are not legally contracted to be there and may not choose to attend unless compensated. Some paraprofessionals and staff members have families and therefore, trainings that occur after school may not fit into staff members' schedules even if they are fully supportive of the training process. Finding adequate coverage for trainings during the school day may also be challenging, as would adding the responsibility to the schedules of case managers, related service providers, teachers or coaches if they are asked to train the paraprofessionals. In order to ensure that the interest level is high and to ensure that there is adequate background understanding, it may also be beneficial have trainings available for new staff members and those who have been working for the program for some time. In addition, if funding is needed, time must be allotted for submitting grants or requisitioning funds from the program's budget. Potential language barriers should also be considered since many of the paraprofessionals' first language is Spanish and some are still Spanish dominant; it may be necessary to provide information in both languages in order to ensure that it is understood. These obstacles should be taken into account when designing programs in order to facilitate successful implementation.

Yield. A training program is anticipated to add value to the target population, the paraprofessionals, as well as benefitting the other program personnel, students and the organization as a whole. Providing training will increase the knowledge base and skills of the paraprofessionals. The administration feels that standardizing the training will ensure that everyone is on the same page, that the program will have high quality and effective assistants throughout the program and that student transitions from room to room will be more seamless. In addition, the administration felt that training the paraprofessionals would be helpful when paraprofessionals are assigned, as those who are trained can provide models for new staff.

Summary

The target population for this program initially included all of the paraprofessionals working for the autism program in an urban school district. A needs assessment was conducted to examine the needs of these paraprofessionals in the vocational domain, specifically in regard to their needs in the area of skills and knowledge relevant to effectively working with students with autism. Based on data collected from surveys completed by paraprofessionals and teachers as well as administrator interviews, it was decided to segment the target population and design a program specific to paraprofessionals who are new to the program and would most benefit from training to enhance their knowledge and skills in working with students with autism. Many of the paraprofessionals entering the program have no prior experience working with students with autism or exposure to coursework, workshops or consultations which would provide them with the knowledge and skills required to work with a population with very specialized needs. The population of paraprofessionals who

have greater experience and exposure to information from workshops and consultations may benefit from a more advanced training program that could be designed at a later date. The results of a context assessment suggest that there may be some factors in the areas of the organizational circumstances and resistance that may hinder implementation of a training program in this district.

Chapter V

Program Design

Based on an analysis of the results of a needs assessment conducted with the paraprofessionals, teachers and administrators involved with the autism program in an urban school district, it was determined that there was a need to design a training program in order to augment paraprofessionals' knowledge and skills in areas necessary to work effectively with students with autism. The following chapter will focus on the design of this training program, including an outline of the program's purpose and goals, the policies and procedures of the program as well as the necessary resources and the roles of various personnel in the program's implementation. Lesson plans for each training module will also be described.

Purpose and Goals

Statement of purpose. Paraprofessionals new to the autism program will participate in a training program. The training program will consist of two components. Training sessions that consist of lecture and discussion, as well as modeling and role-play of skills as appropriate, will be utilized to introduce knowledge and skill areas as is indicated by best practices in the field of adult training (Jahr, 2008). In addition, there will be a performance feedback component to be delivered following the trainings, while the paraprofessionals are working with students with autism in the classroom; providing performance feedback will ensure that the paraprofessionals are technically accurate when practicing the skills learned in trainings, that skills are reinforced and maintained over time and will facilitate the generalization of skills learned in trainings. Through this approach, it is expected that the paraprofessionals will acquire the foundational

knowledge and skills necessary to work effectively with students with autism in the program. The training sessions, in conjunction with performance feedback, are also predicted to increase the paraprofessionals' feelings of competence in performing their roles in the classrooms and to decrease the negative impact of staff transitions on classroom dynamics, which is exacerbated when staff members such as paraprofessionals are not adequately prepared for the responsibilities that they are asked to assume when assigned to the autism program.

Goals. According to Mahr (2000), program goals are statements that reflect valuable accomplishments or gains by the target population in regard to knowledge, skills or abilities that result from a human services program. Program goals provide focus for the subsequent program and should be SMART: specific, measurable, attainable, relevant and time-framed (Maher, 2000). The following goals are derived from the vocational needs of the paraprofessionals as indicated by the needs assessment, with consideration of the properties of SMART goals.

1. Paraprofessionals will develop an understanding of Autism Spectrum Disorder (ASD) as well as the way in which it impacts the students with whom they work and the role of a paraprofessional in the autism program.
2. Paraprofessionals will develop an understanding of basic behavioral principles such as function of behavior, principles of reinforcement in addition to antecedents, behaviors and consequences.
3. Paraprofessionals will apply principles of function-based intervention by acquiring and employing technical skills in the area of behavioral procedures that are effective when working with students with autism.

4. Paraprofessionals will develop an understanding of effective teaching procedures for children with autism as well as technical skills in applying these procedures, including natural environment teaching (NET), intensive teaching trials (ITT), incidental teaching, discrete trial training (DTT) and eliciting requests.
5. Paraprofessionals will increase their understanding and technical skills in the area of data collection.

In regard to measuring goal attainment, the paraprofessionals' progress towards these goals will be assessed by quizzes developed by the trainer that will be administered prior to and following each of the trainings. In addition, the observations of paraprofessionals by classroom teachers working for the autism program, case managers, special education coach and the trainer will be used to assess progress towards goals. In particular, the trainer's observations of the paraprofessionals will be utilized and these observations will occur one to two weeks following the training, one month after training and three months after training occurs. It is believed that these goals can be attained by the paraprofessionals in the course of five trainings, in conjunction with performance feedback administered in the classroom setting.

These goals were based on the input from the paraprofessionals, teachers and administrators who participated in the needs assessment. Both the paraprofessionals and the teachers indicated the knowledge, skills and abilities encompassed by these goals to be the most necessary and relevant for the paraprofessionals. Since the target population was segmented and the training will be directed at paraprofessionals new to the program, an overview of autism and the way in which it pertains to the paraprofessionals' role in the autism program was determined to be a critical component of the training program for

that part of the population. Beyond developing an understanding of ASD, the other goals target specific areas that are most essential in the daily routine of the program, including enhancing understanding and application of behavioral principles. The paraprofessionals will be expected to implement behavioral procedures, collect data and utilize effective teaching procedures during individual and small group instruction in the course of the daily routine in the autism program primarily under the direction of their classroom teacher, but also when the teacher is not present during lunches and preps or in the event that the teacher has to take a sick day. The goals cover the basic areas that are most critical for working effectively in the autism program and will provide a strong background for more advanced training at a later date.

Eligibility Standards and Criteria. Based on segmentation of the target population, a paraprofessional is eligible to participate in this training program if he or she is new to working in the autism program. Paraprofessionals working as both classroom aides and personal aides will be eligible to participate in training. The paraprofessionals new to the program were targeted because that segment of the population has the greatest need as indicated by the needs assessment data. While paraprofessionals working for the program for longer periods of time also felt that they needed trainings, the client and primary examiner felt that at this time it would be more important to target those with the least amount of knowledge, skills and abilities pertaining to areas critical for working with students with autism. It was also felt that the paraprofessionals who have been with the program for a greater amount of time would benefit from different training content and that those with more experience could be targeted at a later time, as it is not as great of a priority.

Policies and Procedures

Policy statement. The purpose of this policy statement is to outline the operations of a program so that it can be clearly understood by all parties concerned, including the primary examiner, the client and those who will implement the program; areas are specified such as the target population who will be provided with the program, how the program will be delivered as well the goals or what can be expected from participants after they enter into the program (Mahr, 2000). The policy statement for the current program is as follows:

Every paraprofessional who is new to the autism program is eligible to participate in a series of training sessions in critical areas that are relevant to working in the autism program as well as to receive performance feedback to reinforce the skills that they will learn. Subsequent to participation in the program, the paraprofessionals are expected to attain a greater understanding of autism and strategies relevant to working with students with autism; they are also expected to demonstrate accurate technical skills in working with students with autism.

Procedures, methods and techniques. Maher (2000) defines procedures, materials and techniques in the context of program design. A procedure is the way in which a program implementer proceeds in presenting parts of the program in a given manner and provides an overview of how the program will be implemented. An example of part of a procedure would be providing participants with an introduction to a program. Methods are specific ways of doing something as part of a program as per research on best practice, a curriculum guide or plan; a method requires a person utilizing the method to have knowledge of why it is being used as well as any skills needed to implement the

method (Maher, 2000). Methods might include modeling or role-playing to teach a skill. Techniques can be differentiated from methods in that they are specific and prescribed ways of performing the technical details of a skill. Methods are typically comprised of interrelated techniques.

Procedures. This program will be comprised of five training sessions, which will cover the following areas: an overview of autism, basic behavioral concepts and assessment, behavior procedures, teaching procedures and data recording. During the overview of autism, which will be presented in the first session, the paraprofessionals will be introduced to the training program as a whole as well as to the autism program, after which the purpose of the respective programs will be explained. At the beginning of each training session, the paraprofessionals will receive a handout outlining the contents of that session; the trainer will review this handout to orient the paraprofessional to the information that will be covered in that training module. The paraprofessionals will also receive a quiz that will be completed and reviewed at the end of the training session following the presentation of material in order to reinforce what was just learned. Time will be specifically allotted during the introduction of the material and during the conclusion for the paraprofessionals to ask any questions that they might have either verbally or by submitting index cards that will be available; providing the opportunity to ask questions, particularly in the first session, can enable the trainer to adjust the content of the sessions as needed and to provide clarification of information as necessary. Following the training sessions, the trainer will observe the paraprofessionals to ensure that the skills acquired in training are being implemented correctly and deliver performance feedback to the paraprofessionals to make any necessary adjustments. The

performance feedback will be delivered in the classroom; additional performance feedback may be delivered in another setting if there is a need for more extensive review and practice.

Methods and techniques. The two primary methods that will be utilized in this program are training sessions and performance feedback; each of these methods requires the trainer to use a combination of specific techniques to be used based on their professional judgment regarding the technique best suited to the task at hand. In regard to the training component of this program, paraprofessionals will participate in 5 training sessions. In order to ensure that the paraprofessionals effectively acquire the knowledge and skills presented in these sessions, the trainer will use a variety of techniques. By using a variety of techniques during the trainings as well as a multimedia approach, the trainer can address the learning styles of all participants. The trainer can increase participation through the use of techniques such as open discussion, the use of response cards, polling the group for a response, encouraging subgroup discussions and games as appropriate. The trainer will lecture to relay necessary information about the necessary knowledge and skills that the paraprofessionals require to better perform their job functions. The lecture portion of each training session will include a preview of content, summarizing what is to come later in the training, which can enhance the paraprofessionals' knowledge and skill acquisition in the following ways: to organize their listening as well as to increase interest by highlighting the relevance and utility of the training to the paraprofessionals, thereby increasing involvement in the training. The preview of content will consist of reviewing the handout that is provided to the paraprofessionals at the beginning of each session that outlines each session; this will

also provide the paraprofessionals with a visual backup and an ability to take notes which the paraprofessionals can later refer back to, so as to reinforce and review what they will learn through training. Other adult training techniques that can be used to increase interest and later retention include modeling a skill, telling a lead off story or case study to illustrate and practice concepts as well as using experiential learning activities specific to the training topics such as watching videos while practicing data coding or role playing to practice behavioral techniques. Experiential learning activities, in particular, can allow the paraprofessionals to practice specific skills and apply what they have learned in the course of the training. To ensure that the paraprofessionals understand and retain what is taught during the training, the trainer can ask spot questions periodically or give a written quiz that can be reviewed at the end of training.

The second method that will be used by this training program is performance feedback. The performance feedback component of this program is intended to identify and praise skills performed correctly by the paraprofessionals as well as to identify and correct the steps not performed correctly by the paraprofessionals while they are in the classroom setting (Hall, Stadnick Grundon, Pope & Balderama Romero, 2009). There are several techniques that are most effective in using performance feedback, including specificity, timeliness and manner. In regard to specificity, a trainer would say exactly what the paraprofessional was doing correctly and incorrectly at a given time. Timeliness involves ensuring that the feedback is provided soon after the paraprofessional does something so that the behavior is reinforced or corrected directly after it occurs. The manner in which feedback is provided is also important; the feedback should be provided as positively as possible, including corrective feedback. Corrective feedback should

include identifying the skill that the paraprofessional is having difficulty with, questioning the paraprofessional to determine if the skill is understood and summarizing the steps that the paraprofessional should use the next time that they have to perform the skill. If the paraprofessional needs to correct a skill, positive feedback regarding what they are doing well should also be delivered before and after the corrective feedback. Individuals tend to respond and listen to positive feedback so while feedback should be accurate, factual and thorough, sandwiching the corrective feedback with positive performance feedback increases the likelihood that the recipient will listen and benefit from the corrective portion of the feedback.

It was felt that it was important to utilize both the method of training sessions as well as performance feedback. The training component of the program will present information in a variety of ways to assist the paraprofessionals in acquiring necessary knowledge and skills to be successful in the classroom. The performance feedback component will assist the paraprofessionals in skills to the classroom setting and maintaining their skills over time.

Materials

The materials required to run the training component of the program include forms and office supplies as well as PowerPoint slides at the trainer's discretion and audiovisual materials. The autism program's data sheets that the paraprofessionals will be expected to assist with in their classrooms throughout the school day will be necessary for certain training modules. Office supplies such as writing implements, paper, whiteboards or chalkboards will also be available for be used on an as needed basis. In addition, quizzes and videos will be used in order to reinforce the knowledge and skills

presented in the trainings as well as to accommodate the paraprofessionals' different learning styles.

In regard to the performance feedback component of the program, the trainer will require paper and writing implements to take notes regarding the paraprofessional's performance, which will be reviewed should the paraprofessional require assistance with implementing the skills acquired from training sessions. The trainer could also use the videos shown during the trainings to review concepts and explain them in greater depth.

Equipment

The program will require minimal equipment. For the training sessions, a computer connected to a projector will be used to show presentation slides or videos that will complement the training session topics at the discretion of the presenter. Inventory counters and clickers as well as iPads will also be needed for the trainings involving data collection.

Facilities

The facilities necessary for conducting the training component of this program will include one of the multi-purpose rooms that are located in schools throughout the district that can be reserved for this purpose. In regard to providing performance feedback, the classrooms of the autism programs will be utilized while the paraprofessionals are working in order to ensure that the skills learned in training sessions will be implemented correctly. Classrooms that are empty during specials can also be used if the trainer needs to provide more extensive feedback or re-teaching of skills based on observations of the paraprofessionals' performance.

Personnel

Roles. A role is the function that an individual performs as part of a program or component of a program; in regard to clarifying that function of a role, it is important to consider role accomplishments, the outcomes or results expected from the individual performing a given role (Maher, 2000). There are the primary roles that will be involved in the effective implementation of the training and performance feedback components of this program. These roles include special administration administrators, a direct service provider and the consultant. The functions of the roles and role accomplishments that will facilitate the paraprofessionals' progress towards attaining program goals are as follows:

1. Administrator: The role accomplishment of the director of special services and supervisor of the autism program will be to ensure that the program is implemented with fidelity.
2. Direct service provider: The role accomplishments of the direct service provider, who in this case will serve as a trainer, include teaching lessons and reinforcing those lessons through performance feedback; this will result in enhancing the skills and knowledge of program participants, thereby making the participants more effective in their daily job performance.
3. Consultant: The consultant's role accomplishments include designing the components of the program based on available data as well as to assure that any issues that may arise during implementation are dealt with efficiently.

Responsibilities. Responsibilities include the specific tasks that are assigned to a person based on their role in a component or overall program (Maher, 2000).

1. Administrator: The responsibilities of the director of special services and supervisor of the autism program are to supervise the implementation of the program and to ensure that it is implemented correctly as per the program design. This may include making sure that all necessary materials, equipment and facilities are available when training sessions are scheduled, scheduling coverage for paraprofessionals or arranging for incentives as necessary, monitoring progress and providing feedback to the direct service provider or consultant if any adjustments need to be made in the course of implementation.
2. Direct service provider: The responsibilities of the trainer include imparting the information and skills necessary for new paraprofessionals to better to perform their job functions through instructing the paraprofessionals in five training sessions. The direct service provider is also responsible for providing performance feedback to the paraprofessionals while paraprofessionals are working in their classrooms in order to facilitate the generalization of skills. In addition the trainer will also assist the paraprofessionals who may need clarification or additional instruction following performance feedback as necessary.
3. Consultant: The responsibilities of the consultant include identifying any problems and opportunities with the program client, listening and assisting with problem solving when the client has programmatic concerns, communicating the results of consultation transactions and collaborating with all parties involved.

Relationships. Relationships in the context of program design refer to how one individual involved in the program interacts and communicates with others involved

in the program. In terms of this program, the supervisor or director and the consultant will have a relationship in that they will discuss program implementation and problem solve when any part of the program needs to be adjusted. The administrators will have a relationship with the direct service provider that can involve observing the way in which the trainer is instructing the paraprofessional and providing feedback. The consultant will also have a relationship with the trainer in order to assist with the content and delivery of the trainings as well as to provide any other necessary guidance. The direct service provider will have a close relationship with the participants, as the trainer will be implementing both the training sessions as well as the performance feedback component of the program.

Incentives

Incentives can assist in inducing the various people involved in implementing or participating in a program to buy in or give their support, which can increase the likelihood of the program attaining success. At this time, the incentives for the current program will be nonmonetary for the administrators, paraprofessionals and teachers who will be actively involved in or who will be impacted by this program in other ways. In terms of the administrators, the autism program in the district is one of the most litigious and the issues of paraprofessional training as well as data collection frequently come up when parents are advocating for a more restrictive educational environment for their student. An exceedingly motivating incentive for the administrators would be spending less time and energy handling cases that are or that could become litigious; preparing the paraprofessionals adequately may lead to fewer parent complaints or resulting court cases. Beyond allowing administrators to devote the resource of time, which is highly

valued, to other tasks, this program can ensure that the administrators are better prepared in the event that a case does go to court. It is in the district's best interest to be able to demonstrate that the paraprofessionals are trained as per recommendations for best practices for students with autism in the state. Training the paraprofessionals in data collection so that every student's data book is accurate and up to date in case it is called into evidence is also critical. If the district is more successful in court cases, it could save the district money that might be spent if the court decides in favor of a parent who is suing for an out of district placement.

The incentives for the paraprofessionals differ from that of the administrators. Training paraprofessionals may decrease staff turnover; new paraprofessionals in the program often ask for transfers since all paraprofessionals are paid the same regardless of the level of a student's needs and they can make the same working with a less challenging population. Some paraprofessionals ask for transfers because they feel that they do not have adequate experience in dealing with the level needs exhibited by students with autism. In regard to the paraprofessionals who are eligible to participate in the program, the knowledge and skills that they can acquire from the trainings and performance feedback would make their jobs easier on a daily basis and lead to higher feelings of competence. In particular, learning how to manage and decrease challenging behaviors would be immediately motivating and nearly all of the paraprofessionals' surveys expressed an interest in trainings pertaining to addressing behavioral issues in the classroom. Another incentive of the program for the paraprofessionals would be increasing their job security. A majority of new paraprofessionals in the district are now typically hired as substitutes rather than as full time employees, therefore, it is motivating

for the paraprofessionals to participate and to apply what they learn so that they will continue to be asked back to work. After investing time and staff hours in training the paraprofessionals, it would be in the best interest of the district to maintain them as employees if they are successful in utilizing the knowledge and skills taught in training sessions. Finally, administrators, teachers, case managers and related service providers can provide positive attention and feedback to the paraprofessionals to make them feel appreciated for their efforts. Since the trainings may have to be offered in part during lunches or at the end of the day it is possible that the paraprofessionals may view the program as extra work because paraprofessionals who are not contracted are not required to attend mandatory staff trainings. As of now, monetary incentives are not under consideration, but it may be necessary to reopen this option in the future; as the paraprofessionals' salaries are not very high and most are paid the daily rate of a substitute teacher without benefits, this would likely be a very highly valued incentive for the paraprofessionals.

While the teachers are not directly participating in the program, with the exception of providing positive feedback and attention to the paraprofessionals, the daily routine of the classroom may be impacted if the paraprofessionals are removed from the room for training or the trainer comes into the room to provide performance feedback; therefore, it would be prudent to communicate the incentives that the teachers will accrue as a result of the program before the program is implemented. Most teachers have expressed support for this paraprofessional training program due to the advantages of having classroom staff that are knowledgeable and skilled. Training the paraprofessionals should result in smoother transitions, which occur during the breaks

and lunches that the adults in the classroom are required to receive as well as when staff members are absent. It is important that all staff members handle behaviors consistently so as not to inadvertently reinforce inappropriate behavior and that staff members are prepared in the event that severe behaviors occur or when multiple students engage in behaviors concurrently; when all the staff is trained in the same techniques, the classroom routine is less likely to be significantly disrupted throughout the day and instruction can be delivered as per the teacher's lesson plans. In addition, training paraprofessionals to collect data appropriately would also decrease the amount of paperwork for the teacher and ensures that data for all students can be collected throughout the day. When a teacher's classroom is running smoothly, it will increase positive feedback from administrators as well as the parents and result in better student outcomes, which should also function as incentives for the teachers in the autism program.

Program Evaluation Plan

The program evaluation plan outlines a plan to evaluate the program, which enables those implementing the program to gather data that will be used to make judgments regarding the program's merit and to make subsequent decisions about the program moving forward (Maher, 2000). For this program, it is important to determine whether the knowledge and skills, taught in the five training sessions and reinforced through performance feedback, are acquired, applied and maintained over time. In order to assess this information, the trainer will utilize quizzes that will be administered at the end of each training session and re-administered three months after the trainings; this will assess if the paraprofessionals acquired the information by the end of the training session and whether the information acquisition is maintained over time. The trainer will provide

feedback as to the paraprofessionals' application of skills and knowledge based on his or her time in the classroom during the performance feedback sessions. If the paraprofessionals demonstrate the knowledge and skills presented, this can be considered mastery of training content. It is also important to obtain feedback from the paraprofessionals in regard to whether they found the trainings useful or how they feel the trainings could be improved. The trainer will administer an anonymous survey at the end of the training series so that the paraprofessionals can provide feedback and comments, which can then inform potential adjustments to the trainings.

Another important consideration will be the trainer's observations of the participants during the trainings. Interim feedback and observations of the participants' behavior during the training sessions will be used to make adaptations to the training program. The participants may indicate behaviorally that the training is too advanced or overly slow by asking many questions or by failing to pay attention. The trainer should note her observations so that any necessary changes can be discussed and instituted. The content and speed of the training then be adjusted to meet the participants' needs. The trainer can ask during the training whether the participants need more or less explanation. An oral evaluation or discussion at the end of the training can be used for reviewing the participants' experiences and obtaining reactions.

Following the collection and evaluation of the data from the quizzes, the results will be shared with the director of special services and the supervisor of the autism program. Each paraprofessional's initial quiz results can be compared to the second administration of the quiz to assess retention of information. These results, along with qualitative feedback from the trainer regarding training session observations, application

and generalization of skills following the trainings and performance feedback and feedback from the paraprofessionals, can be discussed to determine the degree to which the program has proven to be effective and possible changes to the program that may be indicated based on these results.

Components and Lessons

The two fundamental components, or sequences of activities, that comprise this program are training sessions and performance feedback sessions. Paraprofessionals will participate in five training sessions, each of which will be completed in approximately one hour at two-week intervals. Training sessions will occur during the school day rather than after school, so as not to conflict with the contracts of some of the paraprofessionals that specify the hours that the district can require the paraprofessionals to stay. In addition, the district is primarily hiring long-term substitutes for paraprofessional positions at this time; since these paraprofessionals are not paid past the end of the school day, they cannot be required to stay and may not want to in the absence of monetary incentives. Providing the training sessions during the school day circumvents both of these potential barriers to implementation. This training program was designed to be implemented in an urban public school district. In developing this program, a realistic appraisal of the amount of time that could be allotted for the paraprofessionals to be pulled from their classrooms was taken into account. While it would be ideal to have longer sessions, the content was pared down to accommodate the amount of time available. Various techniques will be utilized, such as presenting material in different mediums, having discussions, and completing activities, among others.

The training topics were chosen based on the areas of greatest need as indicated by paraprofessionals and teachers during the needs assessment as well as through consultation with administrators. Training content was based on the autism program manual, literature review regarding best practices in autism as well as research on adult learning and training techniques. The topics of the training sessions will be presented in the following sequence:

- Training 1: Overview of Autism and the Autism Program
- Training 2: Basic Behavioral Concepts and Assessment
- Training 3: Behavioral Procedures
- Training 4: Teaching Procedures
- Training 5: Data Recording

The lesson plans for each session will be detailed in the next section and will include goals and objectives, a list of materials, activities, instructional formats, procedures and key points. The second component to the program will consist of performance feedback, delivered to the paraprofessionals in the interim between the training sessions and following the last training session.

Training Lesson Plans

Training 1

Introduction to Training/Overview of Autism and the Autism Program

Goals and Objectives

Affective goal/s (1):

- Participants will value their role as a staff member in the autism program.

Objectives:

- Participants will explore their feelings regarding the rewards and challenges of working with students with autism. (a)
- Participants will better relate to the way in which students with autism experience the world around them. (b)

Cognitive Goal/s (2):

- Participants will learn about the autism program and their role in the program in addition to acquiring information about autism that can be applied to their jobs.

Objectives:

- Participants will be able to explain the purpose of the autism program and their role in relation to the other staff members. (a)
- Participants will identify the defining characteristics of autism (communication, patterns of behavior and deficits in social interaction). (b)
- Participants will discuss the way in which symptoms can vary from student to student and other associated features. (c)

Materials and Equipment

- Handout packets that include an outline of the training, additional paper for notes as needed and a quiz to be administered at the end of the training (Appendix I).
- Writing implements
- Projector and laptop with internet access

Instructional Formats

- Whole group lecture
- On-the-spot assessment
- Audiovisual presentation

Activity 1: Opening Exercise, 15 minutes**Training Goal Addressed: 1a****Procedures**

1. Upon arrival, participants will receive handout folders from the trainer.
2. The trainer will welcome the participants, introduce herself to the group, discuss her experience in working with students with autism and give a concise overview of the training program as a whole and the content to be addressed that day.
3. The participants will be asked to take turns introducing themselves and to provide all or some of the following information: their name, their level of experience in working with students with autism, their goals and expectations for the trainings and their attitudes or feelings about their jobs thus far.
4. The trainer will write down key themes in the participants' introductions. After the participants have each taken turns, the trainer will summarize the key themes and address how they relate to the workshop.

5. The trainer will give an overview of the autism program, the role of the paraprofessionals and the roles of the other staff members involved.
6. The participants will be given the opportunity to raise any questions they might have so that the trainer can note and address them when appropriate.

Key Points

- The trainer will explain that this is the first of five training sessions. The topics that will be presented over the course of several trainings will include: Overview of Autism and the Autism Program, Basic Behavioral Concepts and Assessment, Behavioral Procedures, Teaching Procedures and Data Recording.
- The trainer will present an overview of the information to be presented so that the participants will know what to expect, referring the participants to the handout packet.
- The trainer will explain that working with students with autism can be challenging at times and that the purpose of the trainings is to provide the participants with knowledge and skills that can make their daily job tasks easier.
- The trainer will give a brief overview of the autism program and the paraprofessionals' role in the program. The trainer will distinguish between the responsibilities of the paraprofessionals and other staff members as well as reviewing the paraprofessional's basic responsibilities. The trainer will discuss why the paraprofessionals will probably work with different students, even if they are assigned as a personal assistant rather than a classroom assistant, explaining that it helps the students to generalize skills. The goal of working with students of autism as a paraprofessional is to work towards the student becoming more

independent. The trainer will briefly cover the program's policies in regard to communication with various team members.

- The trainer will emphasize the value of the paraprofessionals' role while recognizing the challenges involved.
- She will then transition to the next activity.

Transition

- “Now that we've had the opportunity to get together and discuss some feelings, challenges and goals we are going to move forward. During the next section of the training, I will provide you with more information about autism that will provide you with a deeper understanding of the students with whom you work.”

Activity 2: Introduction to Autism, 30 minutes

Training Goals Addressed: 2b, 2c

Procedures:

1. Participants will watch the Introduction to Autism video available on the Rethink Autism website which will last for 9 minutes and 30 seconds (Rethink, 2014a).
The video shows footage that illustrates the deficits of students with autism in the areas of social interaction, communication and behavior.
2. The trainer will elaborate further on the content areas described in the first video segment in addition to discussing comorbid disorders and other associated features of autism.

Key Points:

- Video (Rethink, 2014c)
- Autism is a developmental disability characterized by deficits in social interaction, impairments in communication as well as repetitive and stereotyped patterns of behavior and interests.
- *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-V)* criteria: Core features include deficits in reciprocal social communication and social interaction as well as restricted or repetitive patterns of behavior, interests or activities. The severity of symptoms is rated as requiring support, requiring substantial support or requiring very substantial support.
- Students with autism must demonstrate all of the following deficits in social communication and interaction to receive a diagnosis:
 - Students with autism demonstrate deficits in social-emotional reciprocity; deficits in nonverbal communicative behaviors used for interacting socially; deficits in developing, maintaining and understanding relationships. They may present with difficulties with social approach and back-and-forth conversation, initiating or responding to social interactions, decreased sharing of emotions or affect, poor eye contact, unusual body language, difficulties in understanding body language, an inability to understand and adjust behavior to suit social contexts, difficulties in making friends or an absence of interest in others.

- Students with autism must demonstrate at least 2 of the following restricted or repetitive patterns of behavior, interests or activities:
 - Stereotyped or repetitive motor movements, use of objects or speech; insistence on sameness, inflexible adherence to routines, or ritualized patterns of behavior; highly restricted, fixated interests; and over or under-reacting to sensory input or unusual fixation on sensory stimuli. This might present as lining up toys, echolalia, becoming unusually upset at small changes or transitions, extremely limited or obsessive interests, distress when faced with certain sounds or textures and a failure to react to pain or temperature.
- Approximately 1 in 68 children are diagnosed with an Autism Spectrum Disorder (ASD) according to most recent reports by the CDC.
- ASD is frequently associated with intellectual and language impairments; about 70% of individuals have one comorbid disorder and about 40% have two or more disorders in addition to ASD.
- Conditions that commonly occur with autism include obsessive-compulsive disorder; epilepsy, Fragile X, cerebral palsy, phenylketonuria, Turner's syndrome, tuberous sclerosis, Tourette's syndrome, Attention Deficit Disorder, specific learning disabilities, sleep problems, developmental coordination disorder, anxiety disorders, depressive disorders and Down's syndrome
- Medical conditions that commonly occur with autism include epilepsy, sleep problems, and constipation; narrow food preferences may also exist.

- Students with autism can vary in regard to symptom presentation, students with autism can present with symptoms that are mild to severe and the presentation of symptoms can vary greatly from one student to another.
- Implications of ASD include a significant impact on learning, delays in adaptive skills, sensory sensitivity, adherence to routines and difficulty coping with change. In adulthood, social isolation and communication problems often continue, preventing gainful employment and independent living.
- The most effective treatment for autism is ABA.

Transition:

- “Now that we have learned more about autism, we are going to watch a short video that can help us understand what it might be like for an individual with autism to go about his or her day. After we do that, we will discuss the video and address any questions you may have.”

Activity 3: Relating to Individuals with Autism, Concluding Exercise (15 minutes)**Training Goals Addressed: 1b****Procedures:**

1. The trainer will show this video lasting 2 minutes and 30 seconds that approximates what sensory overload might present as in a student with autism (Jiron, 2012)
2. Trainer will facilitate a whole group discussion about the video.
3. Ask the participants if any of their views that had been discussed earlier in the training had changed as a result of this experience.

4. Ask the participants what they liked or what they would change about the workshop.
5. The trainer will offer to answer any questions that participants might have.
6. Ask participants to complete a self-assessment questionnaire.

Key Points:

- Encouraging the participants to reflect on their experiences, including what they have learned and would like to learn.

Training 2

Basic Behavioral Concepts and Assessment

Goals and Objectives:

Affective goal/s (1): Participants will process their feelings related to behavioral incidents that occur in the course of working with students with autism.

Objectives:

- Participants will differentiate between behaviors occurring a function and the idea that a student is trying to upset them purposely in order to assist in managing stressful situations (a).

Behavioral Goal/s (2): Participants will assess behaviors, select appropriate strategies to address behaviors and choose strategies to implement effectively.

Objectives:

- Participants will operationally define behaviors (a).
- Participants will interpret antecedents, behaviors and consequences (b).
- Participants will select and employ strategies appropriate for a given behavioral function. (c).

Cognitive Goal/s (3): Participants will understand factors that influence behavior including antecedents, behavior and consequences as well as the way in which functions of behavior correspond to behavior intervention.

Objectives:

- Participants will identify setting events, antecedents, behaviors and consequences (a).
- Participants will identify the functions of behavior (b).

Materials and Equipment:

- Handout packets that include an outline of the training, additional paper for notes as needed and a quiz to be administered at the end of the training (Appendix J).
- Writing implements
- Projector and laptop with internet access

Instructional Formats:

- Whole group lecture and discussion
- On-the-spot assessment
- Audiovisual Presentation
- Subgroup discussion

Activity 1: Opening Exercise, 10 minutes**Training Goal Addressed: 1a****Procedures:**

1. Upon arrival, participants will receive handout folders from the trainer.
2. The trainer will welcome the participants and give a concise overview of the training content to be addressed that day.
3. The participants will be asked to discuss some behavioral situations that they have encountered thus far in the course of working with students with autism and their feelings relating to those situations.
4. The trainer will write down key themes in the discussion. The trainer will summarize the key themes and address how they relate to the workshop topic.
5. The participants will be given the opportunity to raise any questions they might have so that the trainer can note and address them when appropriate.

Key Points:

- The trainer will discuss common emotional responses to behavioral issues in the classroom and explain that the purpose of this training is to provide the participants with knowledge and skills that can make their daily job tasks easier.
- The trainer will present an overview of the information to be presented so that the participants will know what to expect, referring the participants to the handout packet.
- The trainer will discuss how behaviors have a function and that there are reasons that students engage in behavior, emphasizing that the participants should not take behavioral incidents personally as a transition to the next activity.

Transition: “Now that we have discussed some emotional responses to behavior we are going to transition to our next activity. During the next section of the training, I will provide you with more information about behavioral concepts and assessment. This information will help you understand the behavior of the students with whom you work as well as assisting you in selecting appropriate interventions.”

Activity 2: Introduction to Behavioral Principles (25 minutes)**Training Goals Addressed: 3a, 3b****Procedures:**

1. The trainer will lecture about behavioral principles.
2. Trainer will show approximately 12 minutes of video from the Rethink Autism website that will illustrate the previously discussed principles (Rethink, 2014d).

Key Points:

- Video (Rethink, 2014d)

- The trainer will describe setting events, antecedents, behaviors and consequences.
 - Antecedents are usually simple, immediate and discrete events that occur before and trigger problem behaviors. Examples include:
 - Physiological – pain, illness
 - Cognitive/emotional – mental health condition, emotional state
 - Physical environment – seating arrangement, noise, temperature
 - Social/activity events – academic demands, method of instruction, delivery of feedback, change in routine or transitions, teasing, type of task
 - Time of day
 - Prompting methods: ambiguous requests, distracting stimuli, too much information, reprompting too quickly, too many steps, unfamiliar request
 - Task related problems: Too complex, too much information, too long, requires independent initiation, too many directions, directions unclear, too much material to keep organized.
 - Instructional conditions: oral directions, lecture, pacing too fast or too slow, disorganized, boring or confusing, abstract discussion
 - Transition Problems: preference transition, teacher/staff transitions, procedures/routine transitions, activity or physical transitions
 - Behaviors are actions and responses to stimulation.

- Consequences are what the individual gains access to or events that are avoided following a behavior. Consequences maintain and reinforce a behavior.
 - Positive reinforcement occurs when a behavior results in the addition of a stimulus to the environment that increases the occurrence of a behavior
 - Negative reinforcement occurs when a behavior results in the removal of the stimulus and results in the increase of a behavior
 - Automatic reinforcement persists across many contexts independent of socially mediated consequences
- Setting events are conditions or events that make an event more probable, circumstances that alter the value of reinforcers and make a behavior more likely to occur. They do not evoke the problem behavior on their own. Examples include: medications, medical/physical problems, sleep cycles, eating routines/diet, changes in daily schedule, number of people in the environment, staff patterns, relationship history with people or environment, change in routine, emotional stressors, etc. Setting events impact antecedent events such that they predispose us to act in atypical ways and reduce one's ability to tolerate nonpreferred conditions.
- The trainer will teach the participants to describe a behavior operationally.
- The trainer will discuss the possible functions of behavior and how that relates to choosing appropriate interventions based on the behavior's function. The trainer

will explain that the function is related to either antecedents and consequences or internal experiences. The functions of behavior are as follows:

- Escape/Avoid: to get out of or away from something such as a difficult task, a long task, a social situation or automatic reinforcement
 - Tangible: to get or obtain an object or activity
 - Attention: to get or obtain attention from peer or adult
 - Sensory: to get or obtain automatic positive reinforcement
- General responses that address the function of behavior:
 - If the behavior's function is to obtain something tangible: do not provide the item until appropriate behavior is demonstrated. Other strategies include teaching the student to ask for the item in a more appropriate manner.
 - If a behavior's function is avoidance or escape: continue to present the task, provide rewards for attempting the task or teach the student to request for a break or change of activity.
 - If the behavior is sensory, the student should be redirected to something else or taught an alternative activity that provides similar feedback.
 - If the function of the behavior is to obtain attention, do not provide attention when the student engages in the behavior and teach the student to request attention in appropriate ways.
- It is always better to positively reinforce appropriate behavior. Teaching the student the appropriate skill to replace a maladaptive skill is also helpful, particularly if it serves the same function.

- Addressing a student's behavior may include several components, including teaching new skills, altering antecedents, consequences or the environment, using effective reinforcement programs, teaching self-management and coping skills as well as addressing any sensory issues that might exist.
- The trainer will explain extinction burst and emphasize the importance of consistency in behavioral interventions.

Transition: “We are now going to apply the information we have just learned to a few cases. You will break into groups, read scenarios provided in your packet and come up with a plan to address the different behavioral scenarios.”

Activity 3: Application of Behavioral Principles and Concluding Exercise (25 minutes)

Training Goals Addressed: 2a, 2b, 2c

Procedures:

1. Trainer will break the participants into groups to read scenarios and identify the antecedents, behaviors, consequences, setting events if applicable and possible functions of behavior. They will also discuss how the behavior might be addressed.
2. After the groups have had time to discuss, the group as a whole will discuss the answers.
3. The trainer will ask the participants what they liked or what they would change about the workshop.
4. The trainer will offer to answer any questions that participants might have.
5. The participants will be asked to complete a self-assessment questionnaire.

Key Points:

- The participants will be encouraged to utilize the information they learned to target their plan to a given behavior's function.
- The participants will be encouraged to reflect on their experiences, including what they have learned and would like to learn.

Training 3

Behavioral Procedures

Goals and Objectives

Affective Goal/s (1): Participants will explore their feelings regarding their level of comfort in handling behaviors since the previous training.

Objectives:

- Participants will identify situations in which they feel more or less competent in regard to handling behaviors (a).

Behavioral Goal/s (2): Participants will practice the steps behavioral procedures.

Objectives:

- Participants will accurately execute steps of the count and mand, escape extinction, interruption/transition, accepting no and wait procedures (a).

Cognitive Goal/s (3): Participants will learn about specific behavioral procedures utilized in the autism program.

Objectives:

- Participants will determine when to use the count and mand, escape extinction, interruption/transition, accepting no and wait procedures.
- Participants will identify the steps of the count and mand, escape extinction, interruption/transition, accepting no and wait procedures.

Materials and Equipment:

- Handout packets that include an outline of the training, additional paper for notes as needed and a quiz to be administered at the end of the training (Appendix K).
- Writing implements

- Projector and laptop with internet access

Instructional Formats:

- Whole group lecture and discussion
- On-the-spot assessment
- Modeling
- Role Play

Activity 1: Opening Exercise**Training Goals Addressed: 1a****Procedures:**

1. Upon arrival, participants will receive handout folders from the trainer.
2. The trainer will welcome the participants and give a concise overview of the training content to be addressed that day.
3. The participants will be asked to explore their feelings about handling behavioral situations since the previous training and compare those to the feelings they had prior to training. Situations in which the participants continue to feel less competent will be addressed in particular, in order to address any fears that the participants might have.
4. The participants will be given the opportunity to raise any questions they might have so that the trainer can note and address them when appropriate. The trainer will then transition to the next activity.

Key Points:

- The trainer will continue to explore feelings regarding implementation of procedures and reemphasize that the purpose of this training is to provide the

participants with additional knowledge and skills that will their daily job tasks easier.

- The trainer will present an overview of the information to be presented so that the participants will know what to expect, referring the participants to the handout packet.

Transition: “In the next sections of this training, I will present information regarding specific behavioral procedures utilized in the autism program, including the count and mand, escape extinction, accepting no and wait procedures. You will learn the purpose of these procedures and when their use is appropriate as well as the specific protocol to follow when implementing the procedures.”

Activity 2: Introduction of Behavioral Procedures

Training Goals Addressed: 3a, 3b

Procedures:

1. The trainer will lecture about each of the behavioral procedures. The trainer will review each of the procedures with the participants.
2. As each of the procedures is reviewed, the trainer will review which students are candidates for each procedure, what the procedure does and the steps entailed.
The trainer will model the steps for the participants.
3. Participants will be encouraged to ask questions about the procedures.

Key Points:

- The count and mand procedure is used when students engage in inappropriate behavior to get something that they are allowed to have. When this occurs, the individual handling the incident should not give direct attention to the student; the

only thing that should be said or signed is “quiet”. Once the student has calmed down, you should count on your fingers until the behavior has stopped for the entire count. At this point, the student can be prompted to request or mand for what they want. If this is done appropriately, the item should be delivered. If the behavior resumes during the count, start over.

- The escape extinction procedure is used when a student engages in inappropriate behavior in response to a demand. When this occurs you should not give the student direct attention. The original demand should be repeated until the learner complies on his or her own. A varied number of additional demands can be added to build behavioral momentum such as “touch your nose, clap your hands, and show ready.” The student should continue with the current activity.
- The interruption/transition program is used to eliminate behaviors that result from demand situation; the student is taught to transition or to allow interruption of preferred activities. This is often needed when students engage in behaviors to escape from having to transition from a preferred or more reinforcing activity to a less reinforcing activity. In order to do this, a student should be asked to comply with a simple demand to engage in a less preferred activity from a preferred activity. If necessary, a student can be offered a promised reinforcer; when the demand for transition is presented the student is shown a reinforcer that will be delivered after a transition without engaging in problem behavior. If the student complies, he or she should be praised, the promised reinforcer should be delivered if applicable and the student should be allowed to return to the preferred activity. Additional reinforcement may be needed to maintain the student in the less

preferred activity but as the student becomes more successful, the promised reinforcer and other reinforcements should be faded over time. If the student engages in the problem behavior, follow the escape extinction protocol; the promised reinforcer is removed and is no longer available if problem behavior occurs. The number and effort of non-preferred demands should be increased as the student achieves success.

- The accepting no procedure eliminates problem behaviors by teaching the student to accept no. When a student requests an item or activity, say no and offer an equally reinforcing alternative, alternating reinforcers from different motivational categories. If the student accepts no without engaging in problem behaviors, he or she should receive praise and the alternative reinforcer. At first, the reinforcer should be equally preferred but eventually the preference level should be faded until the student is expected to accept no without an alternative offered. If the problem behaviors occur, do not deliver the requested or alternative reinforcer and use the escape extinction procedure. If the student continues to approach while being ignored, implement a walk and peel in which you walk away from the student while peeling the student off of you. If the problem behaviors continue or escalate in severity, direct the student to a nonpreferred activity and prompt to complete while continuing to provide minimal attention. Engage the student in another activity when calm.
- The wait procedure is employed when a student requests appropriately but engages in inappropriate behavior while waiting for the item to be delivered because problem behavior had previously allowed the student to access

reinforcement sooner. The problem behavior is no longer reinforced and the student is taught to wait to access items, activities or attention sooner. The student is told, “You have to wait”. Begin counting out loud and show the passage of time by using your fingers; the count may be different based on the student’s abilities. If the student does not engage in the problem behavior during the entire counting interval, deliver reinforcement. If the student engages in a problem behavior at any point during the interval, restart the count. Continue until the entire count is completed without the student engaging in the problem behavior and afterwards reinforce the student for waiting appropriately. If the count is repeated for many trials and the student continues to engage in problem behavior, you can walk away and the student loses the opportunity for reinforcement; if the student moves away, make sure he or she remains safe but do not follow; just end the count and if the student approaches you can start the count over. Gradually increase the waiting interval, as the student is successful. Once the student is consistently successful with longer intervals, fade the count and say wait while counting for the required time interval silently.

- For any of the procedures, any self-injurious behavior, aggressive behavior or behaviors that result in the destruction of property should be blocked.

Transition: “Now that we have learned about count and mand, escape extinction, accepting no and wait procedures, we will apply and practice these procedures.”

Activity 3: Application of Behavioral Procedures and Concluding Exercise**Training Goals Addressed: 2a****Procedures:**

1. Trainer will break the participants into pairs to practice the procedures.
2. The trainer will present scenarios. The participants will select the appropriate procedure and will then take turns practicing the procedure with their partner.
3. The trainer will circulate with the groups to provide feedback.
4. After the groups have practiced each of the procedures, the participants will be asked what they liked or what they would change about the workshop.
5. The trainer will offer to answer any questions that participants might have.
6. Ask participants to complete a self-assessment questionnaire.

Key Points:

- An emphasis will be placed on implementing the procedures with consistency, even when behaviors escalate.
- The participants will reflect on their experiences, including what they have learned and would like to learn.

Training 4

Teaching Procedures

Goals and Objectives

Behavioral Goal/s (1): Participants will learn how to utilize teaching strategies that work for students with autism.

Objectives:

- Participants will implement effective teaching strategies and supports used to teach students with autism (a).

Cognitive Goal/s (2): Participants will become familiar with a variety of teaching strategies and supports used to teach students with autism.

Objectives:

- Participants will differentiate between the various teaching strategies used in working with students with autism (a).
- Participants will identify the steps used for a given strategy (b).

Materials and Equipment:

- Handout packets that include an outline of the training, additional paper for notes as needed and a quiz to be administered at the end of the training (Appendix L).
- Writing implements
- Projector and laptop with internet access

Instructional Formats:

- Whole group lecture and discussion
- Audiovisual presentation
- On-the-spot assessment

- Modeling and role play

Activity 1: Opening Exercise and Introduction to Teaching Strategies (40 minutes)**Training Goals Addressed: 2a, 2b****Procedures:**

1. Upon arrival, participants will receive handout folders from the trainer.
2. The trainer will welcome the participants and give a concise overview of the training content to be addressed that day.
3. The participants will be given the opportunity to raise any questions they might have so that the trainer can note and address them when appropriate. The trainer will then transition to the next activity.
4. The trainer will present on general research based teaching procedures, providing examples of how to implement them.
5. The trainer will present about various teaching strategies used in the autism program including Discrete Trial Instruction (DTI), prompting methods and Intensive Teaching Trials (ITT). The lecture component will be interspersed with 22 minutes of video clips from the Rethink Autism site (Rethink, 2014a; Rethink, 2014b; Rethink 2014e).
6. The trainer will ask the participants if there are any questions and answer questions

Key Points:

- The classroom teacher will consult with the paraprofessionals when working with students so that the paraprofessionals will be aware of the correct reinforcers, activities and teaching procedures to utilize with a given student.

- General research based teaching procedures include pairing the teaching environment and staff with reinforcers, fading in effort and difficulty of tasks by teaching the most efficient response first, fading in the number of demands, reducing student errors by teaching methods that ensure high levels of correct responses and reinforcement, interspersing easy and difficult demands, mixing and varying instructional demands, pacing instruction properly and teaching to fluency.
- DTI is an effective way to teach new skills by breaking them down into simple responses. The steps are as follows:
 - Get the student's attention. Make sure the student is looking at you, hold a preferred item up to your prompt the student to look at you, stop what you are doing and wait for a response or call his or her name
 - Give a simple direction
 - Prompt as necessary
 - Reinforce the student's response immediately after a student's response
 - Fade the prompts over time, providing less assistance
 - Reinforce independent responses with bigger and better rewards
 - Introduce distractor trials when the student responds consistently without help
 - Video clip (Rethink, 2014a)
- Prompting is anything you do that helps a student to respond to instruction. The steps for prompting are as follows:

- Choose a prompt based on the particular student's skill set; the correct prompt will be effective every time
- When using prompts, start with the most help necessary to respond and decrease assistance over several trials as the student becomes more independent. Better reinforcers should be provided for responses that require less prompting.
- Correct errors when they occur. If a student does not respond after prompt fading go back to the previous prompt and fade more slowly.
- Prompt types include modifying the placement of teaching materials (positional prompt), telling the student how to do a task or providing a verbal model of the response (verbal prompt), provide a signal (gestural prompt), demonstrate or model the response (modeling), manually guiding the student (physical prompt), using text or pictures (visual prompt).
- Video (Rethink, 2014e)
- ITT is a way to teach by capturing the student's interest. The steps are as follows:
 - Set up the environment to encourage the student's interest by starting a preferred activity then stopping it, giving the student an activity with part of it missing, placing preferred items out of reach, placing items in a container that the student needs you to open, consuming a preferred snack in front of the student or modifying something in the environment like turning down a song.
 - Watch for the student to show interest in the activity. He or she may reach, point, mention, ask or look.

- Ask for a response to the item, prompting if necessary. The student could be asked for the name of the item, to say how many there are, to ask for it again, to ask a question, etc.
- Reward the student with the item or activity for a correct response
- Fade prompts as student responds independently
- Prompt for more complex vocalizations
- Video (Rethink, 2014b)

Transition: “Now that we have learned about teaching procedures, we are going to practice implementing them. Please break into pairs to review and practice the steps of DTI, prompting and ITT.

Activity 2: Application of Teaching Procedures and Concluding Exercise (20 minutes)

Training Goals Addressed: 1a

Procedures:

1. Trainer will break the participants into pairs to practice the procedures.
2. The participants will take turns practicing each procedure with their partner.
3. The trainer will circulate among the groups to provide feedback.
4. After the groups have practiced each of the procedures, the participants will be asked what they liked or what they would change about the workshop.
5. The trainer will offer to answer any questions that participants might have.
6. Ask participants to complete a self-assessment questionnaire

Key Points:

- An emphasis will be placed on implementing the procedures with consistency as the participants practice.
- The participants will reflect on their experiences, including what they have learned and would like to learn.

Training 5

Data Recording

Goals and Objectives

Affective Goal/s (1): Participants will value data recording.

Objectives:

- Participants will adopt data recording as a means of measuring student progress and evaluating the effectiveness of instruction that guides developing appropriate programs for their students (a).

Behavioral Goal/s (2): Participants will record different types of data.

Objectives:

- Participants will observe behavior using objective and criteria and record data (a).
- Participants will record other data using the program data sheets (b).

Cognitive Goal/s (3): Participants will learn information necessary to record data effectively.

Objectives:

- Participants will review behavioral concepts and how these concepts can be measured through data recording (a).
- Participants will identify prompt methods and their abbreviations to be used in data recording (b).
- Participants will be able to explain how to use the data sheets (c).

Materials and Equipment:

- Handout packets that include an outline of the training, program data sheets, additional paper for notes as needed and a quiz to be administered at the end of the training (Appendix K).
- Writing implements
- Projector and laptop with internet access
- Stopwatches
- Data clickers

Instructional Formats:

- Whole group lecture and discussion
- On-the-spot assessment
- Modeling and role play

Activity 1: Opening Exercise and Introduction to Data Recording (10 minutes)**Training Goals Addressed: 1a****Procedures:**

1. Upon arrival, participants will receive handout folders from the trainer.
2. The trainer will welcome the participants and give a concise overview of the training content to be addressed that day.
3. The trainer will facilitate a discussion of how the participants determine whether their students are making progress and introduce the use of data recording as a means of measuring student progress and evaluating the effectiveness of instruction that guides developing appropriate programs for their students.
4. The trainer will then transition to the next activity.

Key Points:

- Collecting data is critical for measuring student growth, ensuring that effective instruction is occurring and developing appropriate programming for students with autism.
 - Collecting behavioral data can help find the function of behaviors and to monitor the efficacy of behavior plans.
 - In terms of learning skills, when a student consistently responds correctly, decreasing the level of prompting to move towards greater independence or moving to a new skill may be indicated.
 - If a student is not making progress, he or she may lack the necessary prerequisite skills and other skills may need to be addressed first.
- It is particularly important that data collection be done consistently and accurately.

Transition: “Now that we have discussed why it is important to collect data we will discuss information that you need to record data.”

Activity 2: Introduction to Data Recording (30 minutes)

Training Goals Addressed: 3a, 3b, 3c

Procedures:

1. The trainer will review behavior concepts and how they apply to data recording.
2. The trainer will review prompts and their abbreviations.
3. The trainer will review each of the data sheets and model how the participants would use them.

5. The trainer will ask the participants if there are any questions and answer questions.

Key Points:

- Setting events, antecedents, behaviors and consequences will be reviewed as well as operationally defining behavior. The trainer will then review the appropriate data sheets with the participants and model how to use them, including how to record antecedent, behavior and consequence data as well as how to record frequency and duration data.
- The trainer will review the different types of prompts and their abbreviations, including:
 - Full physical prompt (FP)
 - Partial physical prompt (PP)
 - Verbal prompt (V)
 - Modeling (M)
 - Gestural (G)
 - Other possible information that should be indicated on data sheets with corresponding abbreviations will also be reviewed including independent (I), non-responsive (NR) and resistant (R).
- The trainer will review the program data sheets and model how to use them.

Transition: “Now that we have learned about data recording we are going to practice using the data sheets.”

Activity 3: Application of Data Recording and Closing Exercise (20 minutes)**Training Goals Addressed: 2a, 2b****Procedures:**

1. Trainer will break the participants into pairs to practice the recording data on the data sheets.
2. The participants will take turns practicing with their partner.
3. The trainer will circulate among the groups to provide feedback.
4. After the groups have practiced, the participants will be asked what they liked or what they would change about the workshop.
5. The trainer will offer to answer any questions that participants might have.
6. Ask participants to complete a self-assessment questionnaire

Key Points:

- An emphasis will be placed on utilizing the data sheets with consistency as the participants practice.
- The participants will reflect on their experiences, including what they have learned and would like to learn.

Chapter VI

Discussion and Conclusion

The purpose of this dissertation was to develop a training program for paraprofessionals working with students with autism in an urban school district. Prior to this project, there was no established system to consistently train this population and paraprofessionals working in the autism program typically learned from some combination of on the job training and occasional intermittent in-services provided by the district behaviorist or outside consultants. Administrators and program staff had identified the lack of training as an area of concern; a subsequent needs assessment narrowed the focus to a segment of the paraprofessional population as well as the most critical content areas to be addressed in the training program. This training program, designed based on the needs of the district and relevant contextual factors, targets paraprofessionals new to the autism program and is intended to provide the knowledge and skills necessary for them to effectively service students with autism. While the program was developed for this specific target population and context, it can be adapted for use with other populations. The following chapter will discuss the results of the needs assessment, the limitations of the needs assessment and program design, recommendations and implications for the field of school psychology.

Discussion of Needs Assessment Results

The needs assessment focused on the educational and vocational domains in order to obtain information pertaining to the paraprofessionals' work and job performance. Data were gathered through paraprofessional and teacher questionnaires that focused on identifying specific gaps in the paraprofessionals' knowledge and skills necessary to

effectively work with students with autism. The data collection variables for the paraprofessionals included both demographic variables as well as their level of confidence, the degree to which they felt that they needed additional training and their level of interest in technical competencies related to working in the autism program. The technical competencies included conducting preference assessments, communicating with staff and other individuals, basic behavior assessment and treatment, data recording, behavior procedures, antecedent-behavior-consequence (ABC) data, discrete trial/intensive teaching, activities of daily living, facilitating social skills, prompting and prompt hierarchies, functional behavior assessments (FBAs) and behavior intervention plans (BIPs), requesting/manding, incidental teaching, autism overview and reinforcement. The teachers were asked to rate which technical competencies they felt were the most critical to address through paraprofessional training. Additionally, administrator interviews were utilized to gather context information that would assist in guiding program development. The goal of this process was to develop insight regarding needs related to the growth, development and improvement of the paraprofessional staff, to prioritize the areas of greatest need and to address those areas of need programmatically in a realistic way given organizational circumstances.

The results of the needs assessment supported the identified need of developing a training program for paraprofessionals working in the autism program and further focused the training program on the segment of the paraprofessionals demonstrating the greatest need. The results of the demographic portion of the paraprofessional questionnaire indicated that approximately half of the paraprofessional population had no prior experience working with students with autism prior to being assigned to the

district's autism program. Approximately sixty percent of paraprofessionals had never taken college coursework related to working with students with autism, about forty percent never attended a workshop related to autism and about thirty percent had never received consultation from the district behaviorist, coach or outside consultant. Since the questionnaires were administered at the beginning of the school year, it is probable that this data represents paraprofessionals just entering the program and that that this subset of the paraprofessional population was learning largely on the job, as there was no training program in place for paraprofessionals assigned to the program and many had not previously been exposed to the knowledge and skills necessary to effectively work with students with autism. It was decided to segment the population and design the training program for paraprofessionals starting in the program, as it was considered to be critical to ensure that the paraprofessionals acquire the basic foundational knowledge and skills to work in the autism program.

The questionnaires completed by the paraprofessionals and teachers yielded additional information, identifying the technical competencies that were most needed by the paraprofessionals. The results of these questionnaires revealed that there was consensus between the paraprofessionals and the teachers in regard to which areas were most important to address. An item-by-item analysis was conducted in that the mean responses to each technical competency for each group were compared. The paraprofessionals indicated that the technical competencies of greatest need were teaching procedures, ABC data, incidental teaching, behavioral assessment and treatment and data recording; additional areas of need were an autism overview, prompt hierarchies and behavioral procedures. The teachers indicated that the areas of greatest need to be

addressed in training were behavioral procedures, basic behavior assessment and treatment, ABC data, data recording and teaching procedures. Secondary areas that the teachers felt were important to target in training were requesting and mands, an overview on autism and prompt hierarchies. According to Mahr (2000) there is an increased chance that a program will be successful when it is designed to address the specific needs and context of the target population, therefore, the training topics were chosen based on the areas of greatest need as indicated by paraprofessionals and teachers during the needs assessment as well as information gathered through the context assessment. The resulting training topics and sequence of trainings are as follows: Overview of Autism and the Autism Program, Basic Behavioral Concepts and Treatment, Teaching Procedures and Data Recording. The content and structure of the trainings was based on the autism program manual, the literature review and district resources such as Rethink Autism. It was decided to add an additional component, performance feedback, following the training sessions to ensure that the skills learned in training generalize to the classroom environment and that the skills are reinforced and maintained over time.

Limitations

There are potential limitations to this study, including limitations related to the needs assessment process in addition to limitations that could impact implementation of the proposed program. Some of the limitations related to the needs assessment may involve issues with sampling and data collection. Limitations that might impact implementation of the program include language barriers, the amount of available time allotted, the issue of time referencing and frequent turnover rates. Each of these limitations is addressed in the following section.

It is difficult to ascertain whether the sample was skewed in that those who returned the surveys may have shared characteristics that differ from those who did not respond. For example, paraprofessionals and teachers who returned the surveys might have been more motivated and invested in paraprofessional training than those who did not return the surveys. It is unclear whether any external factors such as these might have affected the needs assessment findings. In regard to representativeness of the sample, the sample size for this study was small; however, this needs assessment was intended to gather information to tailor a program to this particular target population and context. This district is a large urban district that is low income and culturally diverse, though predominantly Hispanic. The target population is drawn, at least in part, from the surrounding community and the program is designed based on this district's specific circumstances and resources. If attempting to implement this program in another district, the specific needs of that target population and the surrounding context, including available resources, should be taken into account.

There are also some drawbacks in regard to data collection methods. Both surveys and interviews can be subjective and may be subject to response bias, based on how the participants want to be perceived at the time. The information provided is a snapshot of the current state of the program and due to the high turnover rates in the district the characteristics of the population assessed may frequently change. The quizzes that will be used to measure the acquisition of information presented will be based on the content of the trainings in order to determine whether the paraprofessionals successfully learn and retain the knowledge from the training programs. The quizzes will focus on training content as opposed to self-report.

In implementing this program, there are some limitations that may require consideration and possible alterations to the program in the future. It is possible that language barriers may interfere with the program's efficacy. According to the survey administered to the paraprofessionals as a part of the needs assessment, about a quarter of the paraprofessionals who participated was more comfortable speaking Spanish than English. The language preference of the paraprofessionals should be assessed and considered when the program is implemented. It may be necessary to consider having the materials translated into another language and having a qualified trainer or translator present who is comfortable with translating the technical content of the trainings. If this is determined to be necessary, it may impact the amount of time allotted for each training session, as translating content and presenting in multiple languages would increase the amount of time to conduct trainings.

Beyond the potential amount of time that might have to be added to the trainings for translation, it may take longer to present information depending on trainer, the level of target population participation and the amount of clarification needed by the participants. Based on the trainer's observations of how each of the training sessions progresses, lessons might need to be modified. Adding time to the training sessions might be problematic as the training sessions were condensed to accommodate the available time and to avoid interfering with contractual issues; previously, substitutes would be put in place for paraprofessional in-services and this may have to be considered as an option if additional time is needed.

Another potential limitation in terms of implementing the program is that it is not time referenced. There is frequent staff turnover and the district has tendency to rely on

substitutes due to budgetary constraints. If there is a staffing change due to attrition or an emergent need for a paraprofessional, a new employee might miss some or the entire program. There will have to be provisions regarding what to do if a paraprofessional misses a session while the training is being provided or if an employee starts after the program runs, such as running the training for new staff at least a few times per year and providing makeup sessions whenever possible. One suggestion would be to make videotapes that could be a backup method for paraprofessionals who miss one session, in order to catch up and continue with the subsequent trainings and performance feedback. It is important to consider that providing training to the paraprofessionals is a significant investment of time and resources and that every attempt should be made to retain trained personnel.

In general, not only does frequent turnover occur with the paraprofessionals working for the district but the rest of the staff in the district also does not often stay in place for long-term periods based on hiring practices in this district. It is uncertain how long personnel will remain in their current positions and whether or not future staff will be invested in continuing with the training program due to the uncertainty of their positions. Due to staff turnover, there have been multiple changes to the autism program as this needs assessment was in progress. If staff turnover occurs and is accompanied by changes to the autism program, this may necessitate changes to the content or form of this training program.

Recommendations and Directions for Future Research

This program, if implemented consistently to address the training needs of paraprofessionals working with students with autism will be beneficial in adding value to

the target population, the paraprofessionals. The training program will ensure that the paraprofessionals acquire the knowledge and skills necessary to perform their roles effectively. If this program proves to be successful, improving the existing program and expanding it should be explored in the future in order to convey additional benefit to the staff of the autism program. If accommodations could be made for allowing the program to increase the length of training sessions, adding additional topics or exploring the existing topics in greater depth could enhance the training program for paraprofessionals new to the program. The paraprofessionals who have been in the program for an extended period of time also expressed interest in trainings; an advanced training program could be developed for these paraprofessionals so that their knowledge and skills can continue to grow. Alternately, a mentorship program could be developed such that more experienced paraprofessionals can assist new paraprofessionals in acclimating to the program. Finally, the possibility of providing training to teachers in the autism program should be explored; this training can focus on imparting the skill of providing performance feedback or knowledge of adult training techniques to the teachers, as the teachers are with the paraprofessionals throughout the day and could work with the staff for a greater amount of time than the trainer, who has other responsibilities within the district.

Implications for Practice

This dissertation's findings provide insight into the current state of training practices pertaining to paraprofessionals working in an autism program within an urban school district; these training practices have implications for the field of school psychology, particularly in terms of the roles and training of school psychologists. The

training of school psychologists includes preparation in areas such as data collection and analysis, progress monitoring, providing consultation, program planning and evaluation as well as adult learning and training, making school psychologists uniquely qualified to assist in addressing this type of need in the school setting, as demonstrated through the needs assessment and program development process involved in this dissertation (Fagan & Wise, 2007; NASP, 2010). School psychologists can utilize their expertise to assume leadership roles in the program planning and evaluation process in order to address needs that arise in the districts in which they work.

While school psychologists possess these valuable skills in working systemically, the school psychologist's role in a school system may be relegated to performing tasks traditionally associated with the role, such as assessment, intervention and consultation as opposed to less traditional and more systemic job functions involving research and staff development (Fagan & Wise, 2007). The roles and responsibilities of a school psychologist can be significantly influenced by job site characteristics such as the amount of students served, the amount of time spent driving from school to school and the availability of office space as well as external factors such as budgetary constraints (Fagan & Wise, 2007). Hiring school psychologists in non-traditional roles or finding ways to realistically allow school psychologists already employed by the districts to engage in a broader scope of practice that includes less traditional roles.

Conclusion

Training paraprofessionals who work with students with autism is a critical issue. Often these staff members have the most direct contact with the students but have the least amount of training or educational background to meet the specialized needs of

students with autism. The current dissertation focused on designing a program that addressed the training needs of paraprofessionals working in the Autism Program of an urban school district. Maher's (2000) program planning and evaluation framework was utilized to conduct a needs assessment to clarify the needs of the paraprofessionals and to delineate relevant context information specific to the school district in order to design a program that could realistically be implemented. Following implementation of the program in the district, the suggested plan for evaluation of the program will assist in determining the extent to which the program conveys benefit to the paraprofessionals in terms of their knowledge and skill base; the program evaluation process could also ensure that the program adapts to ongoing changes occurring within the district. Implications for practice can be derived from the process of needs assessment and program design in regard to the role of school psychologists. School psychologists are uniquely prepared to address systemic issues in school districts beyond what is typically required of them in a traditional role; however, it is important that administrators are aware of and value the knowledge base and skills of school psychologists. Barriers such as a lack of time and resources can prevent school psychologists from taking on broader roles and working systemically within school systems.

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Appendix A

Consent Form to Participate in a Research Study - Paraprofessionals

You are invited to participate in a needs assessment of the Autism Program. The purpose of this study is to assess the training needs of paraprofessionals working with students with autism in an urban public school setting and factors that may impact training in order to develop a program to address existing needs. This needs assessment is being conducted for the school district by Amy Watkins, school psychologist and graduate student at the Graduate School of Applied and Professional Psychology at Rutgers University. You were selected as a participant in this study because of your involvement in the Autism Program.

If you choose to participate, Ms. Watkins will ask you to complete a brief survey in order to gather information regarding training needs and factors that may impact program design. This survey should take about 15 minutes to complete. The survey will be administered following IRB approval and will continue until the end of September of 2013.

Your participation in this study is part of the needs assessment process. The interviews and surveys do not focus on collecting information on individual staff members, but rather, are intended to collect information related to the training needs of autism program as a whole. This will include questions about your highest level of education, whether you have attended other workshops and other similar items. The director and the Board of Education have approved the needs assessment and program development process. Any information that is obtained in connection with this study and that can be identified with you will remain anonymous. No one will be identified by name and the district itself will not be identified in the dissertation. This is a needs assessment pertaining to training staff in the autism program and is not an evaluation of personnel.

Your participation in this project is voluntary. There are no foreseeable risks to participating. The district is planning to offer training to paraprofessionals working with students with autism; those who choose to participate in surveys will provide information that will be utilized in the content and design of this training program, which is intended to enhance the skills and knowledge of the paraprofessionals working in the Autism Program. There are no alternative activities to participation in this project at this time.

If you have any questions or concerns about this needs assessment, please feel free to contact the principal investigator or the dissertation chair/faculty advisor.

Amy Watkins (Principal Investigator)
School Psychology Doctoral Student
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Rutgers, The State University of New Jersey
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If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:

Rutgers University Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza
New Brunswick, NJ 08901-8559
Tel: 848-932-0150
Email: humansubjects@osrp.rutgers.edu

You are making a decision about whether or not to participate in this needs assessment. Your signature denotes that you have read the information provided above and have decided to participate. You may withdraw at any point without penalty or loss of benefits should you discontinue participation after signing this form. Your decision to participate or not to participate will not impact your future relationship with the school district or Rutgers University. If you elect to participate, you are free to discontinue your participation at any point in the needs assessment without any consequence to you.

Please sign below if you agree to participate in this needs assessment. You will be offered a copy of this form to keep for your records.

Signature: _____ Date: _____

Investigator's signature: _____ Date: _____

Appendix B**Consentimiento Para Participar en el Estudio de Investigacion - Paraprofesionales**

Usted ha sido invitado a participar en un estudio de evaluación del Programa de Autismo. El propósito de este estudio es para evaluar la necesidad de entrenamiento de los Paraprofesionales que trabajan con estudiantes con Autismo en la escuela pública urbana y los factores que pueden impactar el entrenamiento para así desarrollar un programa que cubra estas necesidades existentes. Este estudio es una evaluación de las necesidades en el Distrito, por Amy Watkins, psicólogo de la escuela y el estudiante graduado de la Escuela de Posgrado de Psicología Aplicada y Professional en la Universidad de Rutgers. Usted ha sido seleccionado como participante en este estudio por su involucramiento en el Programa de Autismo.

Si usted acepta participar, la Srta. Watkins le pedirá que completar un cuestionario para recolectar información en relación a las necesidades de entrenamiento y los factores que pueden impactar el diseño del programa. El cuestionario tendrá 15 minutos para completarlo. Va a ser administrado seguido de la aprobación de IRB y continuara hasta el final de Septiembre del 2013.

Su participación en este estudio es parte del proceso de la evaluación de necesidades. Las entrevistas y cuestionarios no se enfocaran en recolectar información del personal individualmente, pero si intentan recolectar información relacionada a las necesidades de entrenamiento en el Programa de Autismo. El mismo incluirá preguntas sobre su nivel más alto de educación y si usted ha participado de entrenamientos así como preguntas similares. La Directora y la Junta de Educación han aprobado la necesidad de un estudio y del desarrollo del programa. Toda información obtenida en conexión con este estudio va a ser y que pueda ser identificada con usted permanecerá anónima. Ninguna persona va a ser identificada por su nombre y el distrito escolar tampoco va a ser identificado en la disertación. Esta es un estudio necesario relacionado al entrenamiento del personal en el Programa de Autismo y no es una evaluación del personal.

Su participación en este proyecto es voluntaria. No hay ningún riesgo en participar. El distrito esta planificando ofrecer entrenamiento a paraprofesionales que trabajan con estudiantes con Autismo. Aquellas personas que escojan participar del cuestionario van a proveer información que va a ser utilizada en el diseño y contenido de este programa de entrenamiento, el cual intenta mejorar las destrezas y el conocimiento de los paraprofesionales que trabajan con el Programa de Autismo. En este momento no hay actividades alternativas para la participación de este proyecto.

Si usted tiene alguna pregunta o preocupación sobre esta necesidad de estudio, por favor contacte a la investigadora principal o al director de disertación/Asesor de la facultad.

Amy Watkins (Investigadora Principal)
Estudiante Doctoral de Psicología Escolar
The Graduate School of Applied and Professional Psychology

Rutgers, The State University of New Jersey
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Iniciales del Sujeto: _____

Kenneth Schneider (Director de disertación/Asesor de la facultad)
The Graduate School of Applied and Professional Psychology
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Si usted tiene preguntas sobre sus derechos como sujeto de investigación, puede contactar el Administrador del IRB en la Universidad de Rutgers:

Rutgers University Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza
New Brunswick, NJ 08901-8559
Tel: 848-932-0150
Email: humansubjects@osrp.rutgers.edu

Usted esta tomando la decisión de participar o de no participar en este estudio de necesidades. Su firma representa que usted ha leído la información provista arriba y que ha decidido participar. Usted puede retirarse de participar en cualquier momento sin penalidad o perdida de beneficios después de haber firmado esta forma.

Por favor firme debajo si usted esta de acuerdo en participar de esta necesidad de evaluación. Usted va a obtener una copia de esta forma para que la guarde con sus documentos.

Firma: _____ Dia: _____

Firma del Investigador: _____ Dia: _____

Appendix C**Consent Form to Participate in a Research Study – Teachers**

You are invited to participate in a needs assessment of the Autism Program. The purpose of this study is to assess the training needs of paraprofessionals working with students with autism in an urban public school setting in order to develop a program to address existing needs. This needs assessment is being conducted for the school district by Amy Watkins, school psychologist and graduate student at the Graduate School of Applied and Professional Psychology at Rutgers University. You were selected as a participant in this study because of your involvement in the Autism Program.

If you choose to participate, Ms. Watkins will ask you to complete a brief survey in order to gather information regarding training needs and factors that may impact program design. This survey should take about 5 minutes to complete. The survey will be administered following IRB approval and will continue until the end of September of 2013.

Your participation in this study is part of the needs assessment process. The surveys do not focus on collecting information on individual staff members, but rather, are intended to collect information related to the training needs of autism program as a whole. The director and the Board of Education have approved the needs assessment and program development process. Any information that is obtained in connection with this study and that can be identified with you will remain anonymous. No one will be identified by name and the district itself will not be identified in the dissertation. This is a needs assessment pertaining to training staff in the autism program and is not an evaluation of personnel.

Your participation in this project is voluntary. There are no foreseeable risks to participating. The district is planning to offer training to paraprofessionals working with students with autism; those who choose to participate in surveys will provide information that will be utilized in the content and design of this training program, which is intended to enhance the skills and knowledge of the paraprofessionals working in the Autism Program. There are no alternative activities to participation in this project at this time.

If you have any questions or concerns about this needs assessment, please feel free to contact the principal investigator or the dissertation chair/faculty advisor.

Amy Watkins (Principal Investigator)
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If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:

Rutgers University Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza
New Brunswick, NJ 08901-8559
Tel: 848-932-0150
Email: humansubjects@osrp.rutgers.edu

You are making a decision about whether or not to participate in this needs assessment. Your signature denotes that you have read the information provided above and have decided to participate. You may withdraw at any point without penalty or loss of benefits should you discontinue participation after signing this form. Your decision to participate or not to participate will not impact your future relationship with the school district or Rutgers University. If you elect to participate, you are free to discontinue your participation at any point in the needs assessment without any consequence to you.

Please sign below if you agree to participate in this needs assessment. You will be offered a copy of this form to keep for your records.

Signature: _____ Date: _____

Investigator's signature: _____ Date: _____

Appendix D**Consent Form to Participate in a Research Study - Administrator**

You are invited to participate in a needs assessment of the Autism Program. The purpose of this study is to assess the training needs of paraprofessionals working with students with autism in an urban public school setting and factors that may impact training in order to develop a program to address existing needs. This needs assessment is being conducted for the school district by Amy Watkins, school psychologist and graduate student at the Graduate School of Applied and Professional Psychology at Rutgers University. You were selected as a participant in this study because of your involvement in the Autism Program.

If you choose to participate, Ms. Watkins will ask you to complete an interview in order to gather information regarding training needs and factors that may impact program design and implementation. This interview will take approximately an hour. Interviews will be administered following IRB approval and will continue until the end of September of 2013.

Your participation in this study is part of the needs assessment process. The interviews do not focus on collecting information on individual staff members, but rather, are intended to collect information related to the training needs of autism program. The director and the Board of Education have approved the needs assessment and program development process. Any information that is obtained in connection with this study and that can be identified with you will remain anonymous. No one will be identified by name and the district itself will not be identified in the dissertation. This is a needs assessment pertaining to training staff in the autism program and is not an evaluation of personnel.

Your participation in the study is voluntary. There are no foreseeable risks to participating in this study. The district is planning to offer training to paraprofessionals working with students with autism; those who choose to participate in surveys and interviews will provide information that will be utilized in the content and design of this training program, which is intended to enhance the skills and knowledge of the paraprofessionals. There are no alternative activities to participation in this research at this time.

If you have any questions or concerns about this study, please feel free to contact the principal investigator or the dissertation chair/faculty advisor.

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If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:

Rutgers University Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza
New Brunswick, NJ 08901-8559
Tel: 848-932-0150
Email: humansubjects@osrp.rutgers.edu

You are making a decision about whether or not to participate in this needs assessment. Your signature denotes that you have read the information provided above and have decided to participate. You may withdraw at any point without penalty or loss of benefits should you discontinue participation after signing this form. Your decision to participate or not to participate will not impact your future relationship with the school district or Rutgers University. If you elect to participate, you are free to discontinue your participation at any point in the needs assessment without any consequence to you.

Please sign below if you agree to participate in this needs assessment. You will be offered a copy of this form to keep for your records.

Signature: _____ Date: _____

Investigator's signature: _____ Date: _____

Appendix E**Paraprofessional Survey**

1. Gender ☐ Male ☐ Female
 2. Did you have experience working with students with autism before starting in your current position? ☐ Yes ☐ No
 3. Amount of time working with students with autism ☐ Years ☐ Months
 4. Highest level of education attained:
 - ☐ High school/GED
 - ☐ Some College
 - ☐ 2 year College Degree (Associates)
 - ☐ 4 year College Degree (Bachelors)
 - ☐ Masters Degree
 - ☐ Other, Please Specify: _____

 5. First language: _____ Preferred Language: _____
 6. Have you ever taken a college level course that included information about students with autism? ☐ Yes ☐ No
 7. How many workshops have you attended regarding working with students with autism? (Circle one)

None	1-5	6-9	10-14	15+
------	-----	-----	-------	-----
 8. Have you worked directly with the district behaviorist or VBN consultants to learn about working with students with autism? ☐ Yes ☐ No
- If yes, how many times have you worked with the district behaviorist or VBN consultants?
- | | | | | |
|------|-----|-----|-------|-----|
| None | 1-5 | 6-9 | 10-14 | 15+ |
|------|-----|-----|-------|-----|

9. Using the following scale, please rate your level of confidence in your ability/knowledge in each area:

1	2	3	4	5
Not confident at all				Very confident

- _____ Preference Assessments
- _____ FBA/BIPs
- _____ Communicating with Staff/Others
- _____ Requesting/Mands
- _____ Behavior Assessment and Treatment (basic level)
- _____ Incidental Teaching
- _____ ABC data
- _____ Autism Overview
- _____ Data Recording
- _____ Reinforcement
- _____ Behavior Procedures (escape extinction, pairing, etc.)
- _____ Discrete Trial/Intensive Teaching/Natural Environment Teaching
- _____ Activities of Daily Living
- _____ Facilitating Social Skills
- _____ Prompting/Prompt Hierarchies

10. Use the numbers 1-5 to identify which trainings are most needed in your classroom with number 1 being the MOST NEEDED and number 5 being LEAST NEEDED

IF you don't know what some of the topics are mark an "X" on the line instead of a number

- _____ Preference Assessments
- _____ FBA/BIPs
- _____ Communicating with Staff/Others
- _____ Requesting/Mands
- _____ Behavior Assessment and Treatment (basic level)
- _____ Incidental Teaching
- _____ ABC data
- _____ Autism Overview
- _____ Data Recording
- _____ Reinforcement
- _____ Behavior Procedures (escape extinction, pairing, etc.)
- _____ Discrete Trial/Intensive Teaching/Natural Environment Teaching
- _____ Activities of Daily Living
- _____ Facilitating Social Skills
- _____ Prompting/Prompt Hierarchies

11. Use numbers 1-5 to indicate which topics you are most interested in learning more about, with 1 indicating the topic of most interest to you.

- _____ Preference Assessments
- _____ FBA/BIPs
- _____ Communicating with Staff/Others
- _____ Requesting/Mands
- _____ Behavior Assessment and Treatment (basic level)
- _____ Incidental Teaching
- _____ ABC data
- _____ Autism Overview
- _____ Data Recording
- _____ Reinforcement
- _____ Behavior Procedures (escape extinction, pairing, etc.)
- _____ Discrete Trial/Intensive Teaching/Natural Environment Teaching
- _____ Activities of Daily Living
- _____ Facilitating Social Skills
- _____ Prompting/Prompt Hierarchies

_____ Other, Please specify:

Comments:

Appendix F**ENCUESTA RESPECTO A UN(A) AUXILIAR DE UN PROFESIONAL**

1. Género ____ Masculino ____ Femenino
 2. ¿Ha trabajado con niños autistas antes de la actual posición? ____ Sí ____ No
 3. ¿Por cuánto tiempo ha trabajado con niños autistas?
____ años ____ meses
 4. Niveles de Educación:
 ____ Escuela secundaria
 ____ Universidad
 ____ 2 años de Educación Superior
 ____ 4 años de Educación Superior (Licenciatura)
 ____ Máster Universitario
 ____ Otros, por favor
 especifique _____
 5. Lengua materna (nativa): _____ Idioma preferido: _____
 6. alguna vez, ¿ha asistido a cursos de información a nivel universitario acerca de estudiantes autistas?
____ Sí ____ No
 7. ¿Ha asistido a talleres de capacitación para trabajar con niños con autistas?
Ninguno ____ 1-5 ____ 6-9 ____ 10-14 ____ 15 o más ____
 8. ¿Ha trabajado directamente con algún especialista en comportamiento o consultores para aprender a trabajar con estudiantes con autismo? ____ Sí ____ No
- En caso afirmativo, ¿cuántas veces ha trabajado con el especialista en comportamiento o consultores?
Ninguno ____ 1-5 ____ 6-9 ____ 10-14 ____ 15 o más ____

9. Usando la siguiente escala, por favor, indique el nivel de confianza y seguridad en su habilidad y conocimiento en cada área:

1	2	3	4	5
No segura		Muy segura		
<input type="checkbox"/> Evaluaciones de las preferencias				
<input type="checkbox"/> Evaluación funcional de la conducta/planes de intervención de conducta				
<input type="checkbox"/> Comunicación con los profesionales/otros				
<input type="checkbox"/> Requerimientos/demandas				
<input type="checkbox"/> Evaluación y tratamiento del comportamiento (nivel basico)				
<input type="checkbox"/> Enseñanza incidental				
<input type="checkbox"/> Datos informativos ABC				
<input type="checkbox"/> Conocimiento General del Autismo				
<input type="checkbox"/> Coleccion de Datos				
<input type="checkbox"/> Refuerzo				
<input type="checkbox"/> Procedimientos de comportamiento (extinción del escape / apareamiento, etcétera)				
<input type="checkbox"/> Prueba discreta / enseñanza intensive / enseñanza en su ambiente natural				
<input type="checkbox"/> Actividades del diario vivir				
<input type="checkbox"/> Facilitar las destrezas sociales				
<input type="checkbox"/> Indicaciones/niveles de indicaciones				

10. Use los números del 1-5 para identificar qué instrucción de capacitación es la más necesaria en su salón de clase, siendo el número 1 la más necesaria y el número 5 la menos necesaria. Si Ud. no sabe algunos de los temas ponga una X:

<input type="checkbox"/>	Evaluaciones de las preferencias
<input type="checkbox"/>	Evaluación funcional de la conducta/planes de intervención de conducta
<input type="checkbox"/>	Comunicación con los profesionales/otros
<input type="checkbox"/>	Requerimientos/demandas
<input type="checkbox"/>	Evaluación y tratamiento del comportamiento (nivel basico)
<input type="checkbox"/>	Enseñanza incidental
<input type="checkbox"/>	Datos informativos ABC
<input type="checkbox"/>	Conocimiento General del Autismo
<input type="checkbox"/>	Coleccion de Datos
<input type="checkbox"/>	Refuerzo
<input type="checkbox"/>	Procedimientos de comportamiento (extinción del escape / apareamiento, etcétera)
<input type="checkbox"/>	Prueba discreta / enseñanza intensive / enseñanza en su ambiente natural
<input type="checkbox"/>	Actividades del diario vivir
<input type="checkbox"/>	Facilitar las destrezas sociales
<input type="checkbox"/>	Indicaciones/niveles de indicaciones

11. Use los números del 1-5 para indicar qué temas son los que más le interesaron aprender. Use el 1 para indicar el tema más interesante para Ud. :

- _____ Evaluaciones de las preferencias
- _____ Evaluación funcional de la conducta/planes de intervención de conducta
- _____ Comunicación con los profesionales/otros
- _____ Requerimientos/demandas
- _____ Evaluación y tratamiento del comportamiento (nivel basico)
- _____ Enseñanza incidental
- _____ Datos informativos ABC
- _____ Conocimiento General del Autismo
- _____ Coleccion de Datos
- _____ Refuerzo
- _____ Procedimientos de comportamiento (extinción del escape / apareamiento, etcétera)
- _____ Prueba discreta / enseñanza intensive / enseñanza en su ambiente natural
- _____ Actividades del diario vivir
- _____ Facilitar las destrezas sociales
- _____ Indicaciones/niveles de indicaciones

Comentarios:

Appendix G

Teacher Survey

1. Below are listed a variety of technical competencies which may be useful for paraprofessionals who work with students with autism that may have significant deficits in adaptive skills, language, behaviors and socialization. Use the numbers 1 to 5 to identify which trainings are most needed for the paraprofessionals in your classroom with number 1 being the MOST NEEDED and number 5 being LEAST NEEDED.

_____ Preference Assessments

_____ FBA/BIPs

_____ Communicating with Staff/Others

Requesting/Manding

_____ Behavior Assessment and Treatment (basic level)

_____ Incidental Teaching

_____ ABC data

_____ Autism Overview

_____ Data Recording

_____ Reinforcement

_____ Behavior Procedures (escape extinction, pairing, etc.)

_____ Discrete Trial/Intensive Teaching

_____ Activities of Daily Living

_____ Facilitating Social Skills

_____ Prompting/Prompt Hierarchies

_____ Other, Please specify:

Please feel free to comment further on this topic in the space below:

Appendix H

Administrator Interview Questions

1. What human resources can be allotted/dedicated to program design, implementation and evaluation: a. Managerial/supervisory? B. Consultants? C. Staff? D. Other?
2. What technological resources are likely to be available? A. Hardware and software? B. Methods? C. Equipment D. Validated interventions? E. Other?
3. What kinds of informational resources are available to support program design, implementation and evaluation? A. Curriculum guides? B. Job aids C. Checklists. D. Databases? E. Other?
4. What physical resources can be allotted for a program? A. Office space? B. Classroom? C. Other?
5. What types and levels of financial resources are available for a program? A. federal funds? B. State or local funds? C. Private funds? D. Other
6. How much temporal resources can be obtained for program design, implementation and evaluation? A. Days? B. Weeks? C. Other?
7. What things have mattered traditionally to the individuals and groups that have comprised the organization? A. Professional growth and development? B. Employment security? C. Quality service? D. Other things?
8. What have been the traditional responses of the organization toward addressing the training needs of the target population? A. Very responsive in a programmatic way? B. Unaware of their needs? C. Indifferent to their needs? D. Other?
9. To what extent are people (client, stakeholders, others) clear about what task is to be accomplished? A. Clear? B. Unaware? C. Not clear? D. Indifferent?
10. What do people think is occurring in the organization in regard to the target population and its needs? A. Considerable service? B. Unaware? C. Too much service? D. Insufficient service?
11. What does the idea of helping the target population mean to people? A. Professional response? B. Long Overdue response? C. Being directed by outside forces? D. Other?

12. How likely is it that the organization's administrators and other leadership personnel will remain in their current positions?
13. To what extent will the organization's mission and strategic plan remain in force during the next two to three years?
14. How stable has the organization been in terms of its administration, leadership and personnel?
15. Are key administrators and other relevant stakeholders willing to allow time to be allocated to program design, implementation and evaluation?
16. To what extent are sources of funding available to support a program?
17. Do any current events (e.g. elections, new leadership) suggest that the time is appropriate or inappropriate to proceed with program design and implementation?
18. What individuals and groups can be considered as active supporters of a programmatic approach with the target population? A. Administrators? B. Staff? C. Outside advocates D. Peers of the target population E. Others?
19. What individuals and groups may not support a programmatic initiative with the target population?
20. What individuals or groups are likely to resist a programmatic attempt to address the needs of the target population? A. administrators? B. Staff? C. Outside advocates? D. Peers of the target population? E. Other?
21. Over what aspects of a program or other matter might resistance occur? A. Policies B. Program goals? C. Personnel? D. Budget? E. Other?
22. What do individuals and groups perceive as benefits of the program: A. Job enrichment? B. Professional achievement? C. Recognition and stature D. Target population growth and development? E. Other?
23. What do individuals and groups perceive as disincentives/drawbacks of the program? A. Paperwork and related administrative duties? B. Waste of time, preventing them from engaging in other activities? C. Program will not be implemented as designed? D. Other?

Appendix I

Training 1 Outline: Introduction to Training/ Overview of Autism and the Autism Program

Activity 1: Opening Exercise

Introduction to the training program and current training

Introductions:

- What is your name?
- Describe your experience in working with students with autism, if any.
- What are your goals and expectations for training?
- Please share some reactions to your job this far.

Introduction to the Autism Program

- Personnel associated with the autism program include: Supervisors, teachers, coaches, case managers and related service providers such as speech therapists, occupational therapists or physical therapists.
- Paraprofessionals work as a member of a team and as directed by their classroom teacher. Paraprofessionals may work as a classroom or personal assistant; however, all staff members are expected to work with different students to ensure that the student generalized what he or she learns to different people.
- Responsibilities may include but are not limited to implementing behavioral strategies or a behavior plan, implementing teaching strategies in individual or small groups, recording data, assisting students with adaptive skills such as toileting, ensuring that students remain safe, providing appropriate reinforcement and facilitating communication or social interaction.

Opportunity for questions

Activity 2: Introduction to Autism

Introduction to autism video

Presentation of autism varies but key features include:

- Deficits in social interaction
 - Deficits in social-emotional reciprocity
 - Deficits in nonverbal communicative behaviors used for interacting socially
 - Deficits in developing, maintaining and understanding relationship
 - Examples include difficulties with social approach and back-and-forth conversation, failing to initiate or respond to social interactions, decreased sharing of emotions or affect, poor eye contact, unusual body language, difficulties in understanding body language, an inability to understand and adjust behavior to suit social contexts, difficulties in making friends or an absence of interest in others.
- Impairments in communication
 - May be nonverbal. Alternately, a student with autism may have deficits that involve language reception and production of speech sounds or deficits in semantics, comprehending the meaning of language, and pragmatics
 - Facial expressions and gestures might not match the intent of a person.

- When those with autism are unable to communicate what they need or want through verbal or nonverbal means, screaming or physical attempts to obtain objects, escape or attention may result.
- Repetitive and stereotyped patterns of behavior and interests
 - May present as stereotyped or repetitive motor movements, use of objects or speech
 - Insistence on sameness, inflexible adherence to routines, or ritualized patterns of behavior
 - Highly restricted, fixated interests
 - Over or under-reacting to sensory input or unusual fixation on sensory stimuli
 - This may present as lining up toys, echolalia, becoming unusually upset at small changes or transitions, extremely limited or obsessive interests, distress when faced with certain sounds or textures and a failure to react to pain or temperature.

Autism can co-occur with:

- Attention Deficit Hyperactivity Disorder
- Specific Learning Disabilities
- Intellectual Disabilities
- Developmental Coordination Disorder
- Anxiety Disorders or Depressive Disorders

- Other conditions: epilepsy, sleep problems, constipation, Fragile X, cerebral palsy, phenylketonuria, Turner's syndrome, tuberous sclerosis, Tourette's syndrome
- About 70% of individuals have one comorbid disorder and about 40% have two or more disorders in addition to their autism spectrum disorder diagnosis

Autism can impact many areas such as learning, adaptive skills, sensory sensitivity, the ability to communicate, socialization, adherence to routines and difficulty coping with change.

Activity 3: Relating to Individuals with Autism and Concluding Exercise

Sensory overload video

Whole group discussion

Questions followed by assessment

**Training 1 Assessment: Introduction to Training/
Overview of Autism and the Autism Program**

Name: _____

Fill in the blank:

Autism is a developmental disability characterized by:

- Impairments in _____ interaction
 - Individuals may demonstrate poor _____ contact.
- _____ impairments in the verbal and/or nonverbal domains.
 - May have difficulty with back-and-forth _____.
- Repetitive and stereotyped patterns of _____ and interests.
 - May present with an insistence on _____.
 - May have highly _____ interests.

The most effective treatment for autism is _____
_____.

Approximately 1 in _____ children in the United States are diagnosed with an Autism Spectrum Disorder.

About _____% of individuals with autism have one comorbid disorder and about _____% have two or more disorders in addition to autism.

Name two disorders that are often comorbid with autism:

_____ and _____

True or False (circle the correct answer):

The abilities of students with autism range from gifted to severely challenged. True False

The presentation of symptoms in students with autism is exactly the same. True False

Comments/questions about today's training:

Appendix J

Training 2 Outline: Basic Behavioral Concepts and Assessment

Activity 1: Opening Exercise

Introduction to the current training

Discussion of behavioral management situations encountered on the job

Opportunity for questions

Activity 2: Introduction to Behavioral Principles

Setting Events, Antecedents, Behaviors and Consequences

The ABCs – or (s)ABC of behavior

- Antecedents are usually simple, immediate and discrete events that occur before and trigger problem behaviors. Examples include:
 - Physiological – pain, illness
 - Cognitive/emotional – mental health condition, emotional state
 - Physical environment – seating arrangement, noise, temperature
 - Social/activity events – academic demands, method of instruction, delivery of feedback, change in routine or transitions, teasing, type of task
 - Time of day
 - Prompting methods: ambiguous requests, distracting stimuli, too much information, reprompting too quickly, too many steps, unfamiliar request

- Task related problems: Too complex, too much information, too long, requires independent initiation, too many directions, directions unclear, too much material to keep organized.
- Instructional conditions: oral directions, lecture, pacing too fast or too slow, disorganized, boring or confusing, abstract discussion
- Transition Problems: preference transition, teacher/staff transitions, procedures/routine transitions, activity or physical transitions
- Behaviors are actions and responses to stimulation.
- Consequences are what the individual gains access to or events that are avoided following a behavior. Consequences maintain and reinforce a behavior.
 - Positive reinforcement occurs when a behavior results in the addition of a stimulus to the environment, which increases the occurrence of a behavior.
 - Negative reinforcement occurs when a behavior results in the removal of the stimulus and results in the increase of a behavior.
 - Automatic reinforcement persists across many contexts independent of socially mediated consequences
- Setting events are conditions or events that make an event more probable, circumstances that alter the value of reinforcers and make a behavior more likely to occur. They do not evoke the problem behavior on their own.
 - Examples include: medications, medical/physical problems, sleep cycles, eating routines/diet, changes in daily schedule, number of

people in the environment, staff patterns, relationship history with people or environment, change in routine, emotional stressors, etc.

- Setting events impact antecedent events such that they predispose us to act in atypical ways and reduce one's ability to tolerate nonpreferred conditions.
- Operationally defining behavior: Explicitly defining behavior so that impartial observers can identify it.
- Functions of behavior are critical to determining appropriate interventions. The same behavior can have different causes and should be handled differently. The functions of behavior include:
 - Escape/Avoid: to get out of or away from something such as a difficult task, a long task, a social situation or automatic reinforcement
 - Tangible: to get or obtain an object or activity
 - Attention: to get or obtain attention from peer or adult
 - Sensory: to get or obtain automatic positive reinforcement
- General responses that address the function of behavior:
 - If the behavior's function is to obtain something tangible: do not provide the item until appropriate behavior is demonstrated. Other strategies include teaching the student to ask for the item in a more appropriate manner.
 - If a behavior's function is avoidance or escape: continue to present the task, provide rewards for attempting the task or teach the student to request for a break or change of activity.

- If the behavior is sensory, the student should be redirected to something else or taught an alternative activity that provides similar feedback.
- If the function of the behavior is to obtain attention, do not provide attention when the student engages in the behavior and teach the student to request attention in appropriate ways.
- It is always better to positively reinforce appropriate behavior. Teaching the student the appropriate skill to replace a maladaptive skill is also helpful, particularly if it serves the same function.
- Addressing a student's behavior may include several components, including teaching new skills, altering antecedents, consequences or the environment, using effective reinforcement programs, teaching self-management and coping skills as well as addressing any sensory issues that might exist.
- When addressing behavior, there may be an extinction burst, i.e. the behavior gets worse before it gets better. It is important to remain consistent in order for interventions to work and it will take time.

Problem behavior video

Activity 3: Application of Behavioral Principles and Concluding Exercise

Subgroup discussion and activity

Whole group discussion

Questions followed by assessment

Training 2 Activity 3: Basic Behavioral Concepts and Assessment

Identify the antecedents, behaviors, consequences, setting events (if applicable) and the function of behavior for each situation. Discuss how the behaviors might be addressed:

Johnny is asked to write his name every morning following circle time. He responds by banging his head forcefully into the table. The staff responds by allowing him to engage in a different activity.

- Antecedent:
- Behavior:
- Consequence:
- Setting event:
- Possible function:
- Recommended course of action:

Heather is a 3rd grade student who frequently interrupts the teacher. When the students are working independently and the teacher is going around the room working with individuals, Heather makes animal noises to get the teacher's attention. Her teacher typically comes over and redirects her. Heather rarely completes work independently.

- Antecedent:
- Behavior:
- Consequence:
- Setting event:
- Possible function:
- Recommended course of action:

Sebastian was on a toileting schedule. When the timer went off, he was prompted to go to the bathroom. He started to walk towards the bathroom but ran to the computer room that he passed on the way, sat down and began to play a game. When his assistant

attempted to redirect him he kicked her in the shins repeatedly. The staff member walked away, allowing Sebastian to continue on the computer and he eventually had an accident.

- Antecedent:
- Behavior:
- Consequence:
- Setting event:
- Possible function:
- Recommended course of action:

Julius would engage in severe episodes of aggression on almost a daily basis. He would charge at the nearest adult, pull hair, slap, kick, scratch and bite. Typically, the staff would have to attempt to ignore the behavior and it would escalate until one of the staff members would have to put him in a restraint hold. He would then calm down and return to whichever activity he had been working on previously.

- Antecedent:
- Behavior:
- Consequence:
- Setting event:
- Possible function:
- Recommended course of action:

Develop clear and objective operational definitions for each of the following types of behaviors:

- Disruptive Behavior

- Aggressive Behavior
- Off-task Behavior
- Sharing
- Cooperative Play

Training 2 Assessment: Basic Behavioral Concepts and Assessment

Name: _____

Fill in the blank:

_____ are actions and responses to stimulation.

_____ are usually simple and immediate events that occur before/trigger problem behaviors.

_____ are conditions or events that make a behavior more likely to occur but do not evoke a behavior on their own.

_____ are what the individual gains access to or avoids following a problem behavior.

- _____ reinforcement occurs when a stimulus is added to the environment that makes a behavior more likely to occur
- _____ reinforcement occurs when a stimulus is removed from the environment that makes a behavior more likely to occur.
- _____ reinforcement persist across contexts and is independent of socially mediated consequences.

Match the function of behavior to the scenarios below (Attention, Escape, Sensory or Tangible)

- Michael leaves his seat whenever he is asked to complete writing tasks, which are difficult for him. _____
- Michael leaves his seat and runs over to the teacher's desk when she takes his favorite action figure away from him. _____
- Michael leaves his seat when the student next to him is making a loud noise.

- Michael leaves his seat when the teacher is busy attending to other students.

True or False (circle the correct answer):

Addressing a behavior problem may involve several components. True False

If a student is crying or whining to get a cookie, you should give it to him or her to stop the behavior. True False

If a student is trying to avoid a task, you should continue to present the task. True False

If the function of behavior is sensory, you should redirect the student to something else or teach an alternate activity that provides similar feedback. True False

If a student is trying to gain your attention by engaging in inappropriate behavior you should provide them with attention to reduce the behavior. True False

Comments/questions about today's training:

Appendix K

Training 3 Outline: Behavioral Procedures

Activity 1: Opening Exercise

Introduction to the Current Training

Discussion of behavioral situations since previous training

Opportunity for questions

Activity 2: Introduction to Behavioral Procedures

Overview and modeling of behavioral procedures.

- Count and Mand
 - Used when students engage in inappropriate behavior to get something that they are allowed to have.
 - Do not provide direct attention to the student; the only thing that should be said or signed is “quiet”.
 - When the student calms down, count on your fingers until the behavior has stopped for the entire count.
 - The student can be prompted to request or mand for what they want while not engaging in the behavior. If this is done appropriately, the item should be delivered.
 - If the behavior resumes mid-count, start the count over.
- Escape Extinction
 - Used when a student engages in inappropriate behavior in response to a demand.
 - Do not give the student direct attention.
 - The original demand should be repeated until the student complies on his or her own.

- A varied number of additional demands can be added to build behavioral momentum such as “touch your nose, clap your hands, and show ready.”
The student should continue with the current activity.
 - Behavioral momentum: Making easier requests that a student is able to do and likely to comply with; when the student complies with these, he or she is more likely to comply with subsequent demands.
- Interruption/Transition
 - Used to eliminate behaviors that result from demand situation; the student is taught to transition or to allow interruption of preferred activities.
 - Indicated when students engage in behaviors to escape from having to transition from a preferred or more reinforcing activity to a less reinforcing activity.
 - Ask the student to comply with a simple demand to engage in a less preferred activity from a preferred activity.
 - The student can be offered a promised reinforcer; when the demand for transition is presented the student is shown a reinforcer that will be delivered after a transition without engaging in problem behavior.
 - If the student complies, he or she should be praised, the promised reinforcer should be delivered if applicable and the student should be allowed to return to the preferred activity.

- Additional reinforcement may be needed to maintain the student in the less preferred activity but as the student becomes more successful, the promised reinforcer and other reinforcements should be faded over time.
- If the student engages in the problem behavior, follow the escape extinction protocol; the promised reinforcer is removed and is no longer available if problem behavior occurs.
- The number and effort of non-preferred demands should be increased as the student achieves success.
 - Fading: systemically reducing the level of prompting or reinforcement needed for students to successfully complete a task
- Accepting No
 - Used to eliminate problem behaviors by teaching the student to accept no.
 - When a student requests an item or activity, say no and offer an equally reinforcing alternative
 - Alternate reinforcers from different motivational categories.
 - If the student accepts no without engaging in problem behaviors, he or she should receive praise and the alternative reinforcer.
 - Initially the reinforcer should be equally preferred but eventually the preference level should be faded until the student is expected to accept no without an alternative offered.
 - If the problem behaviors occur, do not deliver the requested or alternative reinforcer and use the escape extinction procedure.

- If the student continues to approach while being ignored, implement a walk and peel.
- If the problem behaviors continue or escalate in severity, direct the student to a nonpreferred activity and prompt to complete while continuing to provide minimal attention.
- Engage the student in another activity when calm.
 - Walk and peel: Walk away from the student while peeling the student off of you.
- Wait procedure
 - Used when a student requests appropriately but engages in inappropriate behavior while waiting for the item to be delivered because problem behavior had previously allowed the student to access reinforcement sooner.
 - The problem behavior is no longer reinforced and the student is taught to wait to access items, activities or attention sooner.
 - Tell the student: “You have to wait”.
 - Begin counting out loud and show the passage of time by using your fingers; the count may be different based on the student’s abilities.
 - If the student does not engage in the problem behavior during the entire counting interval, deliver reinforcement.
 - If the student engages in a problem behavior at any point during the interval, restart the count. Continue until the entire count is completed

without the student engaging in the problem behavior and afterwards reinforce the student for waiting appropriately.

- If the count is repeated for many trials and the student continues to engage in problem behavior, you can walk away and the student loses the opportunity for reinforcement.
- If the student moves away, make sure he or she remains safe but do not follow; just end the count and if the student approaches you can start the count over.
- Gradually increase the waiting interval, as the student is successful. Once the student is consistently successful with longer intervals, fade the count and say wait while counting for the required time interval silently.
- For any of the procedures, any self-injurious behavior, aggressive behavior or behaviors that result in the destruction of property should be blocked.

Activity 3: Application of Behavioral Principles and Concluding Exercise

Identify correct procedure activity

Practicing procedures with a partner

Whole group discussion

Opportunity for questions followed by assessment

Training 3 Activity 3: Behavioral Procedures

Identify the correct behavioral procedure that should be used in each situation. Practice each technique with your partner.

What should you do when Samantha asks for a ball appropriately and is allowed to have it, but cries while you are bringing it to her? What should you do when the child continues to engage in problem behaviors after implementing the procedure? What should you do if he or she does not engage in problem behaviors in response to the procedure?

Noah is throwing his puzzle pieces on the floor because he does not want to complete a puzzle that you asked him to put together. What should you do?

What should you do when you want to teach a child to accept that he or she cannot have a preferred item or activity? What should you do when the child continues to engage in problem behaviors after implementing the procedure? What should you do if he or she does not engage in problem behaviors in response to the procedure?

Edward loves to color; it is his favorite activity. Every time Edward is asked to transition from coloring to music, he has a tantrum. What should you do?

Vanessa is screaming and hitting the table in order to obtain a cookie that she is allowed to have. What should you do?

Training 3 Assessment: Behavioral Procedures

Name: _____

Fill in the blank:

The _____ procedure is used when a student requests an activity or item appropriately but engages in inappropriate behavior when there is a delay between the request and the item/activity being received/starting. The problem behavior most likely had enabled to access the item or activity sooner previously.

The _____ procedure is used when a student engages in inappropriate behavior in response to a demand.

The _____ procedure is used when students engage in inappropriate behavior to get something that they are allowed to have.

The _____/_____ is used to eliminate behaviors that result from a demand situation that entails interrupting or transitioning from preferred activities.

The _____ procedure eliminates problem behaviors by teaching the student to adapt when they are told that they cannot have a requested item or activity.

True or False (circle the correct answer):

Any self-injurious behavior, aggressive behavior or destruction of property that occurs in the course of implementing these procedures should be blocked. True False

Comments/questions about today's training:

Appendix L

Training 4 Outline: Teaching Procedures

Activity 1: Opening Exercise

Introduction to the current training

Opportunity for questions

Introduction to general research based teaching procedures

- The classroom teacher will consult with the paraprofessionals when working with students so that the paraprofessionals will be aware of the correct reinforcers, activities and teaching procedures to utilize with a given student.
- General research based teaching procedures include:
 - Pairing the teaching environment and staff with reinforcers
 - Fading in effort and difficulty of tasks by teaching the most efficient response first
 - Fading in the number of demands, or gradually introducing more demands
 - Reducing student errors by teaching methods that ensure high levels of correct responses and reinforcement
 - Interspersing easy and difficult demands
 - Mixing and varying instructional demands
 - Pacing instruction properly
 - Teaching to fluency.
- Discrete Trial Training (DTT) is an effective way to teach new skills by breaking them down into simple responses. The steps are as follows:

- Get the student's attention. Make sure the student is looking at you. You can hold a preferred item up to your prompt the student to look at you, stop what you are doing and wait for a response or call his or her name.
- Give a simple direction or ask a question.
- Prompt as necessary
- Reinforce the student's response immediately after a student's response
- Fade the prompts over time, providing less assistance
- Reinforce independent responses with bigger and better rewards
- Introduce distractor trials when the student responds consistently without help
- Video
- Prompting is anything you do that helps a student to respond to instruction. The steps for prompting are as follows:
 - Choose a prompt based on the particular student's skill set; the correct prompt will be effective every time.
 - When using prompts, start with the most help necessary to respond and decrease assistance over several trials as the student becomes more independent. Better reinforcers should be provided for responses that require less prompting.
 - Correct errors when they occur. If a student does not respond after prompt fading go back to the previous prompt and fade more slowly.
 - Prompt types include:
 - Positional prompt: modifying the placement of teaching materials

- Verbal Prompt: telling the student how to do a task or providing a verbal model of the response
 - Gestural prompt: provide a signal
 - Modeling: demonstrate or model the response
 - Physical prompt: manually guiding the student
 - Visual prompt: using text or pictures
- Video
- Incidental Teaching is a way to teach by capturing the student's interest. The steps are as follows:
 - Set up the environment to encourage the student's interest by:
 - Starting a preferred activity then stopping it
 - Giving the student an activity with part of it missing
 - Placing preferred items out of reach
 - Placing items in a container that the student needs you to open
 - Consuming a preferred snack in front of the student
 - Modifying something in the environment like turning down a song.
 - Watch for the student to show interest in the activity. He or she may reach, point, mention, ask or look.
 - Ask for a response to the item, prompting if necessary. You can have the student:
 - Ask for the name of the item
 - Ask how many there are
 - Ask for it again

- Ask a question
 - Reward the student with the item or activity for a correct response
 - Fade prompts as student responds independently
 - Prompt for more complex vocalizations
 - Video

Activity 2: Application of Teaching Procedures and Concluding Exercise

Practicing procedures with a partner

Whole group discussion

Opportunity for questions followed by assessment

Training 4 Assessment: Teaching Procedures

Name: _____

What is pairing and why should you use this technique?

What is discrete trial training?

Fill in the blanks to reflect the procedures used in discrete trial training:

- Get the student's _____.
- Give a simple _____ or ask a _____.
- Provide assistance or _____ to help the student respond correctly.
- Reinforce a correct response _____.
- Gradually provide _____ assistance.
- Use _____ rewards for independent responses.
- Introduce _____ trials to determine whether the student is attending.

What is prompting?

Fill in the blanks to reflect the procedures used in prompting:

- Choose a prompt based on the particular student's skill set; the correct prompt will be _____ every time.
- When using prompts, start with the _____ help necessary to respond and _____ assistance over several trials as the student becomes more independent.
- Correct errors when they occur. If a student does not respond after prompt fading go back to the previous prompt and fade more _____.

What is incidental teaching?

Fill in the blanks to reflect the procedures used in incidental teaching:

- First set up the environment to encourage the student's interest by:
 - _____ a preferred activity then _____ it
 - Giving the student an activity with part of it _____
 - Placing _____ items out of reach
 - _____ something in the environment like turning down the volume of a song.
- _____ for the student to show interest in the activity. He or she may reach, point, mention, ask or look.
 - Ask for a response to the item, prompting if necessary.
 - _____ the student with the item or activity for a correct response
 - _____ prompts as student responds independently

Comments/questions about today's training:

Appendix M

Training 5 Outline: Data Recording

Activity 1: Opening Exercise

Introduction to the Current Training

Discussion about the importance of data collection

- Progress monitoring tool that informs programming
 - Collecting behavioral data can help find the function of behaviors and to monitor the efficacy of behavior plans.
 - In terms of learning skills, when a student consistently responds correctly, decreasing the level of prompting to move towards greater independence or moving to a new skill may be indicated.
 - If a student is not making progress, he or she may lack the necessary prerequisite skills and other skills may need to be addressed first.
- It is critical to collect data consistently and accurately.

Opportunity for questions

Activity 2: Introduction to Data Recording

Review of basic behavioral concepts and assessment

- Antecedents
- Behaviors
- Consequences
- Setting events
- Operational definitions of behavior

Applying behavioral concepts to data recording

- Review behavior recording data sheets
 - ABC data sheets
 - Frequency data: recording the number of times a behavior occurs
 - Duration data: recording the amount of time that behavior occurs in a given period

Review of prompts and their abbreviations

- Full physical prompt (FP)
- Partial physical prompt (PP)
- Verbal prompt (V)
- Modeling (M)
- Gestural (G).
- Other information and abbreviations that may need to be indicated on data sheets:
 - Independent (I): used when a student completes task without prompts
 - Non-responsive (NR): used when a student does not respond to prompts
 - Resistant (R): used when a student refuses task

Review of other program data sheets

Activity 3: Application of Data Recording and Closing Exercise

Review of data sheets and practicing with a partner

Whole group discussion

Opportunity for questions followed by assessment

BEHAVIOR FREQUENCY RECORD AND GRAPH

STUDENT _____ TEACHER _____

BEHAVIOR PINPOINT _____

OBSERVATION PERIOD (Time of day/activity) _____

Date													
F R E Q U E N C Y O F B E H A V I O R	25	25	25	25	25	25	25	25	25	25	25	25	25
	24	24	24	24	24	24	24	24	24	24	24	24	24
	23	23	23	23	23	23	23	23	23	23	23	23	23
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	3	3	3	3	3	3	3	3	3	3	3	3	3
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	1	1	1	1	1	1	1	1	1	1	1	1	1

Note baseline or type of intervention above (start and end dates)

[illegible]

Student
Program

Date:	Date:	Date:	Date:	Date:
Instructor:	Instructor:	Instructor:	Instructor:	Instructor:
Target:	Target:	Target:	Target:	Target:
Materials:	Materials:	Materials:	Materials:	Materials:
FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND
FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND
FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND
FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND
FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND
FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND
FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND
FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND
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FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND	FP PP V G IND
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SCORE:	SCORE:	SCORE:	SCORE:	SCORE:
NEXT STEP:	NEXT STEP:	NEXT STEP:	NEXT STEP:	NEXT STEP:

[illegible]

Program List

Student: _____

Page: _____ of: _____

Curriculum content area: _____

Mastery Criterion: _____

	Program	Date Introduced	Date Mastered	Maintenance? Yes/No
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Training 5 Assessment: Data Recording

Name: _____

Fill in the blank with the name and abbreviation of the prompt:

_____: providing a signal

_____: manually guiding the student

_____: modifying the placement of teaching materials

_____: demonstrating the response

_____: using text or pictures

_____: telling the student how to do a task/providing a verbal model of the response

Fill in the blank with the name and abbreviation of other information that may need to be included on data sheets:

_____: used when a student completes task without prompts

_____: used when a student does not respond to prompts

_____: used when a student refuses task

True or False (circle the correct answer):

When a student is not making progress, he or she may need to go back to build a foundation of basic skills. True False

When a student consistently responds correctly, it indicates that the level of prompting should be increased. True False

Why are operational definitions of behavior necessary for data collection?

Why is data collection important?

Comments/questions about today's training: