AN INVESTIGATION INTO BEST PRACTICES
IN TRAINING PARA-EDUCATORS
OF STUDENTS WITH AUTISM

A thesis presented
by
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to
The School of Education

In partial fulfillment of the requirements for the degree of
Doctor of Education
in the field of
Education

College of Professional Studies
Northeastern University
Boston, Massachusetts
November 2014
Para-educators have become the backbone of special education classes providing services for students with Autism Spectrum Disorder (ASD), (Crawford, 2005). As a result, they have been assigned more responsibility in the classroom that includes providing instructional support, while often left to fend for themselves, functioning as primary teacher (Giangreco, 2010). Para-educators are often hired with little or no previous experience in working with students with ASD and little or no course work or professional development training in special education. The purpose of this qualitative multiple case study was to determine how four para-educators perceive and respond to an individual training program designed to assist para-educators working with students on the autism spectrum, and identify training strategies and themes that are important to their work. This study was based on a social cognitive and constructivist theoretical framework where students learn best by taking control of their own learning, and developing their own goals. The coaching and professional development format used in the study encouraged para-educators to take an active role in their own learning. This study provides preliminary research-based guidelines so that practitioners may begin to develop training programs that will meet the needs of students with ASD. Additional research that would support the findings of this study, may lead to the implementation of a standardized training program and certification for para-educators working with students with ASD.

Keywords: para-educator, Autism, Applied Behavior Analysis, coaching
DEDICATION

This paper is dedicated with love to my family. This would not have been possible without their unconditional love and support. I hope I have served as a role model to my children, passing the torch to them from my parents, who did not have the opportunity to complete college, but believed as I do that pursuing one’s studies is an important and integral part of one’s life. A special dedication is given to my twin sister, for her never-ending encouragement and sense of humor to “just get it done.”

This is also dedicated to all of my students over the years who deserved the very best from their teachers and para-educators. They have taught me so much and inspired this study.
ACKNOWLEDGEMENT

I would like to thank the many people who helped me throughout this research study. I would like to thank the Director of the Schwartz Center, Margaret Maiato, for introducing me to the administrators of the Mayflower School and providing me with the flexibility in my work schedule, during the on-site professional development and weekly coaching sessions. I would like to thank the Special Education Director, building Principal, and para-educators, who were the primary subjects, who gave up their time and opened themselves up to new possibilities in the training process.

I would also like to give thanks to Dr. Carol Young for her support and assistance she gave me over the years to make this possible. Her guidance was invaluable and I could not have done this without her. I would like to thank the second reader, Dr. Billye N. Sankofa Waters, for her feedback and support throughout the development of this dissertation. I would like to thank Ann Dupuis from the Hyper Research Software, for the many hours she worked with me, serving as an independent audit. I would like to thank my outside reader, Dr. Elena Zaretsky for jumping on board so willingly and her enthusiasm and support.

I would also like to thank Dr. Maura Marks, my twin sister; she was a continuous source of support and encouragement. This was a long road and there were times I did not think I would get to the finish line. I could not have made it through without her. I am very grateful for the support of my family who put up with my absence so many times, so I could work on my study. My thanks to my son Charles, my daughter Robin, and nephews Cliff and Russ who came to my aide whenever I ran into computer glitches.
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Chapter One: Introduction

Statement of Problem

Teaching assistants and one-to-one para-educators working with students with autism spectrum disorder (ASD) are often hired with little or no special education experience and receive minimal preparation or training (Giangreco & Broer, 2007). While para-educators are expected to provide ASD students with highly specialized curriculum and behavioral interventions, the majority of teaching assistants supporting pupils with autism spectrum disorder start work with no prior knowledge or experience in working with children with ASD (Symmes & Humphrey, 2011). Several factors contribute to the lack of adequate training; Dracy and Yutzenka (1997) identify that administrators consider staff training one of the first places to cut when budgets need to be trimmed. These staff members generally receive low wages and few opportunities for career advancement resulting in a high turnover rate (Ghere & York-Barr, 2007). Although para-educators are often invited to district workshops, they are not paid to attend; such policies reduce self-initiative and can increase para-educators’ perceptions that they are not valued (Lewis, 2005).

According to Giangreco & Broer (2010) a majority of administrators believe that special education teachers work under conditions that facilitate the training and supervision of para-educators. Para-educators are required to work under the direct supervision of qualified professionals, according to the NCLB mandate (MA DESE, 2003). However, self-reporting data indicates that para-educators operate independently and autonomously, isolated from direction and supervision (Etscheidt, 2005). The reality is that while para-educators are assigned to provide intensive, one-to-one instructional support for students with severe
disabilities, individual para-educators spend less time instructing students and spend at least one quarter of their time self-directed (Gianfranco & Broer, 2007). Each special educator spends about seven percent of his or her time training and supervising para-educators.

Students with autism, often have many more specialized needs compared to other special education students (Boutot & Tincani, 2009). Students diagnosed with autism, a neurological disorder, experience deficits in cognitive, social, and communication skills, which impede their interaction within their daily environment. Other characteristics often associated with autism include engagement in repetitive activities and stereotypic movements, resistance to environmental change or change in daily routine and unusual responses to sensory experiences (DSM-IV). Students with ASD require a more specialized teaching approach than other special education students (Kosmerl, 2011). Many researchers have gone on to conclude that applied behavioral analysis (ABA), which uses evidence-based methods, is the only treatment that produces comprehensive lasting results for autism (Matson, Tureck, Turygin, Beighley, & Rieske, 2012). ABA includes the use of errorless teaching procedures, and the use of a prompt hierarchy to assure rapid acquisition of targeted skills and substantial reduction in the frequency of problem behaviors (Born-Miller, 2002).

Whether it is a result of better diagnosing or an actual increase in the number of students on the autism spectrum, this intensive special needs population attending public school programs continues to grow (Webster, Blatchford, Basset, Brown, Martin and Russell, 2010). The application of cognitive and behavioral strategies has proven highly successful with students on the spectrum through the use of applied behavioral analysis, discrete trials, differential reinforcement procedures and data collection; methods which only a qualified para-educator is capable of implementing (Mikos & Dipuglia, 2010). In an effort to address the
needs of these severely impaired students, school systems opt to assign them to para-educators, the least qualified support staff (Giangreco & Broer, 2005). Para-educators provide the majority of support and instruction to students with the most challenging learning and behavioral needs.

**Significance of the Research Problem**

As previously stated, school districts hire para-educators to work with students with ASD with no formal training who continue to work with limited knowledge, skills, and support (Koegel, Robinson, & Koegel, 2009). This disability presents complex challenges to untrained para-educators requiring intensive, comprehensive programming that includes the application of core ABA methods and principles that include shaping, task analysis, chaining, generalization, prompting and functional assessment (Matson, Turneck, Turygin, Beighley, and Rieske, 2011). Para-educators work with students to help develop such basic skills as joint attention, as it applies to the acquisition of language, social development, affect sharing and theory of mind.

At the same time, interfering behaviors such as aggression and self-injury need to be addressed, as they are a major impediment to learning (Mesibov, 2011). Para-educators need to be trained to remediate behaviors that interfere with instruction as well as issues of generalization, motivation and maintenance. Effectiveness may be sacrificed when skill-based interventions to address such need areas as delays in processing, distractibility, organizational and sequencing difficulties, are implemented inconsistently or with poor precision (Koegel, Robinson, & Koegel, 2009).

Even with appropriate professional development training, Hall, Grundon, Pope, and Romero, (2010) suggest that paraprofessionals have a difficult time generalizing and applying what they learned at an in-service training or workshop, to the classroom setting. The study
completed by these authors (2010) identified the need for a mentoring through coaching model as a means of providing para-educators with immediate performance feedback to increase their correct use of strategies.

In a similar study, a teacher-to-teacher coaching model was used to produce changes in the teaching behaviors of kindergarten teachers, early childhood teachers and paraprofessionals (Koegel, Robinson, & Koegel, 2009). Daily and weekly feedback as well as on the spot suggestions were the two strategies that successfully improved teachers’ skills in social facilitation, activity adaption and the implementation of peer based instruction of IEP goals. Students with special needs experienced increases in social interaction, were more engaged in teaching activities, and demonstrated progress toward IEP goals. Koegel, Robinson, & Koegel (2009) recommend that training programs take place in the natural environment, following classroom routines, with performance feedback and problem solving given in real time. Peer to peer coaching has the advantage of facilitating modeling of strategies to address techniques that apply with specific students. Traditional in-service workshops are insufficient by themselves (Hall, Grundon, Pope, and Romero, 2010).

The Para Pro Assessment was developed by the Educational Testing Service (ETS, 2009) in response to the paraprofessional requirements of No Child Left Behind legislation. Para Pro measures common skill sets that para-educators must master to work with students with special needs. These academically based standards are used to measure reading, writing and mathematics skill levels. The Para-educator Standards Workbook (CEC, 2004) and video provides a knowledge and skill base for beginning para-educators providing students with academic support; however, neither addresses the necessary training needs for para-educators
working with students on the autism spectrum. For para-educators working with young or severely autistic students, it is more appropriate to provide modules that identify:

- How learning occurs with the introduction of the cognitive and social learning domain competencies based on Bloom’s Taxonomy to identify: the classification of learning skills, Bloom’s levels of learner knowledge, and internalization of methodologies (Apple, 2009).
- How autism spectrum disorders significantly impact all areas of student’s life including communication/language, social and cognitive abilities. The most common characteristics of autism, how these characteristics differ from those of typically developing peers, and how they impair a child’s ability to learn (Butch & Butch, 2011).
- How to administer evidence-based interventions using applied behavioral analysis to include: errorless teaching, prompting, fading, shaping, verbal behavior, and discrete trials and data collection.
- The management of behavior to include: functions of behavior, reinforcement, and interventions related to function, positive behavioral intervention that emphasizes consequences for positive behavior (Kinsella & Honan, 2011).

By identifying the required skill sets, a training program could be specifically designed to train, prepare, and assess para-educators who are assigned to work with students on the autism spectrum (CEC, 2004). Assigning trained support staff to students with ASD can positively impact both student performance and the ability of the special educator to implement behavioral interventions, collect valid data, and meet individualized student goals and objectives that are necessary for student progress.
How are states addressing the training needs of paraprofessionals? Picket (1999) reports that most states have not adequately addressed this issue since the Individuals with Disabilities Education Act (2004) regulations offer minimal guidance and direction in what delineates appropriate training and supervision to schools. Some states have initiated standards for hiring, professional development programs and professional certification programs for para-educators, while the majority of states have not. Eleven states have para-educator professional development programs, not including Massachusetts (Education Commission of the States, 2006). Ten states, excluding Massachusetts, require para-educators with instructional duties to be certified. Twelve states have implemented requirements for para-educators that exceed federal requirements; Massachusetts is excluded from this group (2006).

Positionality Statement

Historically, para-educators have provided services ranging from clerical tasks to assisting students with individualized functional living tasks of students. Today, though, the Council of Exceptional Children (2009) notes that para-educators deliver individualized services and have an increasingly prominent role in delivering individualized instruction to students on the autism spectrum. The controversy over the use and role of untrained teaching assistants in supporting special needs students in the public school has expanded to an international dilemma. As a result of significant gaps in para-educators’ knowledge, preparation and training, Webster, Blanchford, Bassett, Brown, Martin & Russell (2010) identify how teaching assistants in the UK have negatively impacted the academic progress of special needs students.
In serving as a special education teacher and supervisor of para-educators, this researcher can attest to the need to impart basic knowledge of the learning process, and evidence-based interventions to ensure acquisition and retention of skills. The majority of para-educators assigned to my classes had no prior training or experience working with students on the spectrum. To ensure that training was implemented correctly, “real time” coaching was used and based on an individual basis, this was the most effective way to address issues as they occurred.

This researcher determined the need for this study based on thirty years of experience as a special education teacher for students on the autism spectrum in New York and Massachusetts. It was not unusual to have seven para-educators, with varying levels of experience and ability, assigned to work with individual students in a single classroom for the duration of a school year. McGrath, Johns & Mathus (2010) identify several common para-educator challenges presented to classroom teachers that ultimately impact the quality of services provided to students. The researcher has experienced the kind of dilemmas presented when a newly hired teacher is placed in a classroom with an untrained para-educator who has worked for the district for an extended time. For example, a para-educator initiated professional and personal contact with parents that had not been cleared with the teacher; a para-educator used behavior management and academic strategies contrary to the lead teacher; a para-educator attempted to sabotage the teacher-student relationship, and the inability of para-educators in a self-contained classroom to get along.

With teaching experience in state, public and private schools settings, this researcher can affirm that student success is directly impacted by the knowledge and skill sets para-educators convey to special needs students. While many para-educators enter the special education class believing they meet the pre-requisite of adequate training by having childcare experience with
their own children or assisting in regular education classes, few are prepared to effectively deal with the learning style and behavioral issues associated with autism.

The expectation for training of para-educators within the public school setting consists primarily of on the job training provided through teacher directives. Some schools offer participation in professional development workshops that are either voluntary or require para-educators to attend two workshops per school year; however, these trainings are generally not designed to target the needs of paraprofessionals. School systems tend to prioritize professional development programs to address the largest professional and student population needs, with emphasis placed on general education issues. Other school districts expect the special education classroom teacher to provide on-going para-educator training. Essential trainings then become voluntary, lacking incentives for para-educators to attend (Koegel, Robinson, & Koegel, 2009).

In the absence of furnishing provisions for additional time for teachers to offer such basic preparation either during the course of a school day, before or after school, or before a school year begins, one needs to question whether para-educators should continue to have a pedagogical role, in teaching, supporting, and interacting with ASD students. Lack of para-educator training presents unnecessary safety issues for students, para-educators and the classroom teacher (Etscheidt, 2005). Para-educators are required to manage such behavioral issues as bolting, tantrums, noncompliance, and inattention (Matson, Tureck, Turygin, Beighley, & Rieske, 2011). Lack of consistency in dealing effectively with behavioral episodes can result in reinforcement and escalation of negative behaviors.

As a special educator one needs to question whether students are benefiting
from the least restrictive environment when an untrained adult is their only link to building
cognitive, communicative and social skills in an inclusion setting (Etscheidt, 2005). An over-
reliance on para-educator support can result in denial of federally mandated, free and
appropriate education (FAPE).

**Research Questions:**

There is a lack of appropriately trained para-educators assigned to classes and programs
servicing students with autism spectrum disorders, presenting a paradigm shift in the current
training needs and the roles of para-educators. Para-educators responded to initial interview
questions to determine what, if any, training was completed prior to their hiring as well as
recent workshops in working with children on the spectrum they may have attended. The
application of an individual coaching model for para-educators was explored as a professional
development strategy along with the identification of training themes needed to address critical
skill requirements to promote a positive learning environment for students on the autism
spectrum.

**Central Question:**

How do para-educators perceive and respond to an individual training program
designed to assist them in working with students on the autism spectrum?

**Sub-Questions:**

1. What are para-educators’ understandings of strategies to support students with
   autism?

2. How do para-educators describe their experience in an individual training program?

3. What are the training themes that para-educators identify as most important to
   their work with students on the autism spectrum?
Theoretical Framework

A study designed to evaluate the training needs of para-educators working with students on the autism spectrum was completed to enhance programming and professional development of staff. Para-educators’ understanding of effective cognitive and behavioral strategies is critical to students’ educational growth. An understanding of the training needs of staff was analyzed using the theoretical lens of constructivism and social cognitive learning theory.

Constructivism

Although Vygotsky’s socio-cultural theory (Vygotsky, 1978) predates the constructivist movement, his theoretical framework made a significant contribution to constructivism (Jaramillo, 1996). Vygotsky wrote extensively about learning by doing. In his constructivist approach, he viewed the role of teacher, or in this study para-educator, as a facilitator who fosters cognitive, emotional, and external interactions.

The constructivist approach to learning emphasizes authentic, challenging projects that include students, teachers and experts in the learning community. Its goal is to create learning communities that are more closely related to collaborative practice of the real world (Booker, 2008). In an authentic learning environment, learners assume the responsibility for their own learning. Teachers are encouraged to provide a classroom environment less concerned with facts and more conducive for problem solving and independent thinking. Teachers use the zone of proximal development (ZPD) by teaching concepts that are just above a student’s current skill and knowledge level (Jaramillo, 1996). Vygotsky believed that a teacher could teach any
subject effectively to any child at any level of development by using modeling and scaffolding techniques (Jaramillo, 1996).

From Vygotsky’s perspective, constructivism stresses the use of experiential learning that includes creating, incentivizing and developing one’s own knowledge, as opposed to the student being the passive recipient of adult-directed information (Lui & Chen, 2010). The instructor is a facilitator who organizes activities for learners to discover their own learning. This view of learning calls for a dramatically reduced reliance on a didactic textbook-based approach to teaching and learning (Prawat, 2003). Para-educators can benefit from the use of active collaborative learning approaches to support discovery and construction for knowledge as opposed to traditional didactic teaching models (Beyerlein & Apple, 2009).

**Social Cognitive Theory**

Social cognitive theory (Fox & Riconscente, 2008) is used to describe in detail the learning processes and sub-processes involved in goal-directed behavior and motivation; it is used to assess learning outcomes through self-efficacy and self-regulated learning. Self-efficacy beliefs refer to one’s self-confidence in engaging in specific tasks that contribute toward the progress of one’s goals. Self-regulated learning refers to the process of learners actively taking control and responsibility for their learning. Adults learn, retain, and use that which they perceive is relevant to their needs (Pickett, 1999). Training must therefore enable para-educators to see the relationships between what they are learning and their day-to-day activities. They also need to see the results of their efforts and have feedback on their progress. Para-educator training should provide opportunities to try out what they are learning and to receive structured feedback through coaching and follow-up support. Positive structured
feedback and support will enable para-educators to build self-confidence in their own ability, and, at the same time, assure that teaching approaches are used correctly, and that data collected that is based on student goals and objectives are accurate and, therefore, valid.

Social cognitive theory aligns itself to process education philosophy, which focuses on improving learning skills in the cognitive, social, psychomotor, and affective domains, with the ultimate goal of creating self-growers (Beyerlein & Apple, 2009). These skills are associated with the construction of understanding, problem solving, and both personal and interpersonal development and can be developed progressively to higher-level performance. These principles are not only applicable to students but to para-educators as adult learners. Although everyone requires help with learning at times, the goal for para-educators is to become capable and self-sufficient; assuring that para-educators have the ability to apply the learning processes to self-assess and improve future performance, will ultimately benefit ASD students.

Self-regulatory abilities based on social cognitive theory consist of four levels of development: observation, imitation, self-control, and self-regulation, working toward increasing skill ability to independence (Erlich & Russ-Eft, 2011). Research has shown that academic achievement and self-efficacy can be improved by observational learning through modeling. Self-regulation is addressed by teaching how to set goals, self-monitor, use self-instruction, self-evaluate, and self-reinforce (Zito, Adkins, Gavins, Harris & Graham, 2007).

Vygotsky identified the need to build on whatever levels of overall independence an individual exhibits and supplement areas of need with support (Gindis, 1999). He advocated for the use of dynamic assessment, implementing micro genetic analysis, which studies the
process of learning and achievement of competency as it actually occurs over time (Brown & Campion, 1985).

Vygotsky’s position was that instruction creates the possibilities for development rather than being seen as subordinate or incidental to developmental processes (Daniels, 1993). Instruction is only useful when it moves ahead of development (ZPD), which is key to progress. The para-educator needs to be able to understand the level at which the student with ASD is functioning according to developmental learning measures in order to anticipate the next step in the learning process and to provide appropriate direction and guidance.

Behavioral analytic treatment for autism focuses on teaching small measurable units or skill levels systematically. Every skill the child with autism does not demonstrate is broken down into small steps (Maurice Green, & Luce, 1996). This approach is used to develop simple responses such as looking at others, to more complex acts such as spontaneous communication and social interaction. Each step is taught, generally beginning in one-to-one teaching situations by presenting a specific cue or instruction with prompts supplied then faded to encourage independent responses. The American Academy of Pediatrics, in 2007, identified the effectiveness of ABA-based interventions through five decades of research (Larsson, 2008). A variety of ABA approaches include discrete trial training and the use of a prompt hierarchy to establish learning readiness by teaching such foundation skills as attention, compliance, imitation, and discrimination learning through the use of task analysis. Learning is enhanced as the success of smaller steps leads to the acquisition of more complex skills (Maurice, Green, & Luce, 1996).
Summary

In summary, Vygotsky believed in the intellectual version of apprenticeship learning, where the teacher is first expected to model the practice; as the student becomes more skillful, control is turned over to the student (Prawat, 2003). Vygotsky asserted that rather than viewing the disabled individual as a sum of his negative characteristics, a disability should be identified from a point of strength rather than weakness. Vygotsky proposed a socially driven stage theory of psychological development using the Zone of Proximal Development to target instruction. Supports created by scaffolding can facilitate emerging skills to the next developmental level (Daniels, 1993), as facilitated through applied behavioral analysis. A para-educator’s most difficult challenge is to understand the learning process and become effective in facilitating the rapid development of performance in ASD learners (Leise & Beyerlein, 2009).
Chapter Two: Literature Review

The purpose of this literature review is to address what is known about par educator training and preparation and to understand how to best meet the training needs of para-educators assigned to working with students on the autism spectrum. What are the expectations and requirements for para-educators working in special education classes for autistic students? The training of para-educators can no longer be considered secondary to training professional staff, since they often spend more time than teachers do with special needs students (Giagreco, Smith, & Pinckney, 2006).

What issues arise as a result of randomly assigning para-educators with students on the autism spectrum and how can resolution of specific training issues improve paraprofessional performance? In the following sections research will be presented to document the absence of statewide standards that address para-educator training needs, to identify required competencies, and to suggest methods for training para-educators.

The purpose of this literature review is to research the field and determine what others have learned about on this problem of practice. Economic factors during recent years have forced many school districts to consider alternative cost effective service delivery models to meet the needs of students with disabilities (Breton, 2010). The increased demands for special education services, lack of certified special education teachers, especially in rural areas, emphasis on inclusion, and accountability factors driven by IDEA all have all influenced the role that para-educators play in delivery of educational services. IDEA requires states to address identified needs for in-service and pre-service training for para-educators to ensure that they have the knowledge and skills necessary to meet the demands of students with
disabilities (2010).

In 1979 the National Center for Paraprofessionals in Special Education surveyed fifty state education agencies to obtain para-educator certification descriptions, and training patterns (Frith & Lindsey, 2001). Eighty-six percent of the states reported they did not have certification standards for special education para-educators. The majority of those questioned indicated that certification standards for para-educators should be determined by the training agency rather than the state or local board of education. Four-fifths of the states thought that the Local Education Agency and two year colleges were best suited for training special education para-educators. Fifty-five percent considered in-service training to be the preferred training process; forty-five percent advocated pre-service training. The majority indicated that a combination of the two was necessary. The majority of those states surveyed did not have program approval standards for special education para-educators.

Currently a small number of states require para-educator certification; Massachusetts does not offer certification for para-educators. (Education Commission of the States, 2006). Maine and New York City have mandated the completion of a formal certification program as a condition for licensure (Breton, 2010). The three levels of standards, are referred to as technician I, II or III; each level containing education requirements, permitted responsibilities and supervision requirements with level three requiring less supervision and requiring more independently implemented responsibilities than the prior two levels.

What are the expectations and requirements for para-educators working in special education classes for autistic students? The role of para-educators is not clearly defined, often as a result of a lack of understanding of necessary
attributes needed, on the part of administrators, to be successful in this role (Dillon & Ebmeier, 2009). What issues arise as a result of randomly assigning para-educators with students on the autism spectrum and how can resolution of specific training issues improve paraprofessional performance?

Beginning with an introduction to identify the role of the para-educators and ending with identification of specific training curriculum to enhance the performance of para-educators working with students on the autism spectrum, this literature review informed and directed this study. A thorough search of the literature revealed that although disagreement exits as to the appropriate use of para-educators within the special education classroom setting, general consensus is that appropriate educational training is necessary and lacking.

Keywords: para-educator autism ABA discrete trial training, coaching

Definitions

*Autism*: A qualitative impairment in social interaction and communication characterized by a marked impairment in the use of eye gaze, facial expression, body postures, and gestures to regulate social interaction (DSM-IV, 1994); failure to develop peer relationships appropriate to developmental level; lack of spontaneous seeking interaction to share interests; lack of social or emotional reciprocity; delay or total lack of spoken language. Impairment in the ability to initiate or sustain a conversation with others; stereotypic and repetitive use of language; lack of social imitative play appropriate to developmental level. Characteristics of autism range from mild to severe.
**NCLB**: No Child Left Behind: As part of the No Child Left Behind Act, minimum education standards were established for para-educators with instructional responsibilities working on certain programs or schools that receive Federal Title I funding under the Elementary and Secondary Education Act (Connecticut General Assembly, 2006). For school-wide programs the requirements apply to all para-educators without regard to how their position is funded (MA DESE, 2010). The minimum requirement for these para-educators is completion of two years of study at an institution of higher education, obtaining an associates degree, or meeting objective standards through a formal academic assessment.

**Applied Behavioral Analysis**: employs methods based on scientific principles of behavior to build socially useful repertoires and reduce problematic ones. Emphasis is placed on the functions of behavior, and requires repeated measures; ABA uses observable measurable behaviors; changes are made to the environment to change behavior (Maurice, Green, & Luce, 1996).

**Discrete trial instruction**: A particular application of basic learning principles designed to facilitate learning; emphasizes clarity of instruction and the teaching skills in an incremental manner (Boutot & Tincani, 2009).

**Coaching**: Coaching is an essential part of training that typically occurs during or after the training session, on the job, while the para-educator works with students. Coaching requires focused observations of para-educator application of specific skills or concepts on the job with students, while providing constructive formative feedback that addresses specific performance to enable the para-educator to refine his or her use of specific strategies or skills (French, 2003).
The historical role of para-educators.

During the 1940’s “teacher’s helpers” were high school graduates who assisted classroom teachers with large numbers of students, in part a result of immigration (Lewis, 2005). During the 1950’s, in response to a teacher shortage, a Syracuse University project was conducted focusing on the use of teacher aides in special education (Cruickshank & Herring, 1957). The researchers concluded that para-educators placed in special education classes could create an effective means of providing special services to students and support for classroom teachers. By the 1960’s teacher aide positions were used to address teacher shortages as well as societal and institutional barriers, which prevented the poor from achieving professional status. The teacher aide position was viewed as a career path for the poor that could lead to teaching or other educational careers. (Lewis, 2005).

Several legislative actions, such as the Education Professions Development Act of 1967, mandated training for instructional aides during the late 1960’s and 1970’s (Lewis, 2005). The Comprehensive Employment and Training Act of 1973 provided school districts with money to train unemployed or underemployed individuals that would lead to professional growth. The legislative goals were to develop career opportunities for the economically disadvantaged and improve education for students.

The passage of Public Law 94-142, The Education for All Handicapped Children Act of 1975, required that schools provide a free and appropriate education for all children with disabilities (French, 2002). The EAHCA specified that staff development take place and that training be supervised, thereby expanding the role of instructional aides. The goal of Public Law 94-142 was to assure that students with disabilities were not excluded from schools. According
to Giangreco (1997) while these goals may have been met and instructional aides have become the primary instructors of special needs students, they are not receiving the specialized training needed to work effectively.

**The role of para-educator as defined by Title One and NCLB:**

The role of para-educators has dramatically changed from that of clerical staff as a result of a well-documented shortage of trained qualified professionals to work with special needs students and their families (Killoran, Peters, Templeman & Udell, 2001). Para-educators are assisting and providing services that range from implementation of augmentative communication strategies for students with autism, to positive behavioral strategies to address disruptive behavioral issues. With the current emphasis on inclusion of students with autism in general education as well as other special needs students in public school settings, para-educators may make up about a quarter of an entire school workforce (Webster, Blatchford, Bassett, Brown, Martin, and Russell, 2010).

In accordance with Title One and Part A funds, a para-educator or paraprofessional is an employee of a Local Education Agency (LEA) who provides instructional support which includes those who:

- Provide one-on-one tutoring when scheduled at a time when a student would not otherwise receive instruction from a teacher.
- Assist with classroom management, for example, by organizing instructional materials.
- Provide instructional assistance in a computer laboratory.
- Provide instructional support in a library or media center.
- Acts as a translator.
• Provide instructional support services under the direct supervision of a highly qualified teacher (MA DESE, 2003).

According to the Massachusetts Department of Education (2003) para-educators must possess specific skills and knowledge in reading, writing, mathematics and instruction to be considered qualified to assist in instruction. NCLB requires that all Title One para-educators must have a high school diploma or its equivalent regardless of the date they were hired (MA DESE, 2003). Para-educators hired after January 8, 2002 and working in a program supported with Title I Part A must complete two years of study at an institution of higher education, obtain an associate’s degree or higher, or take and pass a formal assessment measuring their ability to assist classroom teachers in reading, writing and mathematics (CEC, 2004).

These requirements apply to all instructional para-educators including those who work with students with disabilities as aides or tutors, fulfilling instructional duties in a school-wide program, regardless of whether their positions are funded with federal, state or local funds (MA DESE, 2010). In a school-wide program, Title I funds support all teachers and instructional para-educators. In a targeted assistance program however, only instructional para-educators who work with students with disabilities, whose positions are fully or partially funded by Title I, must meet the two required qualifications.

According to Hall, Grundon, Pope, & Romero, (2010) adequate training maximizes the effectiveness of educators provided it is competency based, systematically planned and ongoing. Para-educator training has fallen into three categories: on the job, in-service and pre-service training. Effective training can consist of credit-based courses through colleges, web-based training courses, peer mentoring or coaching sessions, or on the job training provided by a
supervisor. The most important aspect of any training is that it builds knowledge and skill content in an ongoing manner. One three-hour workshop provided by a highly trained consultant, and offered by a district may be very relevant. However, it does not provide enough training time and commitment or real life experiences that para-educators can learn from (Likens, 2003).

**Lack of training in the workplace**

Over the past several decades, the number of special education para-educators has grown and their role has become increasingly instructional (Giangreco, 2010). A number of developments have contributed to the growth in the range and number of para-educators since the 1990’s; this includes the drive to include greater numbers of special needs students in community schools and the use of para-educators to provided instructional support of academic skills (Webster, Blanchford, Bassett, Brown, Martin, & Russell, 2010). It is the notion that instruction provided by para-educators to students with disabilities should be supplemental rather than exclusive, that has become a contemporary issue, with the advent of more one-to one para-educator supports in inclusive classrooms (Giangreco, 2010).

According to French (2003) critics recognize that untrained para-educators hired to serve individual students may inadvertently separate students from general education curriculum and teachers even though students are ensured such access in the law. There is concern that para-educators, who intervene inappropriately, providing assistance when none is needed, create social barriers between students. Not only do these practices reduce the probability of ensuring that students with disabilities receive a free and appropriate education, but they may also be a sign that society still undervalues students with disabilities and has unnecessarily low expectations of them (Doyle, 2002). Para-educators contribute to an important life-long strategy
of generalization of skills from instructional to community environments. Since intensive artificial instructional supports from para-educators cannot be replicated in post school environments, natural classroom supports that enable students to experience learning from a variety of perspectives are preferable (French, 2003).

As a result of increasing utilization of para-educators in special education several concerns have been identified in ensuring appropriate education for students with intensive disabilities, including autism, when schools rely on para-educators for primary support in regular and special education classrooms (Broer & Giangreco, 2007). Giangreco (2010) voiced the concern that para-educators, in some instances have replaced the use of the most qualified teachers for students with the most intensive disabilities.

Descriptive research has helped to identify inadvertent detrimental effects relating to the use of para-educators as primary instructors that include interference with peer interactions, and loss of personal control (Giangreco, Broer, & Edelman, 2011). Their research documented that students with disabilities who were placed in general education settings with one-to-one para-educators had less teacher engagement than when the para-educator was program or classroom based. One of the most prominent findings that emerged from a study completed by Giangreco, Edelman, Luissell and Macfarland (1997) was that para-educators were in close proximity to students with disabilities on an ongoing basis. This was evidenced by the para-educator maintaining physical contact with the student, the para-educator sitting in a chair immediately next to the student, as well as the para-educator accompanying the student with disabilities to every place the student went within the classroom, school building and grounds. Although some level of close proximity between students and para-educators is desirable and sometimes essential, excessive adult proximity is not always necessary and could be detrimental to students.
In addition, while sensitivity and affection are important qualities of para-educators, those whose personal needs are so great, may be likely to over-mother or smother students with good intentions (French, 2003).

Webster, Blanchford, Bassett, Brown, Martin & Russell (2010) found that para-educator support has a negative impact on special needs student’s academic progress. Those pupils receiving the most para-educator support made less progress than similar students who received little or no para-educator support. Their research calls into question para-educators’ understanding and abilities regarding their preparation and training, deployment, and practice. Young, Simpson, Myles & Kamps, (1997) maintain that the behavior and performance of students with autism are affected by the adults in their lives, including para-educators. Para-educators are often the primary adults with whom students in sub-separate and inclusionary settings interact, accentuating their importance and how essential it is to train them. According to Webster et al. (2010) if para-educators are to retain a pedagogical role, it should be limited to delivering structured and well-planned interventions, which requires that they be properly trained and prepared for.

Schuermann, Webber, Boutot and Goodwin (2003) state that little formal data exists about the state of personnel preparation in autism. The National Research Council (2001) reports that no data exists to identify how many autism personnel preparation programs operate or which professional disciplines are involved in autism training. Para-educator preparation remains one of the weakest elements of effective programming for children with autism. Students with ASD, especially those who are low functioning, exhibit unique and challenging behaviors that require specific behavioral interventions. (Schuermann, Webber, Boutot & Goodwin, 2003). These students often exhibit deficits in cognition, communication, and socialization. Basic functional
learning skills are delayed or absent and many students demonstrate extreme aggressive, self-abusive, and/or non-compliant behaviors.

While the para-educator has become the backbone of inclusive special education early childhood programs (Crawford, 2005), few states have identified competencies or systematically train para-educators even though they represent the largest group of personnel providing early intervention and early childhood special education services (Killoran, Templeman, Peters & Udell, 2001). The shortage of early intervention and special education personnel who are appropriately trained is well documented and consistently acknowledged in professional literature. States are not only faced with the task of developing a Comprehensive System of Personnel Development (CSPD) that is consistent and comparable with Part B and C of IDEA but are also challenged with establishing policies, personnel standards, and training programs to ensure that currently employed para-educators in early intervention and special education are adequately and appropriately trained.

Symes and Humphrey (2011) indicate that prior experience and knowledge of autism is a crucial factor for para-educators, in order to effectively support pupils with ASD and their teachers. Their study consisted of fifteen teaching assistants supporting pupils with ASD within a mainstream secondary environment; the majority of para-educators worked with one pupil at a time and their role primarily involved helping students remain focused and follow directions. Their findings indicate (2011) that the majority of teaching assistants supporting pupils with autism began work with no prior experience in working with children with ASD, and received minimal or no training. Furthermore, para-educators indicated that generic training about ASD was not helpful. It is common for the special education teacher to coordinate the work of assistants; however, a lack of joint planning time that allows para-educators to ask questions and
receive feedback from teachers is a major concern (Berber & Dei, 2009). According to Giangreco, Broer & Edelman, (2001) special educators report spending much of their time completing paperwork, conducting evaluations and re-evaluations, attending meetings and various crises that arise which limits interactions with para-educators.

The long-term impact lack of training has on students:

According to the 2008 Cohort Study by the Massachusetts Department of Elementary and Secondary Education (MDESE, 2008) individualized educational plan objectives are required to address daily living, life skills, functional cognitive skills, and ultimately provide vocational training in compliance with the federally mandated Transition Action Plan, when a student turns fourteen. The MDESE continues to cite school districts as out of compliance for failing to address transition goals and services to assure that students work toward achieving lifelong goals.

The effective deployment of trained classroom staff can be critical in ensuring that students with intensive special needs, such as autism, have the opportunity to reach their full potential (Webster, Blatchford, Bassett, Brown, Martin & Russell, 2010). Federal special education data indicate that as of 2006, there were nearly 357,000 special education para-educators serving as primary interventionists for students with disabilities from ages six to twenty-one years. Twenty-three states now have more special education para-educators than special educators. According to Webster et al, (2010) a disproportionate number of inadequately trained special needs students lack basic skill sets; the educational and social consequence of this is their exclusion from the job force in pursuit of independence and a quality of life.
The MDESE’s (2008) annual report indicates that the graduation rate for students with disabilities, at sixty-one percent, is far below the graduation rate of eighty-one percent for all students. According to the OSEP (2002) graduation rates varied by disability category. Those falling into the category of autism had graduation rates below that of all students with disabilities. Of those special needs student who do graduate, the Massachusetts Rehabilitation Commission, in conjunction with the Office of Health and Human Services (MRC, 2008) has determined that only thirty-five percent are employed full or part-time, compared to seventy-eight percent of individuals who are not disabled.

According to the Department of Labor, Office of Disability Employment Policy (DOL/ODEP, 2008), the unemployment rate for people with disabilities in 2008 was more than double the national rate with a significant number of disabled individuals underemployed. In 2010 the U.S Department of Labor reported that the unemployment rate of people with autism is nearly ninety percent and of the ten percent who are working, many are underemployed (DOL/ODEP, 2010).

**Identifying competencies for training:**

With the passage of NCLB, para-educators are expected to take on more responsibility in the classroom, which includes providing one to one tutoring, classroom management, and instructional support services under the direct supervision of a teacher (Dillon & Ebmeier, 2009). It is important that schools carefully define the appropriate job responsibilities of para-educators. According to Dillon and Ebmeier (2009) principals and other administrative staff responsible for the selection of new staff, rarely understand the role of the para-educator and many do not fully understand the attributes necessary to be successful in this role.
According to Dillion and Ebmeier (2009) an increasing number of states and organizations are defining para-educator competencies with more legislation dictating educational qualifications, while the actual role continues to evolve. Para-educators should understand and be competent in the following areas: specific disabilities, team plans for instruction, behavior management, communication with students, learning styles and characteristics of human learning. They should have an understanding of social, emotional, physical and communication development in children, instructional techniques for students with varying abilities, special education process and laws, individual, small group instruction, inclusion, and individualized education programs (2009).

According to Giangreco (2005) it is sometimes difficult to know when providing para-educator support is appropriate and when it might cause problems. Consider the commonplace example of a para-educator providing the student’s primary literacy instruction. The student is removed from class activities at the discretion of the para-educator rather than the teacher; the student spends eighty percent or more of his social time during lunch and recess, with a para-educator rather than classmates. The para-educators, rather than the teacher or special educator, make the majority of day-to-day curricular and instructional decisions affecting the student. Most educators would consider such situations unacceptable for students without disabilities, yet these situations occur all too frequently for those with disabilities (Giangreco, 2005). Such double standards can be avoided by clarifying para-educator roles and assigning them tasks that align with their skills, providing initial and ongoing training that matches their roles, giving them prepared lessons to follow, and directing their work through ongoing, supportive supervision.

Through the use of an interview process Dillon and Ebmeier (2009), created a matrix of standard competency requirements para-educators must address during the hiring process. These
included knowledge of student learning processes, human development and specific disabilities.

The following requirements should be reviewed during the interview process:

- Knowledge and use of problem solving and communication techniques with students, colleagues, and community.
- Knowledge of the needs of diverse learners.
- Understanding of the impact of the educational environment
- Ability to implement teacher designed instructional plans.

Giangreco, Edelman, & Broer (2003) assessed the use of process planning for para-educator supports across thirteen states, to find credible ways to link support staff effort with student outcome. Through the use of questionnaires and written reports each school team utilized the school wide para-educator planning process to self-assess their para-educator supports, select priorities, and develop action plans pertaining to orienting and training. They also determined meeting times, job descriptions, hiring and assigning para-educators roles and responsibilities, and supervision and evaluation of para-educators. The most commonly reported impact on adults was that para-educators knew their jobs better as a result of para-educator planning and web-based training. Para-educators reported feeling more valued as a result of gaining knowledge and skills about their jobs, students, and instruction. Ongoing support to par-educators had a positive impact on student achievement. Providing support for para-educators in the areas of education and collaboration improved their self-confidence, which improved the working environment and the support of students. A Guide To School wide Planning for Para-educator Supports (Giangreco, Edelman, & Broer, 2003) offers the questionnaires and protocols for any schools system to attempt to duplicate their study.
The Oregon Department of Education formed a multidisciplinary task force that recommended and developed a portfolio review process by which para-educators could document their level of mastery of competencies required for their position (Killoran, Templeman, Peter & Udell, 2001). Eight core competencies were identified to include: 1) typical and atypical child development, 2) assessment, 3) family, 4) service delivery, 5) program management, 6) service coordination, 7) research, and 8) professional development, values and ethics. The task force described five levels of mastery for each competency and role ranging from unfamiliar, having awareness, knowledge, application, and mastery. Para-educators were expected to demonstrate skills at the awareness and knowledge levels as compared to specialists who were required to develop higher levels of application and mastery. A portfolio was maintained for each para-educator to document levels of performance and competence via annual evaluation ratings, observations, comments, interviews with supervisors, direct observation, work samples, formal coursework, in-service training, videotaped work sessions, written summaries, self-study and letters of recommendation. Completed portfolios were submitted for review to a statewide panel of readers.

This pilot study became the basis of the state’s Early Intervention and Early Childhood Special Education Comprehensive System of Personnel Development (Killoran, Templeman, Peters, Udell, 2001). With the IDEA mandate to maintain a qualified work force, the process used in Oregon provides a foundation for assessment and planning of training needs that have been linked to professional competencies and state standards. This process can easily be replicated at the local level and can serve as a starting point for other states to establish state standards for para-educators.
According to Katsiyannis, Hodge, and Landford (2000) areas of competency-based training for para-educators should include instruction, behavior management, task analysis, prompting, and emergency routines. Generally the roles and qualifications of para-educators have emerged because of the demands placed on teachers rather than by credentialing programs or standards that help prepare para-educators for working with students.

The Council of Exceptional Children (2004) approved the first set of national standards for preparation of para-educators working with students with disabilities, including students on the autism spectrum. To ensure that para-educators have the required skills for their expanded roles, the CEC in collaboration with the National Resource Center for Para-educators developed and validated eight preparation standards within the CEC Workbook (2004). CEC standards identify that para-educators should have mastered knowledge and skills to include foundations of special education, characteristics of learners, assessment and evaluation, instruction content and practice, planning and management, student behavior and social interaction, communication and collaboration, professionalism, and ethical practice. They suggest the rubrics to each standard be used as a self-evaluation instrument or a tool for training programs, in the absence of providing specifics about the method of training to be used.

According to Howe (2003), despite a dramatic rise in the number of para-educators placed in intensive special needs classes, there has been little systematic research to examine their effectiveness or their impact in raising academic standards for pupils with special education needs. A growing number of students with autism spectrum disorder (ASD) are attending public schools as a means of being mainstreamed, with an increasing number of para-educator staff deployed to support them (Symes & Humphrey, 2011).
Because many students with autism often require a one-to-one ratio in both special and general education classes, there is increasing reliance on para-educators to provide instruction (Schuermann, Webber, Boutot & Goodwin, 2003). Para-educators need to be skilled in the use of discrete trial training, naturalistic teaching, the use of visual supports, communication, social skills methods, and curriculum. The responsibility of para-educator training is often left to the classroom teacher; however, the trend toward non-categorical and accelerated teacher preparation programs is inconsistent with the type of training needed by teachers of students with ASD. This moves away from specialist training at the pre-service level which means that para-educators assigned to students with ASD students will receive their training after they begin working; this model presents numerous problems related to timing and comprehensiveness of content training of para-educators who rely on the supervision and mentoring of the classroom teacher. These obstacles may result in the implementation of ineffective educational programs for students with ASD.

Crawford (2005) recommends that at the barest minimum the para-educator should have a basic knowledge of autism. This can be accomplished by attending an introductory course about ASD that includes a discussion of effective teaching techniques in relation to behavior, communicating, and sensory issues. The para-educator needs to be able to break a routine task into steps and teach through these steps, using basic task analysis. The use of reinforcement and motivators is critical for learning. With students who may not respond well to social reinforcement, knowledge of reinforcement and the skillful use of positive reinforcement are essential. The para-educator must support and promote communication by understanding what the student’s communication system is and how to use it to promote initiation and independence. Mistakes can be costly in dealing with students who have behavioral challenges. Para-educators
need to be well versed in positive behavioral intervention strategies and supports, or at minimum, know how to best implement behavioral strategies written in the student’s IEP.

One of the most debilitating problems for children with ASD is the risk of becoming prompt dependent (Freschi, 2002). Closely related to this is the occurrence of learned helplessness that reduces independence. The para-educator needs to learn the strategies that can prevent this and promote independence. The para-educator also needs to understand effective ways to correct a student’s mistakes in a way that promotes learning, rather than embarrassment.

The para-educator may face some ethical challenges, as they often come from the community in which they work; this can interfere with confidentiality issues (Freschi, 2002). It is crucial to provide para-educators with guidelines for keeping information about students confidential by understanding the privacy rights of all students, based on the Federal Educational Rights and Privacy Act (FERPA), maintaining the highest ethical standards (French, 2002). Without basic knowledge of these skill areas and the para-educators ability to implement these skills, untrained para-educators run the risk of undoing progress for a student.

The Individuals with Disabilities Education Act of 2004 and the No Child Left behind Act of 2001(MA DESE 2004) (MA DESE, 2003) clearly identifies that a para-educator who provides instructional support must work under the direct supervision of a highly qualified teacher. The teacher is expected to prepare lessons and plan instructional activities for the para-educator to carryout, with para-educators working in close and frequent proximity with the teacher. The teacher is responsible for assessing the progress of the students with whom the para-educators work. Crawford (2005) recommends that teachers provide ongoing coaching, frequent feedback, clear expectations, and time to listen to para-educator’s concerns.
To measure the effectiveness of para-educators in early childhood special education programs, the U.S. Office of Special Education Programs (SPeNSE, 2002) sponsored a qualitative national survey of administrators, teachers, and paraprofessionals across six regional resource centers. This study determined that special educators spent more time on paperwork than communicating with parents, supervising para-educators, and attending IEP meetings combined. As a result, para-educators were inadequately supervised and trained to meet the needs of students in inclusion early childhood settings.

According to the Study of Personnel Needs in Special Education (SPeNSE, 2002) para-educators received one and one-half hours per week of supervision by special educators. Fifty-eight percent of the educators had no professional development training in the supervision of para-educators (2002). This study identifies inadequate teacher pre-service training that contributed to a lack of supervision and training of support staff.

The impact of first year early childhood special education teachers working with para-educators was measured in Appl’s (2006) in-depth qualitative study. Para-educator issues identified by new teachers were consistent with those in the larger SPeNSE study (2002). Lack of para-educators formal education in child development, difficulty developing professional behaviors and work ethics, and differing views on parenting and early childhood education were persistent issues (Appl, 2006). According to Ghere and York-Barr (2007) special education teachers preferred almost universally to leave a position unfilled rather than hire a person who was not viewed as a good fit.

According to Chopra, Sandoval-Lucero, and French (2011) a more effective method of supervising para-educators would be to design individualized job descriptions based on input
from the supervising teacher and para-educator that builds on their interests, strengths and abilities. This one practice could contribute to increases in job satisfaction, which may contribute to retention of para-educators. Long term employment would give them time and opportunities to develop competencies that contribute to their career development, whether they remain as para-educators or move into teaching positions. Several states have incorporated a career ladder approach (Frith & Lindsey, 2001). For example, in Michigan aides are promoted to instructional para-educators after two years of classroom experience. In Missouri a minimal number of clock hours are required for job entry level, but college courses are needed for job advancement.

**Autism**

Autism, PDD-NOS, and Asperger’s Syndrome are three conditions referred to as autism spectrum disorder; in the DSM-V, to be released in May 2013, they will all be under the diagnosis of autism (Matson, Turek, Turygin, Beighley and Rieske, 2012). These disorders are neurodevelopmental in origin and symptoms are evident early in life. According to the DSM-IV (1996) autism is a triad disorder of communication, social skills and rituals and stereotypic habits. In communication it is manifested by delay or lack of development of spoken language in the absence of any attempt to compensate through alternative modes of communication. For those with adequate speech, it may manifest itself as the inability to initiate or sustain a conversation with others and/or stereotypic and repetitive use of language (1994). Challenging behaviors are also a common component of autism spectrum disorder (Matson, Turek, Turygin, Beighley and Rieske, 2012).

Research has also documented the presence of executive functioning deficits in ASD (Delmolino & Harris, 2012). These deficits may impede the general problem solving and
organizational skills necessary to be successful and organized in school. Based on the diagnostic criteria, every person on the autism spectrum needs a great deal of support learning social skills. Instruction in these skills should begin at an early age and continue throughout the educational experience, often into adulthood. Research suggests that an eclectic approach to intervention for children with autism is less effective than a single, intensive scientifically sound intervention in terms of improving cognition, language, and adaptive behavior (Koegel, Robinson, & Koegel, 2009). Children with autism often have difficulties with generalization and spontaneity. A number of research studies have shown that naturalistic interventions result in greater generalization.

The Use of Applied Behavioral Analysis

Early intensive behavioral intervention based on applied behavior analysis (ABA) has been identified as the treatment of choice for children with autism (Thomson, Martin, Arnal, Fazzio, & Yu, 2009). Although the initial outcome of intensive behavioral intervention programs by Lovaas have been criticized on methodological grounds and although outcomes are highly variable, the systematic delivery of ABA techniques for approximately thirty-five hours per week for up to two to three years has resulted in dramatic gains in children with autism in cognitive, social and communication skills. Applied behavioral Analysis is the design, use and evaluation of environmental modifications and interventions to produce socially significant improvement in behavior (Koegel & Schreibman, 2009). ABA uses antecedent stimuli and consequences based upon the findings of functional analysis and are based on the belief that an individual’s behavior is determined by past and current environmental events in conjunction with such factors as genetics. ABA has been used to develop interventions for students with ASD for over fifty years.
Errorless teaching procedures can function as one or more motivating operations, maintaining the frequency of responses on the part of learners which in turn, results in access to available reinforcers. Errorless teaching reduces the frequency of responses which result in access to escape or avoidance as reinforcers (McGreevy, 2002). Typically prompts are provided to assure that the student is engaging in the behavior being targeted. Once the student engages in the targeted behavior, prompts are faded systematically so that the correct behavior is made with few or no errors, provided through discrete trial instruction (Boutot & Tincani, 2009).

**Discrete Trial Instruction**

Early intensive behavioral intervention, based on applied behavioral analysis, for students with autism is a specialized field characterized by systematic application of behavioral principles which includes reinforcement and discrimination learning, instructional methods and curriculum development (Boutot & Tincani, 2009). Discrete trial instruction is an effective instructional method with early intensive behavioral intervention, which emphasizes clear instruction and incremental teaching. Discrete trial teaching is a specific methodology used to maximize learning for all ages and populations and is considered the treatment of choice for children with autism. (Leaf & McEachlin, 1999). It is a teaching process used to develop cognitive, communication, play, social pragmatic skills, and self-help skills that ensure learning is an active process. According to Thompson, Martin, Arnal, Fazzio, & Yu (2009) discrete trial instruction format is effectively used to secure a child’s attention to present instruction, to prompt, to provide positive consequences following a correct response, and for error correction following an incorrect response.
Each trial must have a distinct beginning, consisting of an antecedent cue or discriminative stimulus (SD), which is often verbal instruction (Leaf & McEachlin, 1999). The instructor may prompt the child in order to minimize errors and then waits for the child’s response. The instructor then delivers an appropriate consequence, typically verbal praise or a small reinforcer for correct behavior. In the event of an incorrect response, the instructor gives a negative response to indicate an incorrect response. The instructor provides a short pause, 1-5 seconds for an inter-trial interval, before presenting the antecedent for the next trial.

In the beginning stages of teaching or if the student is having difficulty with a certain concept, instruction should be simple and concise (Leaf & McEachin, 1999). It is important to know in advance what response and what level of quality to expect in order for the student to earn reinforcement. Discrete trial training is made up of a series of small units of instruction. The goal is for the overall quality of responses to improve over time. This is done by gradually adjusting the requirement for earning reinforcement. Considering that a large number of instructors, which includes parents, teachers, para-educators and tutors are typically needed to provide DTT training sessions in programs for children with autism, there is a need to develop efficient, effective and economical training procedures (Thompson, Martin, Arnal, Fazzio, & Yu, 2009). In their review of twenty training approaches used to teach discrete trial interventions, the most common training methods include written instruction, lectures, videotaped modeling, verbal feedback, and role-playing.

LeBlanc, Ricciardi and Luiselli (2005) evaluated performance feedback intervention as a training strategy to improve discrete trial instruction of children with autism by para-educator staff. Following sessions, staff received verbal praise from a trainer for skills displayed correctly, and clarification and direction was contingent on incorrect performance. During feedback
interactions the trainer answered any questions posed by the para-educator. However, the trainer did not model, role-play, or practice correct performance of skills. Para-educators rapidly acquired the discrete trial instructional skills with this coaching model. Improved instruction was maintained without additional performance feedback.

**Models for working with students with autism: Early Intervention**

The National Research Council in 2001 and in subsequent research studies identified the effectiveness of early intervention in targeting core social communication skills, which directly impacts language outcomes in students with autism (Wetherby, 2006). Their research indicates that the age of entry of intervention is predictive of outcome. Fifty percent of children with ASD remain nonverbal by middle childhood without early intervention services. Implementation of early-specialized programs at the elementary level should prepare students to transition to middle school and post secondary experiences. Successful early intervention for preschool students diagnosed with Autism Spectrum Disorder has proven to be a progressive educational approach, which includes the fostering of adequate time for repetition of concepts, development of language, social interactions, and appropriate behaviors (2006).

In the last two decades, emphasis has been placed in providing ABA methods as part of early intervention behavioral interventions (EIBI) to children two to three years of age, for twenty to forty hours per week (Matson, Turek, Turygin, Beighley & Rieske, 2012). Through increased public awareness and earlier medical detection, treatment programs should begin immediately after autism is diagnosed. Itzchack and Zachor (2009) have demonstrated that intellectual disabilities and adaptive skills for children with autism were major risk factors and predictors of poor outcomes for EIBI. They determined (2009) that children who were thirty
months of age or younger were the best responders. Perry, Cummings, Geir, Freeman, Hughes and Managhan (2011) found that higher intellectual functioning and younger age were precipitators of positive outcomes; these authors determined that the longer the child was in treatment the better the outcome. When students enter formal school programs, it is critical to establish joint attention and to address major interfering behaviors such as non-compliance, aggression and self-injury, Matson, Turek, Turygin, Beighley and Rieske, (2012) state that marked improvements in IQ test scores are often a result of the development of increased compliance and attention.

**Inclusion**

Inclusion can be conceptualized as a philosophical approach or a set of specific practices to education for students with disabilities in general education settings (Fiorello, Boyer, and Thompson, 2010). Inclusion incorporates such principles as shared responsibility among school staff for the education of every child regardless of disability status. All students are educated in their neighborhood schools and assigned to classrooms based on their age or grade level. Inclusion follows the principle of natural proportions so that the proportion of students with disabilities in any given classroom is representative of the community. Inclusion is implemented across all grade levels and all students should share the same schedule and activities, including co-curricular activities.

The American with Disabilities Act (ADA) of 1990 requires that all public schools provide equal access to disabled and non-disabled persons (Fiorello, Boyer, & Thompson, 2010). The ADA, as well as Section 504 of the Rehabilitation Act of 1973 provide a baseline of reasonable accommodations. However, students with disabilities have additional rights under the
2007 Individuals with Disabilities Education Improvement Act (IDEIA). IDEIA, the most recent reauthorization of special education law, emphasizes that consideration of access to the general education curriculum and placement with general education peers should be a major consideration in developing the Individualized Education plan. The least restrictive environment (LRE) specifies that educational goals can be achieved satisfactorily by accessing a full continuum of services that include modifications and supports necessary to meet objectives in the general education setting. According to Fiorello, Boyer, and Thompson (2010), should attainment of goals and objectives not be achieved satisfactorily in the general education setting with supplementary aids and services, more restrictive placements must be available.

During the past ten years there has been a dramatic increase in the number of children with ASD who participate in general education classrooms (Finke, McNaughton, and Drager, 2009). Outcomes for students with moderate to severe disabilities in inclusion programs are generally strong in both academic and social domains. Students have more opportunities for social interaction, although structured teaching of social skills may be required. According to Finke, McNaughton, and Drager (2009) students also have more time engaging in academics. Inclusion programs can be beneficial for non-disabled peers, especially when curriculum changes, modifications, and supports can benefit typical peers who are low achievers (Fiorello, Boyer, & Thompson, 2010).

While there are clearly benefits to the inclusion of students with autism in general education classrooms, a number of challenges have been identified in the literature. As students with disabilities are being placed in general education classes, the literature has repeatedly identified the need for the clarification of the roles of para-educators (Giangreco, Broer, & Edelman, 2001). The complex and varied presentations of ASD require specialized training and
expertise (Delmolino & Harris, 2012). One-time training or historical knowledge and experience are not sufficient for a staff member to remain current.

According to Giangreco (2010), one-to one para-educator support in inclusive settings should be considered among the most restrictive support options. Over-reliance on para-educators who are often inadequately supervised and trained is conceptually flawed. Para-educators are often inappropriately left to fend for themselves, functioning as the primary teacher for students with disabilities. In a study that included data from 153 special education para-educators, nearly 70% agreed that they make curricular and instructional decisions without always having the oversight from a teacher or special educator. The para-educator is expected to provide the most technical kind of program in a school with minimal or no training, and without any educator involvement (Giangreco, Broer, & Edelman, 2001).

According to Delmolino & Harris (2012) the commitment to training must be ongoing and reflect the integration of new techniques and strategies. These authors (2012) recommend that schools seek consultation and training services specific to autism. This will better meet the needs of training para-educators to address adaptations required to support inclusion, hire experienced staff, and provide quality supervision to staff. If an included student with disruptive behaviors does not have a trained para-educator who can carry out an effective behavior management plan, this can be harmful to classmates. In addition, if too many students with disabilities are included in a single class in the absence of trained support staff, the effects on non-disabled peers can be negative.

Providing para-educator support for a student with disabilities may seem like an obvious way to facilitate inclusion in the general education class (Giangreco, 2005). Para-educator
support can ensure that students with disabilities receive an appropriate level of attention.

Although schools provide para-educator support with the belief that it will help students, little evidence suggests that students do as well or better academically or socially when they are taught by para-educators. General education teachers often assume that para-educators are specially trained to work with students with disabilities, who are usually the student with the greatest learning challenges in the classroom. A para-educator would need to understand autism in order to anticipate how the pedagogy might need to be adapted. For example, the delivery of the strategy would have to take into account a range of autism specific considerations such as name cueing, seating location, sensory factors, stress triggers, obsessional behavior, etc. (Ravet, 2011). The research indicates that when para-educators are not trained to use the autism lens within the general education environment, students will not only fail to meet their potential but will experience isolation, frustration, crisis and exclusion.

Even though federal legislation requires those working, for example, in Title 1 environments be more educated, most have far less education, skill or experience than a certified teacher (Crawford, 2005). Many highly qualified general education teachers are uncomfortable teaching students with disabilities because of their own lack of training. Over-dependence on para-educators can adversely affect the social and academic growth of students with disabilities. Team members can minimize the unintended undesirable effects of para-educator support by seating a student with disabilities among his classmates, encouraging ongoing access to both teacher and peers, and by avoiding unnecessarily close proximity to the para-educator. A classroom culture that encourages peer-to-peer support through such strategies as cooperative learning groups and peer tutoring is a means of dealing with undesirable effects of para-educators.
Special education law currently encourages the use of a tiered system of supports, including differentiated instruction that can be applied across varying levels of abilities and needs (Fiorello, Boyer, & Thompson, 2010). This supports the principle of educating all learners in their home schools and age/grade level classrooms. In the second tier, targeted interventions are provided for students requiring more instruction or adaptation to achieve learning goals. This can include group work involving consultation or direct student support. The third tier involves further increasing the number and intensity of supports, rather than removal from the general education setting.

Sub-Separate Classrooms and Separate Schools

According to the Department of Education (2007) approximately 23% of students receive their education primarily in separate special education settings (Causton-Thoharis, Theoharis, Orsati, & Cosier, 2011). The sub-separate class includes students with disabilities who are educated in a general education class for less than 40% of the school day (McLeskey, Landers, Williamson & Hoppey, 2010). Separate schools include students who are educated in public or private separate facilities, homebound or hospital programs. Self-contained classrooms are typically smaller settings and contain fewer students to enhance support for students with special needs. These students are more likely to be diagnosed with autism, cognitive disability, and/or multiple disabilities.

According to Landrum, Tankersley & Kauffman (2003) smaller class size in self-contained classrooms will result in more individualized instruction; self-contained classes can provide highly structured and controlled environments that students with behaviors require. Self-contained settings not only offer a controlled and structured environment that students with
disabilities require, they also offer an individually designed teaching and curriculum that helps student to learn self-control, and attain academic and social competence Causton-Theoharis, Theoharis, Orsatti, & Coser (2001). According to Mock and Kauffman (2002) special training is required in order to use special materials and different teaching strategies. This is critical since in some instances, students with disabilities and their one-to-one para-educator function autonomously (Giangreco, Broer, & Edelman, 2001). Para-educator training needs to include such factors as the pace of instruction, error correction, and target responses to determine how demanding any given instruction format is for a particular child (Sigafoos, O’Reilly, Hui-Ma, Edrisinha, Cannella & Lancioni, 2006).

**Bloom’s Taxonomy: The Learning Process**

Bloom’s taxonomy is an instrument that can help para-educators broaden their understanding of how students learn (Eber & Parker, 2007). Bloom’s taxonomy provides a well-accepted pedagogical framework for classifying numerous educational objectives, assessment design and curriculum development (Popescu-Mitroi, 2010). The cognitive and social domains are broken down using a task analysis format, progressing from the simplest to the most complex levels of understanding. Mastery of units of instruction must take place before progressing to the next unit (Sorrell, 1995). This form of mastery learning uses differentiated and individualized instruction, progress monitoring, feedback and corrective procedures (Booker 2008). The mastery learning method is compatible with applied behavioral analysis and discrete trial learning format; both are tools that have been used in the education of students with ASD.

The lowest level of the taxonomy, which is basic knowledge, sets the stage for higher levels of learning (Booker, 2008). Each level then builds on the previous levels and is dependent
on them. Learning process methodology describes growth and development in learning and internalizing concepts (Bobrowski, 2009). Learning skills are embedded in everyday behavior and can be consciously improved and refined through guidance by a coach or para-educator (Apple, 2009). Learning skills are developed through practice and feedback and can be referenced through a domain where it is most often applied (Browboski, 2009). Skills related to thinking processes are most commonly found in the cognitive domain, while those related to interpersonal processes are found in the social domain. Language development runs across all domains since it is essential for conscious development of any learning skill in any domain (Anderson & Krathwohl, 2001).

According to Ravel (2006) students with ASD have individual needs like other children, and have needs that are in common with all learners. Para-educators, who understand typical learning skills and processes, referencing the taxonomy, may be better equipped to address the degree of distortion in development that they are dealing with when confronting a child on the autism spectrum.

**The Use of Coaching**

Coaching is gaining attention as a promising professional development approach in special education, as it provides an optimal framework for sharing knowledge, skills, and beliefs necessary to maintain teacher quality and student achievement (Wilson, Dykstra, Watson, Boyd, & Crais, 2012). Coaching is a means of assuring the appropriate implementation of protocols for students with ASD. The coaching model emphasizes individual stages of descriptive instruction, modeling, practice, reflection and feedback. Coaching utilizes a partnership approach that emphasizes principles of equality, dialogue, choice, and constructive and formative feedback.
Coaching is a form of assessment designed to benefit the assessor and assessee (Cordon, 2009). The assessor is given the opportunity to view the performance of classroom staff to examine the effectiveness of different teaching and learning strategies and to formulate methods of best practices within the classroom. A debriefing meeting should take place immediately after the classroom session is done, where feedback is given interactively, not as a written report. Observations should include evidence of strengths, recommendations, and identification of missed opportunities and areas for improvement, as opposed to things that are done incorrectly.

According to Joyce and Shower’s study (1996) which measured the effectiveness of demonstration or modeling when used as part of the para-educator training session, 85% of para-educators understand the concept or skill that is being proposed. However, only 18% are able to demonstrate the skill and only 10% are able to generalize and apply concepts or skills on the job. When on the job coaching is added subsequent to the training session, about 90% of the para-educators are able to understand the concept, demonstrate and apply the skill or concept on the job. Without coaching there is little assurance that training efforts will pay off in terms of student achievement or improved performance of para-educators.

In working with this broader view of coaching as a means to increase classroom implementation of training, Joyce and Shower (1996) organized entire faculties into peer coaching teams. The study of teaching and curriculum was their focus in a context of training, implementation and school improvement. Adding coaching study teams to staff development makes possible collaborative planning, decision-making, and data collection that are essential to organizational change efforts.
As many para-educators begin their jobs with no formal training and continue to work with limited knowledge skill and support, para-educators and others have requested a working training model (Katsiyannis, 2000). According to Koegel, Robinson & Koegel (2009) although numerous training tools are available for use, in vivo performance feedback within classroom routines appears to be highly effective, as compared to traditional in-service workshops and lectures that are insufficient by themselves. Training techniques such as peer coaching permit daily and weekly feedback and technical assistance. On the spot suggestions and strategies can identified as successful in improving skills in social facilitation, activity adaptation, and implementation of peer-based instruction of IEP goals. Koegel, Robinson and Koegel (2009) found that the use of real time training techniques enabled students with disabilities to experience increases in social interaction, as they were more engaged in teaching episodes, and progressed toward IEP goals.

Even though the use of para-educators in the education of young children with ASD is common practice, research on effective training in the use of applied behavioral analysis and discrete trial procedures is scarce. According to Hall, Grundon, Pope, and Romero (2009) when behavioral strategies training was presented during workshops as part of professional development, there was either no transfer or generalization to the classroom, or their use of skills decreased over time. In their study these authors (2009) determined that when performance feedback was provided, para-educator’s use of strategies increased. Stein (1975) suggests that it may be unethical for behavior analysts to provide training through workshops alone.

Hall, Grundon, Pope, & Romero (2009) found three elements to be essential when training para-educators: 1) training needs to be practical, 2) staff should find the training valuable, and 3) long-term ongoing support for training skills is necessary for maintenance.
Ongoing support in the form of on-site coaching is essential for effective implementation of instructional strategies. A critical component of effective coaching or supervision is the use of performance feedback. Feedback provides the opportunity to administer positive reinforcement, inform para-educators about changes needed and provide motivation to improve their performance. Hall et al. (2009) determined that modeling and role-playing with a supervising teacher increases skills in effective prompting during discrete trial training and increases incidental teaching, while enabling para-educators to feel more connected as a member of the classroom team.

Summary

In summary, para-educators have been helping classroom teachers since the 1940’s and were initially assigned to complete clerical tasks. Their role in special education began to increase in the 1960’s as a way of providing a career path for the economically disadvantaged and to address teacher shortages. With the passage of PL 94-142 para-educator roles were expanded with the provision of FAPE and the stipulation of appropriate supervision and training. While both the number of para-educators and their instructional role has increased over the decades, the number of students with ASD in community settings has also increased. Students with autism have unique cognitive, social, communicative and behavioral challenges and benefit from the use of applied behavioral analysis and discrete trial training. ABA and discrete trials require consistency in their implementation across staff members. It is therefore necessary to assure that para-educators are trained and can work with students in a variety of settings, determined by student ability levels. The goal of early intervention is to provide services to ASD students as soon as a diagnosis is made. Sub-separate classrooms and schools are designed to
meet the needs of more disabled students. Inclusion is used in all settings and is the goal for fully integrating ASD students with their peers.

In accordance with provisions under NCLB, minimum employment requirements were identified for para-educators along with the need for training. The general consensus of such researchers as Liken (2003) identify that one hour of professional development workshops do not provide enough training time, within a natural setting, using real life experiences. According to such researchers as Hall, Grundon, Pope & Romero (2010) the coaching model, which provides feedback and modeling in real time, is a preferred method of training.

Para-educators need to understand how autism impacts learning and communication. Applied behavioral analysis, discrete trial training and errorless teaching have been identified as the most effective approaches to teaching ASD students, which make staff training critical for student success. Discrete trials consist of a series of tasks that are presented in small sequential steps that align with the hierarchy of developmental learning skills represented as part of the cognitive, affective and social domains of Bloom’s taxonomy.

Conclusion

While reviewing the literature, several common themes emerged. The number of para-educators in special education classrooms has increased due to the recent trend of placing students with ASD in community schools (Webster, Blanchford, Bassett, Brown, Martin,& Russell, 2010). Although IDEA (MA. DESE, 2004) requires para-educator training, many states, including Massachusetts face the need to develop a comprehensive system of personnel training to meet Part B of IDEA regulations including establishing policies, personnel standards and training programs to ensure para-educators are trained (Killoran, Templeman, Udell, 2001).
Para-educator preparation training remains one of the weakest elements of effective programming for ASD students, especially for those students who are low functioning, exhibit challenging and unique behaviors and require specific behavioral interventions (Schuermann, Webber, Boutot, Goodwin, 2003).

The role of para-educators is not clearly defined, often as a result of a lack of understanding of necessary attributes needed on the part of administrators, to be successful in this role (Dillon & Ebmeier, 2009). For students spending 80% or more of their time with para-educators, who make the majority of curricular and instructional decisions, this creates a double standard of educational services that would be unacceptable for the average student. Clarification of their role and assignment along with ongoing training and supervision is therefore imperative (Giangreco, 2005). The majority of para-educators begin their role with no prior experience working with students with ASD and receive minimal or no training (Symmes & Humphrey, 2011). Lack of formal education in child development and on the job supervision is a common issue associated with para-educators working within early childhood settings. (Spense, 2002). Without adequate training, para-educators can have a negative impact on students (Webster, et. al, 2010).

The Council for Exceptional Children and the National Resource Center (2003) along with several researchers has identified standards and competencies for preparation of para-educators working with special needs students. CEC established fifteen knowledge standards for training para-educators that address educational terminology, communication characteristics of ASD, rationale for assessment and evaluation, instruction, behavior, and professional ethics (Carter, O’Rourke, Sisco, & Pelsue, 2010). According to Symmes and Humphrey (2011) prior knowledge of autism is critical in order to effectively meet the needs of these students.
Schuermann, Webber, Boutot, & Goodwin (2003) identify training needs that include discrete trial training, the use of reinforcement and motivators, curriculum, social skills and communication, and positive behavioral intervention strategies and supports. Katsiyannis, Hodge, & Landford (2000) define areas of training in instructional strategies, task analysis and prompting.

Due to the expanding use of para-educators within special education the need for effective training and supervision models is pressing (Cater, O’Rourke, Sisco, & Pelsue, 2010). Utilizing para-educators without adequate training and supervision is not only educationally problematic; it may constitute a violation of the free and appropriate public education (FAPE) provisions of IDEA (Giangreco, Doyle, Suter, 2012). One of the most promising approaches for equipping para-educators includes on-site coaching and assistance using consultative models. This study implemented this approach by providing clear expectations, frequent direction and feedback from supervising staff, adequate time to meet and plan together while listening to para-educator concerns (Crawford, 2005).
Chapter Three: Research Design

Methodology

This section explains the procedures used to collect data during para-educator training to investigate how para-educators perceive and respond to an individual training program, designed to assist them in working with students on the autism spectrum. The following sections will be explained in more detail: Research Design, Research Tradition, Participants, Recruitment and Access, Protection of Human Subjects, Data Collection, Data Storage, Data Analysis and Validity/Trustworthiness.

The problem of practice under investigation is that para-educators are being hired to work with students with autism spectrum disorder without any training. The purpose of this qualitative study is to gain an understanding of the benefits of implementing individual training for para-educators to improve instructional support to students on the autism spectrum. Based on the experiences of para-educators, that is central to this research, Creswell (2009) identifies several compelling reasons to engage in qualitative research:

1. Researchers have face-to-face interactions over time in a natural setting.

2. The nature of the research question often responds to a how or what.

3. Researchers collect data themselves through examining documents, observing behavior, or interviewing participants.

4. Use of rich thick descriptions to convey findings, using a narrative design.

5. The researcher can spend prolonged time in the field to develop an in-depth understanding of the phenomenon.

6. Multiple sources of data are collected that include interviews, observations and documents that are organized into categories or themes.
7. Participants’ meaning: the researcher keeps a focus on learning the meaning that the participants hold about the problem or issue (Creswell, 2009).

The purpose of this qualitative study is to gain an understanding of the benefits of implementing individual training for para-educators to improve instructional support for students on the autism spectrum. Using the interpretivist paradigm, the design of this study consisted of an in-depth, interaction with people at one school site, with the researcher functioning as the main research instrument, by observing, questioning and interacting with participants (Glesne, 1999).

**Research Design**

According to Merriam (1999), case studies stand apart from other qualitative research in that they consist of intensive descriptions and analyses of a bounded system. The bounded system is constrained by time, place and events. The context of the assertion involves establishing the case within its physical, historical or social setting. Issues related to para-educator training were examined via an instrumental case study to illustrate the problems (Creswell, 2009).

The research design will consist of a multiple-case study with replication (Yin, 2003). Although case study methodology has typically been criticized as being an uncontrolled and subjective description of a single case, Yin (2003) outlines a number of methodological factors that facilitate the drawing of valid inferences from case studies. A controlled case study is characterized by the use of objective data, repeated measurement of the dependent variable, manipulation of the independent variable, replication across subjects/cases, monitoring of treatment integrity, the maintenance of a formal design structure and social validation of treatment effects (2003). Multiple-case designs are considered advantageous over single-case
designs, as the evidence from multiple cases is considered more compelling, and therefore, the overall study is regarded as being more significant.

**Research Tradition**

Case study methodology allowed the researcher to explore para-educator experiences using an individualized coaching and training program to identify the training themes that para-educators find important. Creswell’s (2009) criteria for the use of qualitative research, identifies the use of open-ended questions, interviews and observation data, in search of common themes, patterns and interpretations. When formulating this study’s research questions, the use of case study design was the preferred research method to observe events within their real life context, while collecting data from people and situations in their everyday situations (Yin, 2009). The use of *how questions* are more explanatory and align with the case study strategy of inquiry that allows the researcher to explore an issue in-depth, with one or more activities (Creswell, 2009). A focus group or group interview was used to facilitate interaction within the group about core issues related to work requirements, training, and personal concerns (Stake, 2010).

Case studies are bound by time and activity, using a variety of data collection procedures over a sustained period of time (Creswell, 2009). The coaching of para-educators took place during a student’s discrete trial training, a time when para-educators worked with individual students on their specific educational goals while they collected data to document student performance. The training workshops were offered during three district-wide professional development sessions.

Case studies use prose and literary techniques to describe and analyze situations (Merriam, 1998). The case study relies on direct observation of the events being studied as well
as interviews or guided conversations, essential sources of case study information. Additional sources of detailed information were secured from observations, field notes, post video review artifacts, and journals (Yin, 2009). The case study can bring about the discovery of new meaning, confirm what is known, or lead to rethinking of phenomena being studied when previously unknown relationships and variables emerge (Merriam, 1998). The goal of this research study was to offer insights into current standards of para-educator training and ways that can improve para-educator job performance, from the perceived reality and viewpoint of those inside the case study rather than those external to it (Yin, 2009).

**Participants:**

Selecting the case required that the researcher establish a rationale for the specific sampling strategy and gathering information strategies (Merriam, 1998). The population of interest consisted of special needs pare-educators assigned to working with elementary level students with ASD, who spent at least 80% of their time providing individualized instructional assistance within a segregated and/or integrated classroom. This qualitative research used purposive sampling as opposed to random sampling (Stake, 2006). Subjects were selected based on their assignment to work with students with ASD and were unknown to the researcher. Because the emphasis was on quality rather than quantity, the objective was to gain the most information on the topic of para-educator training needs, rather than on maximizing numbers of participants.

Prior to this study para-educators were approached by the special education director, building principal and supervising classroom teacher trained in ABA, who were introduced to the study and selected participants for this investigation (See Appendix A). Each para-educator voluntarily agreed to participate in the study but was not obligated to participate, as it was
entirely voluntary. Para-educators who expressed interest in participating in this study read, and were asked to sign, an *Informed Consent Form* provided by the researcher. The *Informed Consent Form* (see Appendix F) explained in detail why the para-educator chose to participate in the study and what the study entailed.

The para-educators who volunteered for this study had limited or no experience in working with students on the autism spectrum and applied behavioral analysis. They were asked to describe their previous training experiences and to include how many workshops they had attended. Because students with autism are not easy to teach, particularly those who are low functioning and exhibit deficits in cognition, communication, social pragmatics, and behavioral challenges, training support included multiple approaches to enhance para-educator preparation in working with children on the autism spectrum. (Schuermann & Boutot, 2003)

Training addressed the learning process through the application of Bloom’s Taxonomy by analyzing two performance levels for learners that include the cognitive, and social domains (Apple, 2009). The use of Bloom’s Taxonomy has been shown to enhance student mastery of skills, concepts, and critical thinking using five graduated levels of learning that include learner knowledge, conceptual understanding, application, analysis, synthesis, and evaluation (Eber & Parker, 2007).
Training Protocol

*The Classification of Learning Skills*

Figure 1: Domains and Process Areas in The Classification of Learning Skills (from 2.3.3. Classification of Learning Skills by Daniel K. Apple, Stephen W. Beyerlein, Cy Leise, and Marie Baehr, 2009).

For the purpose of this study, the cognitive and social domains were introduced, as they represent skill areas that are most challenging for students with ASD. The majority of the students working with para-educators, as part of this research study, have been identified with skill levels that are at the bottom of the domain pyramids. However, para-educators were required to distinguish requisite skills required for mastery within a student’s current level of performance, in addition to the skills needed to reach more complex objectives (Myrvaagnes, 2009). To accomplish this, it was important for para-educators to become familiar with the hierarchy of processes and skills prerequisite to the development of more complex concepts for student learning.
The Cognitive Domain

Each domain identifies how students learn and acquire skills. There are five distinct levels that apply to all learning skills in the cognitive domain (Davis & Beyerlein, 2009). The processes are relevant to this study as they enabled para-educators to identify how students process information, construct understanding through analysis, develop reasoning ability, and then generalize and apply their knowledge, through such tasks as problem solving. The hierarchy of processes and skills are defined by complexity, moving from the simplest to the most challenging skill level (Eber & Parker, 2007); the classification of skill by complexity is comparable to the use of task analysis for discrete trial training.

Figure 2: The Cognitive Domain (from Denny Davis, Stephen W. Beyerlein, Cy Leise and Daniel K. Apple, 2009)

Within the cognitive domain para-educators gained a better understanding of each students’ level of ability and current level of performance, enabling realistic expectations for movement to their next developmental level.
The learning processes in the social domain include a hierarchy of complexity from the most basic, foundation skills of communicating to the more complex skills involving interpersonal performance, teamwork and leadership (Leise, Beyerlein, & Apple, 2009). Communication refers to the ability to listen, focus and attend to read body language and gather information from non-verbal cues. Autism Spectrum disorder is characterized as a social, communication impairment, where the inability to form normal social relationships and communicate with others are predominant factors (Quill, 1995). Some of the benefits to learning about the social domain for para-educators included increasing their awareness of these necessary student skills, needed for the development of communication and social interaction.

Summary

The learning domains consisted of a systematic classification of the processes of thinking and learning using paced instruction for students that permits learning objectives to be organized into small sequentially organized units. (Forehand, 2012). The theoretical framework of the learning domains using facilitated analysis of learning objectives, which enhanced para-educator
awareness of performance-based learning and levels of mastery in learning. A cumulative hierarchical framework requires achievement of the prior skill or ability before the next more complex one (Bobrowski, 2009). This was introduced to assure that performance expectations for students remain realistic within each learning domain. The structure of the taxonomy provided para-educators with a clear visual representation of the alignment between standards, educational goals, objectives and activities. The taxonomy was introduced to help Para-educators gain a greater understanding of applied behavioral analysis, which follows a similar approach to skill acquisition through implementation of a hierarchy of learning skills.

Training Programs

The three pre-selected training programs consisting of videos, discussion and practice questions, worksheets, and role-play were used to help to illustrate the use of applied behavioral analysis, prompting, errorless teaching, reinforcement, behavior management, task analysis, discrete trials, and data collection. The training began with a three hour professional development training to introduce basic ABA and its terminology, trouble shooting techniques, and sample writing goals. This provided the visual framework needed to begin and sustain each student’s individualized program. Maximum Potential for Kids (2011) was one video training program used, consisting of eight individual modules that provided an overview of autism, the use of ABA, reinforcement, behavior management, discrete trial training, natural environment teaching, data collection, and social skills programming. Para-educators were encouraged to discuss any challenges they were having with their students and to apply the concepts introduced during the workshop.
As part of the second three hour professional development training program, *Behavioral Frontiers Applied Behavior Analysis Program with an Autism Specialization* (2011), a second video training was used to provide additional perspectives on autism, ABA principles, ABA methods that include discrete trial training, verbal behavior, naturalistic teaching strategies, functional assessment, data collection, and ethical considerations. Each video clip was approximately fifteen minutes long and had accompanying review questions that encouraged para-educator dialogue and participation, on a strictly voluntary basis. Review questions and answers at the end of each unit addressed discrete trial data collection, task analysis, antecedent-behavior-consequence charting, token charts, and the use of verbal praise, again, with participation strictly voluntary. Visual samples of the Classification of learning skills (Apple, Beyerlein, & Leise, 2009) were provided to discuss key processes and learning skills. Using the two-core deficit areas for children with autism, para-educators were introduced to the Cognitive and Social Domains, based on Bloom’s Taxonomy (Popescu-Mitroi, 2010) in order to understand the relationships between language, social, and cognitive skill development.

The third three-hour training included the viewing of *Bridges ABA* (2009), about a preschool special needs program that is a full-day integrated program for students on the spectrum that uses ABA protocols to address foundation cognitive and behavioral goals. Para-educators compared the curriculum and objectives of the *Bridges Program* (2009) with their own programs. The Para Pro Assessment (ETS, 2009) was discussed with sample tests to explore and review common skill set requirements that para-educators are expected to master. Para-educators became familiar with the standards of performance and responsibilities in a manner consistent with laws and ethical policies and protocols for school and community according to those published in the CEC Para-educator Standards Workbook (2004). The researcher provided
participant questionnaires to encourage feedback from para-educators about the first two training programs. (See Appendix D). During the last training, para-educators were provided with a check list consisting of all of the topics and strategies that were presented during all of the trainings and were asked to identify those that they found most helpful to them.

Coaching and modeling were addressed to assist in the implementation of protocols during formal natural environmental teaching (Maximum Potential, 2011). Each para-educator scheduled a minimum of two visits per week for the researcher to provide feedback, suggestions, and respond to any questions, as they implemented the protocols presented in the trainings. One classroom teacher with experience in using ABA with students with ASD provided weekly coaching to all four para-educators. Each para-educator received performance assessment feedback following each individual coaching session.

Recruitment and Access

This study was conducted at a public elementary school in Queens Massachusetts henceforth referred to as the Mayflower School. An initial meeting with the Special Education Director took place to review the training program and to determine the needs of the support staff. The Mayflower School was chosen as a research site because of its close proximity to the researcher’s place of employment, at a privately funded clinical day school. The Mayflower is a typical urban school with a multicultural population. It has a significant number of classes that include students diagnosed with ASD and those who are suspected of having it but are not diagnosis.

The subject population includes para-educators who are employed by the town. Para-educators come from a variety of educational and ethnic backgrounds, working with students at
the elementary level who are diagnosed with autism spectrum disorder. Approximately twenty-eight para-educators service the preschool and elementary school population, with two para-educators assigned to each class. During the initial meeting the special education director stated that the para-educators from pre-school through high school have been instructed to use ABA methods although they may not know terms applied to such activities as discrete trials or how to carry out tasks as directed by the classroom teacher. Para-educators were selected for voluntary participation with one classroom preschool teacher who had a background in ABA assigned to coach the selected para-educators in this study. These para-educators had received a minimal amount of prior training related to autism and applied behavior analysis.

Protection of Human Subjects

To protect all human subjects involved in this research study proper precautions were implemented with the goal of protecting each individual’s confidentiality. The researcher completed the *Informed Consent to Participate in Research Study*. (See Appendix F). This researcher filed an application with the Institutional Review Board at Northeastern University and written permission was secured from the superintendent, building principal, and special education director to conduct this study.

The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (U.S. Department of Health & Human Services) published *The Belmont Report*, which identified three fundamental ethical principles for human subject research; respect for persons, beneficence, and justice. The researcher made every effort to ensure that participants were comfortable and fully aware of the course and procedures of the study. Interviews were conducted in a private setting with all responses to questions on a voluntary basis. Participation
in a focus group or group interview was strictly voluntary. There were no physical, psychological, social or legal risks to participants. Para-educators who participated were referred to by first name only so that identification of personal information was kept confidential. Participants played an active role in the work and gave voluntary informed, signed consent in order to do so. Para-educators were assured that as participants they were involved in work from which other para-educators would benefit. (Refer to Appendix B).

Data Collection

Data collection and analysis is an ongoing process in a qualitative study (Merriam, 1998); analysis of data should be completed simultaneously with data collection. Qualitative research has been associated with many methods of data collection. Participant observation is regarded as the prototypical method associated with qualitative data collection (Bryman & Burgess, 1999). Stake (2010) refers to interpretive data as data that seems relevant on its own, while aggregative data only becomes relevant when mixed with other data.

Stake (2010) recommends an active form of researcher observation where the researcher joins in an activity, as an effective form of understanding the social context and what is happening from the participant’s point of view. This was accomplished in the present design through coaching para-educators within their natural work environment. This included the collection of field notes and analytic memos based on researcher observations of para-educators performing in their roles to teach individual skills, address student behaviors, use the prompt hierarchy and collect data. (Creswell, 2009). This also took place prior to coaching, when para-educators asked questions relating to protocols and received feedback.

Qualitative data collection included the use of descriptive questionnaires, interview notes, electronic journals postings, and transcribed tape-recorded sessions (Kemmis, 2010).
Initial interviews asked para-educators to explain why they chose their position, the requirements of their position, their strengths and weaknesses, and their experiences with the ASD population. The second half of the interviews addressed specific tasks related to working with students that included implementing behavioral plans, data collection, and modifying lessons. (See Appendix C).

The researcher used first person accounts, detailed interviews, and rich descriptions to report the research findings (Denzin & Lincoln, 2008). According to Bryman and Burgess (1999) photographs, videotapes and films constitute essential research evidence as well as being part of the repertoire of approaches for social investigation. The researcher took photographs of the study’s setting, and kept field notes of events that occurred and situations para-educators experience (with their permission) to review as a teaching tool.

A final interview was posed to participants as a means of eliciting how these para-educators viewed this type of training approach. (See Appendix E). Questions were generated by the feedback collected in a reflexivity journal, analytic memos, and coaching journal. A focus group at the end of the research study enlisted the voluntary participation of the supervising classroom teacher, para-educators. The purpose of the focus group was to obtain perceptions about the training through group interaction in a non-threatening environment. Key questions posed facilitated the exchange of anecdotes and commenting on each other’s experiences and points of view (Krueger, 2002).

In order to secure quotable material from interviewers, open-ended questions as well as questions specific to the study’s participants were used. When responses needed to be tallied, a semi-structured interview was being applied (Stake, 2010). Exhibit questions within the interview were used to encourage participants to thoughtfully engage in the research process
Questionnaires were administered to para-educators at the end of each professional development training to delineate training needs for the purpose of ascertaining the effectiveness of each presentation in its handling of educational concepts presented as well as the coaching/mentoring style. A focus group or group interview was used to facilitate interaction within the group about core issues related to work requirements, training, and personal concerns (Bryman & Burgess).

Data Storage:

Data was stored in a locked case and kept in the researcher’s possession. Subjects who participated were referred to by first name only so that identification of personal information was kept confidential. Tapes, transcripts and journals, and observation notes were destroyed at the conclusion of the study. However, individual participants are afforded the opportunity to request copies of their training review summaries.

Data analysis:

According to Stake (2010) two types of data are used in qualitative research; interpretive data or data that by itself seems relevant, and aggregative data that becomes relevant when combined with other data. Data collection methods included observational data, field notes, transcribed interviews, exhibit questions, and social research surveys (Stake, 2010). Reading through the data and transcription of the tape-recorded material gave the researcher a general sense of the information and its overall meaning before coding.

Data analysis consisted of coding responses into theoretical categories and organizing data into emerging themes, then developing themes into a theoretical model (Creswell, 2009). The use of the coding process was applied to narratives and interview transcripts to determine common issues and to triangulate common themes across data sources (Subramanian, 2010).
The researcher used color codes to identify the use of similar words and ideas in handwritten journals and memos. The process was to identify recurring units of data, which revealed the smallest pieces of relevant information to the study that was interpretable in the absence of any additional information (Lincoln & Guba, 1985). According to Merriam (1998) data collection and analysis in a qualitative study needs to take place simultaneously, as an ongoing process. As additional data was reviewed the researcher-explored relationships between categories and further refined themes and categories. Table 4 visually represents the data analysis protocol that was followed in the study.

![Figure 4: Data Analysis in Qualitative Research](image)

Figure 4: Data Analysis in Qualitative Research
Validity/Trustworthiness:

Qualitative validity is based on the researcher determining the accuracy of the findings, considered as the trustworthiness, authenticity and credibility. Qualitative reliability indicates that the researcher’s approach is consistent across researchers and projects (Creswell, 2009). Internal validity identifies how research findings match reality (Merriam, 1998). According to Lincoln and Guba (1985) reality is based on the human interpretation of data and in qualitative analysis, observations and interviews. Qualitative researchers, although lacking in inferential statistics can increase confidence by triangulation via member checking, repeated observations, interviews, and review panels (Stake, 2010). Merriam (1998) suggests the use of peer examination, where colleagues are asked to comment on the findings as they emerge.

Triangulation was used to determine if themes were established based on converging perspectives from participants: four para-educators, supervising teacher, and a BCBA consultant. Cross–checking codes by comparing results that are independently derived helped to assure validation of the findings. Multiple sources were used including interviews, observations, and document analysis. This process helped to ensure the validity of the study (Creswell, 2009).

Reliability refers to whether the research findings can be replicated. However, because human behavior is not static, the reliability of a qualitative study focuses on whether the results are consistent with the data collected. This was accomplished by examining the social context from which data was collected, triangulation in terms of multiple methods of data collection, and through the use of independent audits. (Merriam, 1998). Internal generalizability, a key component to qualitative case studies, measures the descriptive, interpretive and the theoretical validity of the conclusions of a case study. The generalizability of qualitative studies is
generally based on the development of a theory that may be extended to other cases, as opposed to extending the results of a defined population (Maxwell, 2005). However, since the findings are likely to be different from other perspectives, one may particularize, and apply small-scale generalizations from particular situations (Stake, 2010).

**Limitations**

Qualitative research sometimes relies on a small number of informants for a major part of the data (Creswell, 2011). Even when participants are purposefully selected and the data seems valid, there is no guarantee that the participants’ views are typical (Maxwell 2005). The researcher in a qualitative study is the instrument of research and although the researcher’s technical knowledge, background and personal experiences should not be ignored, they need to be identified as potential bias. The documentation of procedures and steps in the training added to the validity of the findings (Creswell, 2009).

**Conclusion**

This study explored how para-educators describe their experiences in an individualized training program specifically designed to address the needs of students with ASD. The goal of this study was to understand how para-educators' training might support students with autism, and to understand what training themes para-educators found most important. Through the use of qualitative case study methodology, a small number of participants were asked to share their experiences and perceptions, using interviews, descriptive questionnaires, and journal postings. The data collected was analyzed to reveal themes that naturally emerged from the data. Classroom staff was given the opportunity to express their perceptions about the training by participating in a focus group.
Chapter Four: Summary of Findings

This research study was conducted in order to better understand how para-educators perceive and respond to an individual training program designed to assist them in working with students with Autism Spectrum Disorder (ASD) and intensive disabilities. Four para-educators working in an early childhood setting within a public school were invited to participate in this study, which provided the researcher with their perspectives on an individual training program for para-educators who worked with students with ASD.

A qualitative case study was chosen as it gives priority to the process studied or phenomenon rather than the setting itself, with the goal of gaining an insider’s depiction of the studied world (Charmaz, 2006). In assuming the role as professional development trainer and on site coach, the researcher moved from the role of passive observer to active participant. A multiple case study places emphasis on comparative methods in which data is examined in terms of emerging categories and possible conceptual relationships.

Research Questions

The purpose of this chapter is to provide an overview of the data collection procedures and results of the data collected from participants who received the individual training program. The following questions guided this multiple case study.

1. How do para-educators perceive and respond to an individual training program designed to assist them in working with students on the autism spectrum?

Sub-questions:
1. What are para-educators’ understandings of strategies to support students with autism?

2. How do para-educators describe their experience in an individual training program?

3. What are the training themes that para-educators identify as most important to their work with students on the autism spectrum?

**Data Collection and Results**

The criteria for determining the validity of research helps to ensure that the results of the study are both credible and dependable. Four tests that judge the quality of a research design include construct validity, internal validity, external validity, and reliability (Yin, 2009). Internal validity identifies how the research findings match reality (Merriam1998). To assure construct and internal validity multiple sources of evidence were used and triangulated as seen in Figure 5. This included the use of a reflexive journal, a coaching journal, analytic memos, and interviews, during data collection to establish a chain of events in the data collection process. The data collected was reviewed repeatedly to assure its accuracy and reliability. External validity or generalizability refers to whether the study’s findings can be generalized beyond the immediate case study. Creswell (2009) refers to particularity, rather than generalizability, as the hallmark of qualitative research in identifying whether what we learn in a particular situation can be transferred to a similar situation. This concept will be addressed in chapter five.

The benefit from conducting a study with multiple sources of evidence is the development of converging lines of inquiry. The triangulation of data sources serves to
corroborate case study findings by providing more accuracy to validate conclusions (Yin, 2009) as can be seen in Figure 5 below.

**Multiple sources of evidence demonstrated in Convergence of Evidence Table**

![Convergence of Evidence](image)

Figure 5: Convergence of Evidence (Yin, 2009 p.117)

Reliability refers to the extent to which the research findings are consistent with the data collected and can be replicated (Merriam, 1998). Rich thick descriptions of the project were provided to allow for comparisons to determine whether findings could be transferred (Merriam, 1998). To increase reliability an external auditor scrutinized all phases of the research methods (Creswell, 2009). In this way the data collection and procedures used in this case study can be replicated in the future and used by other school districts.

After the data sources were transcribed the researcher followed the procedures identified by Creswell (2009) to review the data. These included:

- Reading and rereading through data sources for each case.
• Reading and rereading through written text and color-code notes.
• Recording general thoughts about the data at this stage.
• Beginning detailed analysis with a coding process.
• Clustering and categorizing similar topics.
• Reducing the total list of categories by regrouping.
• Performing preliminary analysis of categories, developing emerging themes.

These steps were completed for each case leading up to the search for emerging themes across cases. (Adapted from Creswell, 2007, p.184).

The data collection included information from an initial (see Appendix C) and final interview (Appendix E) provided to four para-educators at the beginning and end of a three-month period. The ability to trace changes over time is a major strength of any case study (Yin, 2009). At the conclusion of this study three out of the four para-educators took part in a focus group (see Appendix H). As noted previously, in qualitative research the researcher is considered an instrument, observing actions and contexts, often playing a subjective role in the study, using personal experiences to make interpretations (Stake, 2010). In this study, the researcher provided individual coaching/training sessions to help para-educators apply the protocols learned during the professional development training sessions. The classroom teacher also assumed the role as coach with the four para-educators.

**Recruitment of Participants and interview protocols**

The Mayflower School is an early childhood facility that services the district’s preschool and kindergarten population. It is one of four elementary schools in the Queens School district. It is the only Early Childhood Pre-Kindergarten School in Queens consisting of approximately one hundred and thirty-six students. The Mayflower School had served grades
one through five before it closed in 2007; renovations began four years ago to reopen as an early childhood facility. Currently, there are twenty-five staff members with fifteen teachers and nine full-time para-educators. The average preschool class has eleven to fifteen students; some students attend the program on a part-time basis, while special needs students attend the program on a full time basis. Classes with special education students can have up to twelve students with two para-educators assigned to the class. There are twenty-six students on IEPs in both preschool and kindergarten. The preschool has twenty students who receive occupational therapy, physical therapy, and speech therapy services in addition to special education. The Kindergarten has approximately twenty-two students per class.

Through purposive sampling, recruitment of participants was based on the researcher’s request for para-educators who work with students with ASD. The special education director completed the actual recruitment of participants, since the researcher was not an employee of this school. The director selected three para-educators who worked in the preschool program that served students with autism. She selected the kindergarten para-educator because a number of intensive special needs students were in the program, including some students on the spectrum. The kindergarten para-educator had a more limited exposure specifically to students with ASD within the kindergarten environment than the other three preschool special needs para-educators. The proposal matched the study design in that all participants worked with elementary level students with ASD, who spent at least 80% of their time providing individualized instructional assistance within a sub-separate and/or integrated classroom. The special education director selected a classroom teacher with a background in applied behavior analysis to serve as school-based coach.
A letter of introduction was sent by the researcher to each of the four participants in the study to describe the study and encourage them to ask any questions they may have. All participants were provided with the Participant Informed Consent form (Appendix F). The four para-educators (Anne, Diane, Heidi, Kate) and the school-based coach, Linda, were referred to by first name only, also to protect anonymity.

An initial interview was conducted after the first professional development training. Each para-educator’s interview lasted between twenty to thirty minutes, and a digital recorder was used and agreed to by all participants, to ensure the accuracy of information was maintained. A final interview was conducted with each para-educator at the conclusion of the researcher’s coaching sessions, each lasting approximately thirty to forty minutes. A focus group was conducted at the conclusion of the study, with three of the four para-educators in attendance, which lasted between forty-five minutes to one hour in length. Each digitally recorded interview and focus group was subsequently professionally transcribed. All digital recordings, transcriptions, field notes, coaching, analytic memos, and reflexivity journals, were kept in a locked file in the researcher’s home.

**Description of Participants**

The four para-educators appeared open-minded and shared demographic information, their experience as para-educators and the amount of training they had. They also shared their concerns about the kind of training they felt they needed in order to be more successful in their role with students with ASD. The research proposal identified that each para-educator would be working in a setting in which 80% of their time was spent providing individual instruction within a sub-separate and/or integrated classroom. Three of the four para-educators worked within such a setting. One para-educator worked in the Kindergarten setting and provided both
individual and group instruction to students who were following individual educational plans but did not necessarily carry the diagnosis of autism.

Anne is forty-five years old with a high school diploma. She completed two early childhood courses when she graduated, but did not continue college studies. This was her second year working in the district. During her first year, she was hired as a recess monitor with no training provided by the district. This year she was hired as a para-educator in an ASD preschool classroom, with no training offered prior to or after her hiring. She reportedly learns by watching her previous and current classroom teachers and aides and learns by doing. She has had no training in understanding ASD, and has a limited understanding of applying reinforcement strategies and knowledge of teaching strategies. Anne expressed that there was ‘not enough classroom staff’ in her program (A., personal communication, April 9, 2014). She also indicated the need for more direction from the teacher when dealing with children with behavioral issues. Her experience in dealing with student behaviors consists of current on the job training.

Diane is forty-two years old with a high school diploma. Her goal was to go into nursing but she never completed the course work. She has served as a para-educator working with the same classroom teacher in the district for fourteen years. She started as a para-educator with no training. At the time of her hiring she was assigned to one special needs student. She describes her initial work experience as being “thrown in” to the situation. She attended one training last year that addressed working with older elementary students, but never received other formal training, besides a restraint training. She also reportedly “learns by watching and learns by doing.”(D, personal communication, December 13, 2013). Diane has no prior experience in modifying lessons, dealing with behaviors, or ABA. She has no knowledge of teaching strategies, or the prompt hierarchy, which consists of giving the least to most prompts to teach
learners new skills. Prompts are provided using total to partial physical guidance, light touch, imitative and verbal cues, with the goal of establishing independent learning skills. She did attempt to learn about discrete trial training with a previous teacher but did not understand it. Diane expressed concern that she erred because the scores she recorded on her data collection did not match the teacher’s and therefore was incorrect which reflected an error on her part. She shared that in her last position she was provided with a book in order to learn how to take data on her own and she was only shown how to take data one time. She also stated that she was recently permitted to read student Individual Education Plans. At the beginning of the school year she was not permitted access to them.

**Heidi** is thirty-two years old and has just completed her Master’s degree in Early Childhood Education. Heidi has been a para-educator in the district for four years. Prior to this, she was a secretary for six years. She has limited training as a para-educator with limited knowledge of special education teaching strategies and limited experience modifying lessons primarily based upon her course work. She reportedly has limited experience in dealing with behaviors, a limited understanding of ASD learning issues and no access to IEP goals. Heidi has no knowledge of the prompt hierarchy, positive reinforcement, and ABA and she has no experience conducting discrete trials or collecting data. Heidi was aware of the similarities and differences between students with ASD and peer models.

**Kate** is thirty-nine and has a high school diploma. She has been working as a para-educator for five years. Prior to this, she was a long-term substitute and a recess monitor. She stayed at home to raise her children before applying for a position in the school district, preferring a job that offered mother’s hours. Kate reported limited experience in dealing with behaviors and limited experience working with students with ASD and their related learning
issues. She also reported limited knowledge of teaching strategies and no experience in modifying lessons to meet student’s needs, stating that was a task the teachers would do. She has had limited experience in collecting data, no knowledge of the prompt hierarchy and limited knowledge of discrete trials and ABA. She learned about discrete trials by watching a previous classroom teacher.

**Demographics of study participants**

All participants were female ranging in age from early thirties to mid forties. Each of the participants was a full-time para-educator at the Mayflower School for the 2013-2014 school year. The work experience of para-educators ranged from one year to fourteen years. Three participants earned high school diplomas; one had a Master’s Degree in education. Three of the four participants had prior positions in the district before securing their para-educator position. All four participants had no training to support their work with students on the autism spectrum. Only one had limited on the job training in ABA. Table 4.0 provides a summary of the demographics.

Demographics of Study Participants

<table>
<thead>
<tr>
<th>Total Participants</th>
<th>Sex M/F</th>
<th>Age</th>
<th>Years as Para-educators</th>
<th>Education</th>
<th>Formal Training in ASD</th>
<th>Formal Training In ABA</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Para-educators</td>
<td>4 Females</td>
<td>32 – 45</td>
<td>1-14</td>
<td>3 HS.</td>
<td>1 limited</td>
<td>1 limited</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1-Masters</td>
<td>3 none</td>
<td>3 none</td>
</tr>
</tbody>
</table>

Table 4.0 Demographics of the Study Participants
**Interview Protocol**

The initial interview followed the first professional development training, beginning the second week of December. Interviews were arranged based on the best times submitted by the para-educators. Interviews took place in the technology room, the same place the professional development was held. The room was vacant and quiet and secured with the door closed to assure confidentiality. There may have been some discomfort during the initial interviews (see Appendix C), as two para-educators revealed their nervousness. Discomfort or nervousness was not evident during the final interviews (See Appendix E). By the time the focus group took place, both the para-educators and the researcher had spent many hours working together. These interviews were more like flowing candid conversations.

Interview questions were open-ended and semi-structured. Although there was a consistent line of inquiry, conversational questions kept responses fluid rather than rigid, with the goal of providing insight into perceived and causal inferences and explanations. (Yin, 2009) The initial interview questions (see Appendix C) were designed to create a rapport and dialogue with para-educators, to identify demographic information, and to begin to address research questions in determining para-educator prior experiences and training with ABA and students with ASD. Questions were posed to determine their level of understanding in working with students with ASD. For example, each para-educator was asked to identify the similarities and differences between students with ASD and their non-ASD peers as well as their experience in modifying and/or adapting lessons for these students. Final interview questions (see Appendix E) focused on participants’ comfort level in working with students with ASD both before and after the training, and their perceptions of how this model of professional development training compared with their other experiences. Para-educators were asked about the benefits of
coaching, strategies and themes that were most helpful, and their ability to integrate the concepts they learned. They were also asked to identify improvements they believed would enhance the training, and what they needed further instruction on.

At the conclusion of each of the first two professional development trainings each para-educator was given a questionnaire to respond to four open-ended questions. Para-educators were asked for their feedback regarding the presentation of the social and cognitive domains, classification of learning, and the *Maximum Potential for Kids with Autism* (2011), and *Behavior Frontiers* training video (2012). They were asked what they thought about the units covered, whether these were new concepts for them, if the presentation was helpful, and if they would recommend it to other para-educators. At the conclusion of the last professional development training, para-educators were asked to respond to a Questionnaire about the *Bridges ABA School Program for Autism* training video (2009). They were asked to identify by circling the most helpful training themes and strategies.

A focus group was conducted at the conclusion of the study (see Appendix H) consisting of semi-structured open-ended questions to promote a flowing dialogue from participants. Para-educators were provided with a review of all of the topics covered across three professional development trainings. These included: ABA, ASD, Bloom’s Taxonomy and the classification of learning skills, the cognitive and social domains, and the three video training programs, *Maximum Potential For Kids* (2011), *Behavioral Frontiers* (2012), and the *Bridges Program and Curriculum* (2009). Participants were encouraged to share all points of view about what they liked and disliked about the training, including how the training program could be improved. They were told that there are no wrong answers but rather different points
of view. All para-educators seemed comfortable and appeared to enjoy the open dialogue process.

**Use of reflexive journal**

The researcher recorded observations, perceptions, ongoing interactions, and emotions in a reflexive journal throughout the coding process. The researcher recorded ongoing interactions and emotions in response to situations with the purpose of identifying emerging themes and categories (Saldana, 2009). In using a reflexive stance, the researcher had the opportunity to scrutinize the research experience, and assess to what extent interests and assumptions influenced her inquiry. One para-educator described being observed and then called out to respond to questions posed by the principal and special education director, as she attempted to implement the protocols she learned during the training and coaching session. She was terrified that she had done something wrong and no longer wanted to work with the student. She asked the researcher to accompany her to speak with the building principal only to discover that they agreed with what she was doing, but were concerned that she sat the child down in the chair too abruptly.

This journal documented the staffing changes in the coaching classroom that were made to address a lack of staffing that resulted from one veteran para-educator taking medical leave. Instead of hiring another para-educator, a second classroom teacher was hired to team-teach and eventually the class was divided into two separate classes later in the school year. The journal also documented the frustration and positive feedback of the para-educators as they
attempted to deal with a variety of behaviors both during supervised coaching sessions and on their own, when implementing newly acquired protocols.

**Use of coaching journal**

Although coaching is considered to be the most powerful of all training components, it tends to be the method least used (French, 2003). Coaching requires supervision skills, requires time, and is therefore more costly than other training components. However, it is an approach that ensures that skills and concepts can be applied. Coaching sessions were scheduled for a minimum of two times per week for thirty minutes for each para-educator. A debriefing meeting took place immediately after each coaching session with each para-educator where feedback was provided and questions were answered. The researcher kept a coaching journal to log observations and conversations as well as to identify evidence of strengths and need areas for improvement, and make recommendations. It was also used to review previous sessions with each para-educator in order to conduct member checks. The coaching journal provided another rich source for triangulation of data.

**Use of analytic memos**

During the coding and interview process the researcher devised analytic memos as a means of ongoing analysis an iterative process to repeatedly review the data and determine what direction the data was taking. Analytic memo writing serves as a code and category generating method (Saldana, 2009). Memo writing constitutes a crucial method because it prompts the researcher to analyze the data and corresponding codes early in the research process. Memos helped to establish categories and allow the research to make comparisons between codes of data, categories and assumptions or actions uncovered (Charmaz, 2006). It
provided a snapshot of where the researcher was at certain points in time with data collection, but also serves as a means to triangulate, using more than one research method to collect data that will contribute to the credibility of the study.

Each para-educator was asked to keep a journal of their experiences, thoughts and feelings for the duration of the study. An online website was also created for those para-educators who preferred using the computer. The classroom teacher was provided with a binder consisting of all of the training material reviewed with para-educators, so that she could record her coaching experiences with each para-educator. The binder was also available for the Board Certified Behavior Analyst consultant, to allow her to enter her observations and program notes.

**Iterative analysis**

Iterative analysis procedures relates to the process of repeatedly returning to the source of the data to ensure that the understandings are truly coming from the data (Srivastava, 2009). Iterative analysis is a simultaneous process of collecting data, carrying out a preliminary analysis, and using this to guide the next piece of data collection, continuing this pattern until the data collection is complete. The researcher condensed data into categories or themes by searching for the most descriptive wording, attributing phenomena to a segment of text. Interpretive codes were applied when meaning was attributed with reference to context or other data segments. The process uses inductive reasoning by which themes and categories emerged from data through the researcher’s careful examination, constant comparison and search of patterns, interrelationships and insights (Charmaz, 2012). In this study, the researcher attempted to relate the central research question and sub-category questions during continuous
analysis of the data, organizing categories and themes based upon the research questions. In some cases research questions overlapped or were unrelated but useful information was provided.

Hyper Research Software

Hyper Research, first introduced in 1991, supports source-based qualitative method work on both Microsoft windows and Apple OSX. At the time data collection was to begin, it was the only program available for Apple users, and was the single motivation for this researcher’s choice. It claims to be an easy to use qualitative software package enabling users to code and retrieve source material, build theories, and conduct data analysis (Creswell, 2009).

Coding Thematic codes and sub-codes

Audio interviews of the initial interview, final interview, and focus group were transcribed and uploaded on to the Hyper Research software for analysis to determine topics, themes and issues important to the study. The researcher read through and coded each participant’s interview in its entirety before moving on to the next interview, to get a sense of the data and to review the accuracy of each transcription. This method was completed for coding of the initial, final and focus group interviews. First cycle coding during the initial phase of data analysis consisted of splitting the data into individually coded segments (Saldana, 2009). This process of analysis involves reading through each word, line or segment of data followed by a focused, selective phrase that uses the most significant or frequent initial codes. The researcher used these guidelines, reading the data in each individual interview, line by line,
and comparing data with data to find similarities and differences at each level of analysis. First cycle coding made use of In Vivo coding, in an attempt to preserve the participants’ meaning of their views and actions within the coding.

Focused coding followed the Initial coding process, as the researcher searched for the most frequent or significant initial codes in search of patterns, to develop categories across each of the three interviews. Through focused coding the researcher was able to move across interviews, observations and journals to compare each para-educator’s experiences, actions and interpretations. Second cycle coding is an advanced way of reorganizing and analyzing the data as a means to develop a sense of categorical, thematic and theoretical organization from the result of First Cycle coding (Santana, 2009). The researcher reread and recoded transcripts of each interview several times to identify and focus on key features and to condense the data, where possible, to provide more manageability of data. The Second Cycle Coding method of Axial Coding was used due to the large amount of groupings of final interview codes and focus group codes. The purpose of axial coding is to sort, synthesize and organize large amounts of data and then reassemble them in new ways after coding. Axial coding was used to develop subcategories of a category and show the links between them. The researcher looked for connecting strategies in an attempted to look for relationships that connected statements and events among different elements of the text (Maxwell, 2005). Themes began to emerge through this process.

Throughout the coding process, the researcher color-coded, by underlining words, sentences, and phrases from journals, field notes, reflexive notes, and analytic memos. She coded transcripts that correlated with In Vivo codes and process codes identified in the
interviews and that were transcribed in the Hyper Research software. Descriptive coding was applied to the content of the coaching journal, to identify basic topics of each coaching session. The researcher later color-coded selections from all sources to correspond to specific research questions as can be seen in Table 4.1 below.

**Logie Table 4.1: Chart of Themes and Codes and Frequencies**

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Themes</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) What background experiences, prior training, and perceptions about roles and expectations did para-educators come into training with?¹</td>
<td>Lack of training</td>
<td>No training</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trial and error</td>
</tr>
<tr>
<td></td>
<td>Roles &amp; Expectations</td>
<td>Expected to do clerical work</td>
</tr>
<tr>
<td></td>
<td>Problems in obtaining appropriate training</td>
<td>Not enough time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No workshops</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Training does not pertain to paras</td>
</tr>
<tr>
<td></td>
<td>Unclear job expectations and roles</td>
<td>No job description</td>
</tr>
<tr>
<td></td>
<td>How they learned in absence of training</td>
<td>Trial and error</td>
</tr>
<tr>
<td></td>
<td>Lack of experience</td>
<td>No experience</td>
</tr>
<tr>
<td>2) How do para-educators describe their experience in an individual training program?</td>
<td>Positive Experiences</td>
<td>Professional development helpful</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gave them confidence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Felt comfortable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gained confidence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coaching provided supervision and feedback</td>
</tr>
<tr>
<td></td>
<td>Negative Experiences</td>
<td>No time for ABA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Schedule changes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>stressful</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Training required more time than expected</td>
</tr>
</tbody>
</table>

¹ In the original research proposal and IRB application, the researcher posed this question “How do para-educators perceive and respond to an individual training program designed to assist them in working with students with ASD?” Ultimately, respondents’ answers made it clear that issues of their prior experiences, training, and ideas about their roles and expectations were central to how they experience the individual training. Thus, the researcher reworded the question here to better reflect the themes emergent from the data.
<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Themes</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3) What are para-educators understanding of strategies to support students with autism?</td>
<td>Strategies para-educators were familiar</td>
<td>ABA (1) ASD (1) DTT (1) Reinforcement (1) Modifying lessons based on knowledge of ASD (1) Similarities and differences between ASD and peers (1)</td>
</tr>
<tr>
<td></td>
<td>Strategies para-educators were NOT familiar</td>
<td>Task Analysis (0) Errorless teaching (0) Prompt hierarchy (0) Behavior management (0) FBA (0) Motivation (0) Learning domains (0)</td>
</tr>
<tr>
<td>4) What are the training themes that para-educators identify as most important to their work with students on the autism spectrum? (Concepts that would help them in their role, based on their experiences in the role and based on their expectations)</td>
<td>Training</td>
<td>1-to-1 instruction Needed Ongoing coaching Formalized instruction (e.g. 2x/mo. After school). ABA should be done as pullout</td>
</tr>
</tbody>
</table>
Table 4.1 Logic Chart: Chart of Themes and Codes and Frequencies

The Logic Chart, identified in Table 4.1, resulted from the identified essential categories that emerged from the participants’ extensive contributions and the researcher’s perceptions throughout the study. The thematic coding applied assisted in relaying para-educators perspectives of their overall training experience.

**Coding related to central question:** The central question of this study was stated as follows:

How do para-educators perceive and respond to an individual training program designed to assist them in working with students on the autism spectrum? For this question coding focused on what para-educators perceived as their job requirements and role in working with students with ASD, and what they perceived they needed to fulfill their role. Three main themes emerged from the data related to this question: *Lack of training, lack of experience, and unclear job expectations and roles*. Within these themes, sub-categories also emerged with some overlap between subcategories related to this question and the background experience of the participant that included *how they learned in the absence of experience, problems obtaining appropriate training, a co-teacher’s role versus a clerical role*. Relating to the theme of *Lack of training*, the following subcategories emerged: *Learned by watching, trial and error, prior training by district in ASD issues insufficient, limited or no experience using applied*
behavioral analysis. Related to the theme of Job requirements unclear was no college experience, lack of time for ABA, co-teacher role versus clerical role.

**Coding related to sub-question 1**: What are para-educators’ understanding of strategies to support students with autism? For this question, coding focused on the strategies with which para-educators were and were not familiar when the training began. Kate expressed that she had limited experience in understanding ASD, ABA, reinforcement, modifying lessons, the learning domains, and distinguishing the similarities between students with ASD and their peers. All para-educators had no knowledge of the principles of task analysis, errorless teaching, the prompt hierarchy, behavior management, Functional Behavior Assessments (FBA’s), and motivation. Coaching was also identified as a support that para-educators would like to receive on a regular basis.

**Coding related to sub-question 2**: How do para-educators describe their experience in an individual training program? For this question coding identified what para-educators believed to be positive and negative aspects of their training. Some of the coding identified program issues that affected how and when the training took place. For example, one para-educator felt that the professional development workshops should have closer together. However, workshops were presented according to the district’s professional development schedule. Para-educators were asked if they would prefer to have trainings after school; however, the majority were not in favor of this. The length of the training was criticized that was a result of waiting for the hiring of a new teacher so that the classroom teacher could complete her part of the coaching. Heidi stated that, “she did not realize how in-depth the training was,” (H., personal communication, April 9, 2014). Kate identified that any change in
her schedule to accommodate coaching created stress for her. Para-educators identified that they were comfortable throughout the training and felt more confident as a result of applying what they learned from the training. They enjoyed the supervision and feedback received from coaching.

**Coding related to sub-question 3:** What are the training themes that para-educators identify as the most important to their work with students on the autism spectrum? Para-educators identified the need for training as one of the most important themes central to assisting them in their work with ASD students. Participants sometimes replied with answers describing their unfavorable job conditions. They clearly perceived an unfavorable job condition as important as training in order to do a good job. They identified lack of staff, no access to IEPs, entry-level position, clerical work, no time to ask questions and get answers and high stress as impediments to working with students with ASD. This will be further addressed in chapter five.

**Triangulation of data**

Data imported into Hyper Research software were analyzed line-by-line, finding the most descriptive wording for topics and turning them into categories (Creswsell, 2009). The coding process identified categories and themes that were analyzed across each individual case. A set of themes and subsequent codes emerged as findings, which are shown in Table 4.3 and will be further explained in detail throughout the remainder of this chapter. The data were color-coded corresponding to the research question on hand-coded documents that included journals, surveys, questionnaires and a coaching journal.

With data triangulation, potential problems of construct validity were addressed through the use of multiple sources of evidence, which essentially provided multiple measures of the
same phenomenon (Yin, 2009). This multiple case study used an array of sources of evidence that included field observation, documents from the district, open-ended interviews, questionnaires and surveys, journal entries, focus interviews, analytic memos, field notes, reflexive journal, and a coaching journal, all triangulating on the same set of research questions. The researcher spent a considerable amount of time in the field to develop an in-depth understanding of the questions under study (Creswell, 2009) and to be able to convey details about the site and the participants. The researcher used member checks, which are documented in the coaching journal, taking descriptions and themes back to the participants to check for accuracy.

**Participant Data Related to Central question**

The original research question was posed, *How do para-educators perceive and respond to an individual training program designed to assist them in working with students on the autism spectrum?* Ultimately, respondents’ answers made it clear that issues of their prior experiences, training, and ideas about their roles and expectations were central to how they experienced the individual training. Thus, the researcher identified the need to reword the question to include para-educator’s background and prior experiences and training to better reflect the themes emergent in the data.

Data identified through multiple sources are outlined in Table 4.2 below. Actual quotes from participants are included that correlate to the themes, sub-categories and the theoretical/literary frameworks used as a lens in the research study.
<table>
<thead>
<tr>
<th>Source/Date</th>
<th>Quote</th>
<th>Themes and Sub-categories identified</th>
<th>Theoretical/Literary Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kate</td>
<td>“No (job description). I mean, just that you’re here to assist the teacher, any needs that she has. You know, I mean like silly things like taking them down to lunch, going to the library.” “It’s hard to find the time to work with individual students; I can’t even take ten minutes to work with Hayden… I’m either taking her to the nurse to be G-tube fed, covering lunch, the switchboard or asked to do other assignments.”</td>
<td>Lack of training Lack of experience Unclear Job Requirements Co-teacher versus clerical</td>
<td>Social cognitive theory states that goal setting involves deciding on the goals for learning, and strategies to identify the optimal learning strategies required to reach the goal (Erlich &amp; Russ-EFT, 2011)</td>
</tr>
<tr>
<td>Diane</td>
<td>“No, not really (was not given job description). “I was actually a 1:1 with a Down syndrome child. That’s how I started-they just kind of throw you in there. You’ve got the position and off you go.”</td>
<td>Lack of Training Lack of experience Unclear Job Requirements How they learned in the absence of training</td>
<td>Social Cognitive theory aligns itself to process education philosophy, which focuses on improving learning skills in the cognitive, social, psychomotor and affective domains with the ultimate goal of creating self-growers (Beyerlein &amp; Apple, 2009)</td>
</tr>
<tr>
<td>Anne</td>
<td>“From the beginning there wasn’t a whole lot of training as far as what was required of me. Just hands-on extra help for in the classroom.” “I knew hands on extra help…But as far as really working with the kids that been more like learned by watching experience”</td>
<td>Lack of Training Lack of experience Unclear Job Requirements How they learned in the absence of training</td>
<td>Constructivism means that learning involves constructing, creating, inventing and developing ones knowledge and meaning (Daniels, 1993).</td>
</tr>
<tr>
<td>Heidi</td>
<td>“I think that the demands of the position have changed over the years, it’s time to realize that being an assistant isn’t just, okay, let me go copy, or, okay, let me staple these for you, you know. It’s more. We are co-teachers. We are just as important, and we need the training, especially when a lot of the paras coming in have not gone to college. They have not taken one course.” “It’s pretty much like an entry-level position really. It’s an important position too, and I think that it needs to be treated that way, and I don’t think that it is.”</td>
<td>Unclear Job Requirements Co-teacher vs. Clerical role Lack of Training Lack of experience</td>
<td>Para-educators hired after January 2002 and working in a program supported with Title I Part A must complete two years of study at an institute of higher education, obtain an associates degree or higher, or take and pass a formal assessment measuring their knowledge of an ability to assist classroom teachers in instruction (CEC, 2004).</td>
</tr>
</tbody>
</table>

Table 4.2 Participant Data Related to Central Research Question
Table 4.3 identifies participant data related to Sub-question 1: *What are para-educators understanding of strategies to support students with autism?*

<table>
<thead>
<tr>
<th>Source/Date</th>
<th>Quote</th>
<th>Theme and sub-categories identified</th>
<th>Theoretical Framework</th>
</tr>
</thead>
</table>
| Heidi       | “I have no training in autism or ABA.” “Teachers modify the lessons for students.” “I don’t do any of that in the classroom (address behaviors).” “I really haven’t had much. Just now and then I, you know, may have come across a student that they had discovered had it, but, other than that, I haven’t had much experience with ASD.” | Strategies with which paras were familiar
Limited reinforcement
Strategies with which paras were unfamiliar
ABA, ASD
DTT, Behavior,
Adapting lessons
Prompt hierarchy
Errorless teaching
No experience with FBA, ABC chart | Vygotsky’s position was that instruction actually created possibilities for development rather than being seen as subordinate and incidental to developmental processes (Daniels, 1993). |
| Anne        | “More so with behaviors, I guess its basically trial and error, like trying to figure out what approach.” “Just trying to teach using words instead of grabbing.” “Like certain things I know with certain children like will work better, so I will just change my way of, you know, approaching…and sometimes the teacher will step in.” | Strategies with which paras were familiar
Limited modifying lessons
Limited ASD, ABA
Trial and error
Strategies with which paras were unfamiliar
Reinforcement
DTT
Adapting lessons, Prompt hierarchy
Behavior | Vygotsky defined the zone of proximal development as the distance between a student’s actual developmental level as determined by independent problem solving and the higher level of potential development under adult guidance (Daniels, 1993). With the passage of NCLB para-educators are expected to take on more responsibility in the classroom; schools need to carefully define the appropriate job responsibilities of para-educators (Dillon & Ebmeier, 2009). |
| Diane       | “Well we had restraint training 3 years ago and then I just had this training.” “They just gave me the book and they explained it once (data collection) to you, but it was difficult for me.” | Strategies with which paras were familiar
Limited data collection
Learned by watching
Strategies with which paras were unfamiliar
prompt hierarchy
ASD
Modifying lessons | Constructivism is a theory about how we learn and the thinking process, rather than about how a student can memorize or recite a quantity of information (Liu & Chen, 2010). |
<table>
<thead>
<tr>
<th>Kate</th>
<th>Final Interview</th>
<th>March 19, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior</td>
<td>ABA</td>
<td>Errorless teaching</td>
</tr>
<tr>
<td>Strategies with which paras were familiar</td>
<td>Data collection, DTT</td>
<td>ASD</td>
</tr>
<tr>
<td>Strategies with which paras are unfamiliar</td>
<td>Reinforcement Errorless teaching</td>
<td>DTT</td>
</tr>
<tr>
<td>Prompt hierarchy</td>
<td>Modifying lessons</td>
<td></td>
</tr>
</tbody>
</table>

So I think, you know, trying to find something that is a good reward for them would be helpful for them to reach that goal of five questions or whatever it is. That would fall into discrete trial training, right?"

…And let me see and also the errorless teaching was also good”

I don’t do the everyday data collection, but like, you know, my teacher would say to me like, “Can you go and sit at the back table and do . . . So I am going to start it after the holiday.”

Vygotsky wrote extensively about learning by doing. In his constructivist approach, he viewed the role of the instructor, as a facilitator who organizes activities for learners to discover their own learning. In authentic learning environments learners assume responsibility for their own learning.

Constructivism stresses the use of experiential learning that includes creating, incentivizing and developing one’ own knowledge; as opposed to the student being a passive recipient of information (Prawat, 2003).

Table 4.3 Participant Data Related to Sub Research Question 1
Table 4.4 identifies participant data related to Sub-question 2: *How do para-educators describe their experience in an individual training program?*

<table>
<thead>
<tr>
<th>Source</th>
<th>Quote</th>
<th>Themes and Sub-Categories Identified</th>
<th>Theoretical/Literary Framework</th>
</tr>
</thead>
</table>
| Anne Final Interview March 20, 2014 | “I was pretty comfortable, although I still felt like there was a lot that I needed to learn, or that I could learn, you know. I guess actually some of the things we actually worked on, you know, that ABA stuff and the reinforcing, you know, things that we used, like that kind of stuff actually was helpful.” “I feel a little more confident in doing those types of things with the, you know, reinforcement type stuff...and more comfortable now.” “the actual dates where we saw the videos and trainings and stuff is to me it would have been nice if we could have done them closer together.” | Positive Experiences  
Confidence  
Comfortable  
Helpful  
Negative Experiences  
Training too long | Early intensive intervention based on ABA has been identified as the treatment of choice for children with autism. ABA has been used to develop interventions for students with ASD for over fifty years (Thomson, Martin, Arnal, Fazzio & Yu, 2009). DTT is made up of a series of small units of instruction with the goal of improving the overall quality of responses. This is done by adjusting the requirement for earned reinforcement (Leaf & McEachin, 1999). |
| Diane Final Interview March 19, 2014 | “I feel very confident now, I really do. I’ve learned a lot through this training, so if we end up getting more kids with ASD, I’m on the right track. I learned a lot.” “Did you find that that (Para Pro) helped you, what you’re doing right now? It was nothing to do—do you know what I’m saying? So to me why have that test? I would have preferred to have something like this, sitting down for two or three days, whatever, talking about.” “I’m getting pulled to work in the office or I’m getting pulled to go to her room. Just sometimes I felt like I didn’t have any time, so that’s why I didn’t do much writing in my journal” | Positive Experiences  
Confidence  
Negative Experiences  
Training too long | According to French (2003) coaching is the most powerful of all training components however, it tends to be the method that is least used. Eleven states have para-educator professional development programs however, Massachusetts does not (Education Commission of the States, 2006). Symes and Humphrey (2011) findings identify that para-educators indicated that generic training about ASD was not helpful. |
Table 4.4 Participant Data Related to Sub Research Question

<table>
<thead>
<tr>
<th>Participants</th>
<th>Negative Experiences</th>
<th>Positive Experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Interview 3/19/2014</td>
<td>No time to integrate training</td>
<td>Coaching</td>
</tr>
<tr>
<td>Coaching Journal 2/10/2014</td>
<td>Stress Schedule changes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heidi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>April 9, 2014 Focus group</td>
<td>Training too long</td>
<td>Coaching offered supervision and feedback</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

“I mean, I would have to say no, only because I had to like physically remember to be like, oh, my God, let me try to do that, you know, so I would say no” (limited supervision and time to integrate concepts taught). The day is so structured with activities”

“If I’m stressed out, that means that the children are getting stressed out, and, believe me, nothing to do with you coming but just that frustration of being pulled from our regular routine, because it’s not something that we did all the time, would be frustrating.”

“I thought it was nice, because, I mean, there were things that I was doing and that you stopped me and said, “Okay, this is what you should do,” and that’s very helpful, so, yes, I believe the coaching was good.”

Vygotsky believed in the intellectual version of apprenticeship learning, where the teacher first models the practices; as the student becomes more skillful control is turned over to the student (Prawat, 2003). A para-educator’s most difficult challenge is to understand the learning process and become effective in facilitating the rapid development of performance in ASD learners (Leise & Beyerlein, 2009).

Glaser (2005) identified ‘Cross pressure’ theoretical code in identifying external pressures that affect individuals and can play a role in impacting the benefits of skill training.

Using the constructivist theory, the instructor is a facilitator who organizes activities for learners to discover their own learning (Prawat, 2003).

With the passage of NCLB para-educators are expected to take on more responsibility in the classroom that includes working one to one with students, classroom management, and instructional support services under the direct supervision of a teacher (Dillon & Ebmeier, 2009).
Table 4.5 identifies participant data related to Sub-question 3: What are the training themes that para-educators identify as the most important to work with students on the autism spectrum?

<table>
<thead>
<tr>
<th>Source</th>
<th>Quote</th>
<th>Theme and sub-categories identified</th>
<th>Theoretical Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heidi</strong></td>
<td>“I don’t. I believe I could go and get that information. There has been some talk about whether or not the paras should have access to that.” (IEP’s)</td>
<td>Job Conditions</td>
<td>According to Dillon &amp; Ebmeier (2009) para-educators should understand and be competent in specific disabilities, individualized education programs and plans, plans for instruction, behavior management, communication, individual and small group instruction, and special education process and laws.</td>
</tr>
<tr>
<td><strong>Initial interview</strong></td>
<td>12/20/2013</td>
<td>Access to IEP</td>
<td></td>
</tr>
<tr>
<td>Focus Group</td>
<td>“Because I think that it needs to be kept in mind that to become a para-professional, yes, you have to have that test pass, but it’s also come in with a high school diploma. You know what I mean? So not everybody has gone through any sort of educational opportunity, so I think that training is important.”</td>
<td>Entry level position</td>
<td></td>
</tr>
<tr>
<td><strong>Kate</strong></td>
<td>“I would say like even just, you know, not doing it all the time and not having that background, I mean, the coaching was helpful to me, so I would think that it would be nice to have a coach on hand to say, hey, I’ve been doing this. What am I doing wrong? It doesn’t seem to be working. It would be nice for someone who knows what they’re kind of doing every day with it and coming in and saying, well, you could do this or you could do that. So maybe just having a coach on hand would be great.”</td>
<td>Need for Training</td>
<td>According to constructivism theory, learning is not the result of development; learning is development. Disequilibrium facilitates learning; errors should therefore not be minimized or avoided Challenging, open-ended investigations in realistic, meaningful contexts need to be offered which allow learners to explore and generate many possibilities, both to be reflected upon explored and discussed (Fosnot &amp; Perry, 1996).</td>
</tr>
<tr>
<td><strong>Final Interview</strong></td>
<td>March 19, 2014</td>
<td>On-going</td>
<td></td>
</tr>
<tr>
<td>Anne</td>
<td>“I thought it was great, because we did have that sort of coaching. A lot of the time when we have professional development days, it’s not even pertaining to us as paras in the ASD classroom. We haven’t had”</td>
<td>Development of independent skill abilities based on social cognitive theory use observation, and imitation (Zito, Adkins, Gavin, Hariis, Graham, 2007)</td>
<td></td>
</tr>
<tr>
<td><strong>Final Interview</strong></td>
<td>March 20, 2014</td>
<td>Development of independent skill abilities based on social cognitive theory use observation, and imitation (Zito, Adkins, Gavin, Hariis, Graham, 2007)</td>
<td></td>
</tr>
<tr>
<td>Questionnaire</td>
<td>12/11/2013</td>
<td>a lot of training at all. In fact, it’d be great if we could get more training.” “The prompting, I find, when I do levels, the prompting, and just like we were saying the errorless teaching”</td>
<td>The learning domains consist of a systematic classification of the processes of thinking and learning using paced performance-based instruction that permits learning objectives to be organized into small sequentially organized units. The theoretical framework of the learning domains uses facilitated analysis of learning objectives presented in a cumulative hierarchical framework and requires achievement of prior skill or ability before the next more complex one (Bobrowski, 2009).</td>
</tr>
<tr>
<td>Diane</td>
<td></td>
<td>“Learning the levels of competency was very useful. Made me realize the different levels in my own class.”</td>
<td></td>
</tr>
<tr>
<td>Final Interview</td>
<td>March 19, 2014</td>
<td>“I liked the coaching part. It was individualized to my needs, definitely, because you pulled us aside and one-on-one helped us, and if we had questions, you were there to answer our personal questions and all that.” “Like the reinforcement definitely, understanding autism, ….just understanding those kids, and the behavior management too, you know. That helps.” “I think it’s important that we’re able to look at the IEP and just read and see what are their, you know?” “We’re supposed to be getting more children, so, again, even to pull, like we were saying, into another side of the room, it’s just still busy. So we need more help.”</td>
<td></td>
</tr>
<tr>
<td>Focus Group</td>
<td>4/9/2014</td>
<td></td>
<td>Social cognitive theory is used to describe the processes involved in goal-directed behavior and motivation (Fox and Riconscnete, 2008). It is used to assess learning outcomes through self-efficacy and self-regulated learning. Webby and Kern (2014) state that data-based instruction is an empirically proven method of individualized instruction, providing a one to one format for students with significant learning needs. More strategic programs accelerate academic growth for students with disabilities.</td>
</tr>
<tr>
<td>Need for Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Conditions</td>
<td></td>
<td>Access to IEP</td>
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<tr>
<td></td>
<td></td>
<td>No time to ask question, get feedback</td>
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<tr>
<td></td>
<td></td>
<td>Lack of staff</td>
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</tr>
</tbody>
</table>

Table 4.5 Participant Data Related to Sub Research Question 3
Discussion of themes and subcategories

The participants of this study were a unique group of individuals, but are considered representative of typical para-educators in their eagerness to assist students with autism spectrum disorder. Through the lens of constructivism and social cognitive theory, it became evident to the participants of this study they could develop their own abilities and achieve success in their work with students with ASD. The para-educators were very willing to share information about themselves, including what they perceived as their own strengths and weaknesses, leading to data that allowed for themes, categories and sub-categories to emerge related to the research questions in this study. When analyzing the data, the researcher determined the following themes and sub-categories related to the central question and three sub-questions directing the research of this qualitative case study.

Lack of training emerged as one of the main themes of the data with the sub-categories lack of experience, and problems in obtaining appropriate training. During Anne’s initial interview she had expressed that this was the second year working for the district; during the previous year she functioned as a school monitor. She had taken two college courses in early childhood but had not been provided any formal training by the district in the position she was assigned as para-educator of ASD students. Anne had no formal training in dealing with ASD and learned by watching the teacher and other para-educators. She had a limited understanding of applying reinforcement strategies and limited knowledge of teaching strategies. She indicated she needed more direction from the teacher when dealing with children with behavioral issues. Her experience in dealing with student behaviors consisted of “trial and error” and on the job training.
Diane had reportedly attended an in-service training designed for those working with older students and restraint training. She described that her knowledge base and approach with students was based on “learning by watching and learning by doing,” (D., personal communication, December 12, 2013). Although Heidi had a Master’s Degree in Early childhood Education she had limited direct experience working with students with ASD and the use of teaching strategies or modifying lessons. She had no knowledge of the prompt hierarchy, positive reinforcement, or ABA. Diane, Kate, and Anne deferred to the classroom teachers for modifying lessons. Both Heidi and Kate recalled training related to confidentiality and restraint training, but no training linked to working with special needs children or children with ASD.

Unclear job expectations emerged as a main theme with the subcategory, how they learned in the absence of training, and co-teacher versus clerical role. Diane worked with the same teacher for fourteen years. She described her initial work experience as a one to one para-educator for a special needs student as being “thrown into her position.” She shared that in her last position she was provided with a book in order to learn how to take data, and that she was shown how to take data one time. She feared she would be viewed as incompetent because she believed she was collecting data incorrectly. She stated, “And then we’re going to get different scores, so how do we know what’s right and what’s not? Like I might think he did a great job doing this, and she might not (D. personal communication, December 13, 2013).”

Kate describes herself as “frustrated” when pulled from her routine which included coverage for the secretary, filling in in other classes as needed, accompanying students to the nurse daily, and lunch duty. Currently, para-educators are moved around to replace staff that is out sick in addition to covering the office. Heidi expressed, “We’re always picking up somewhere, so not only are we doing our job, we’re doing something else as well. (H., personal
communication, April 9, 2014).” Diane also expressed that she had “… too many things going on,” such as covering a class alone or the office, which were part of her responsibilities (D., personal communication, April 9, 2014). Diane described the request for keeping a journal as “another add-on to her job.” The para-educator role continues to be perceived as entry level that requires both clerical and teaching, explained best by Heidi. She stated,

“It’s time to get with the times and realize that being an assistant isn’t just, let me go copy, or, let me staple these for you. It’s more. We are co-teachers. We are just as important, and we need the training; especially when a lot of the para-educators coming in have not gone to college. They have not taken one course (H. personal communication, April 9, 2014).”

**Strategies familiar and unfamiliar to para-educators**

Each para-educator was asked to describe their familiarity with teaching strategies that have been proven to be most effective in working with students with ASD. Two themes became evident with para-educators stating that they either had *no experience or limited experience* and knowledge applying specific strategies with students, with *trial and error and learn by watching* as the two sub-categories that emerged. Kate claimed to have the most prior experience in working with students with ASD, which still provided her with a limited understanding of learning issues associated with ASD, dealing with behaviors, and carrying out discrete trials and data collection. Kate described her current class of students as “tough kids” and stated that her experience was based on her previous classroom placement (A., personal communication, December 17, 2013). Although Heidi had a Master’s degree in early childhood
education, she was unfamiliar with ASD learning issues, dealing with behavior, reinforcement or ABA. In her current position she stated that modifying lessons was the teacher’s job.

All four para-educators seemed familiar with the concept of providing feedback to students by verbalizing “good job” for completion of a task well done. However, they were less familiar with providing tangible reinforces and/or edibles to motivate students, or for students who do not yet respond to verbal reinforcement. None of the para-educators had any knowledge of the prompt hierarchy, which is used with all students, not just special education students. Diane and Anne stated they had no understanding of reinforcement or the use of prompts, while that of Heidi and Kate was limited.

Both Anne and Diane had no training in ASD, ABA, modifying lessons, dealing with behaviors. Diane makes reference to the students she works with now as “heavy hitters,” since they are the most challenging students being “thrown into our room,” (D., personal communication, December 13, 2013). Anne described that she was most challenged in dealing with students who bolted out of the classroom, a “screamer,” and an aggressive student who bit her (A., personal communication, December 16, 2013). Both Anne and Diane’s current approach to dealing with behaviors consisted of “trial and error.” Anne, Kate and Diane stated that their knowledge base and approach with students was based on “learning by watching and learning by doing.” They stated they watched the teacher or other para-educators in the class working with students.

**Positive training experiences**

When para-educators were asked to describe their training experience in an individualized program two themes emerged, with the citing of both *positive and negative experiences* within the sub-categories. Coaching was identified as a positive experience and
created sub-categories that included building confidence, comfortable, helpful, supervision and feedback. Anne stated that she now realizes there are many strategies that have been proven effective to teach students with ASD and how essential it is that she learn them. Diane stated that the training was “individualized, on a one to one basis, and answered personal questions.” Heidi and Anne shared that the training increased their comfort level and confidence in their ability to work with ASD students. Heidi described herself as a “hands-on learner” and needs to get in there and learn the right way.” She integrated the training in her daily routine by applying what she learned about data collection and dealing with students’ behavioral issues (January 24, 2014). Kate stated she found “the coaching piece done in real time helpful” in showing her protocols and providing her with feedback (K., personal communication, March 20, 2014).

Negative training experiences

One major negative theme about the training related to the length of time the training took place and the stress associated with the integration of the training with the job. The sub-categories that emerged consisted of schedule changes and no time to integrate training. Ann suggested that the coaching and journal writing should have required “no longer than a couple of weeks,” (A., personal communication, April 9, 2014). She also suggested the professional development be presented across three consecutive days. This was offered as an option but the majority of para-educators did not approve it. Kate expressed that she gets stressed with any changes in her routine. She was “frustrated when pulled from her routine” for coaching sessions, although, at the same time, she stated that she benefited from the feedback she received (K, personal communication, February 10, 2014). Both Kate and Diane expressed that there is no time to integrate the training into their daily routine.
The need for ongoing training

A number of training themes emerged as para-educators were asked to identify how the training program assisted them in working with students with ASD. The training theme that re-occurred across all research questions was the need for para-educators to receive ongoing training. Another theme that was not anticipated and will be discussed further in chapter five related to job conditions in which the following sub-categories were identified: Access to IEP’s, entry level position, no time for ABA, no time to ask questions or get feedback, lack of staff. All four para-educators were positive about the material covered during the professional development training and identified that the coaching and modeling was the most helpful part of the entire training, in terms of showing them effective ways of working with students. Kate, during her final interview (March 17, 2014), expressed the idea of having a coach on staff all the time to provide modeling and feedback. They expressed that the position of para-educator is viewed as an entry-level position when in reality they should be considered as “co-teachers.”

Job Conditions

Anne stated that although coaching appointments were prescheduled, it was not always convenient when the actual day and time arrived. All para-educators stated that more staff is needed in the ASD classroom. When they were pulled to work individually with students, it provided a void for the other students creating a room that was “noisy and chaotic.” As result they reported that without ABA built into the schedule and the current staffing quota, there is no time to carry out discrete trials, ask questions or receive feedback. The position of para-educator is treated as an entry-level position, with a mix of clerical and teaching responsibilities. Para-educators were not permitted to read the goals and objectives written in the IEP’s of the students they worked with until the training program ended.
Summary

In summary, Chapter 4 highlights the essential themes that emerged from the data. The para-educators’ experiences were relayed in a narrative form with direct quotes from participants noted. Sharing first hand information from the participants appears to be the most effective way to relay the actual experiences of the para-educators in this study. This multiple case qualitative study was chosen to explore para-educator experiences using an individualized coaching and training program to identify the training themes that para-educators find important in working with students with ASD.

In Chapter 5, these findings will be discussed in greater detail through analysis of themes and their relation to the initial research questions, their connection to the literature review, and the theoretical frameworks employed. Recommendations will be made, specific to this study, as well as to all para-educators working with students with ASD.
Chapter Five
Discussion of Findings and Implication for Practice

Introduction

While para-educators have become the backbone of inclusive and sub-separate early childhood classes serving students with ASD (Crawford, 2005), few states have identified competencies or systematically train para-educators even though they represent the largest group of personnel providing special education services (Killoran, Templeman, Peters & Udell, 2001). This study focused on the perceptions and understandings of para-educators, who shared a common role as the primary adults supporting students with ASD. The goal was to understand the perspectives of implementing individual training for para-educators in order to improve instructional support to students on the autism spectrum. The study was designed to gain an understanding of the training themes and methods that para-educators identified as most beneficial in their work.

For this qualitative multiple case study, through purposive sampling, the researcher focused on four participants from the Mayflower Elementary, a public school in the Queens School District. Although additional research is needed to determine interventions that would maintain para-educator competencies, the results of this study affirm the potential need for in-depth training of para-educators working with students with ASD, consistent with current legislation calling for more comprehensive training programs (MA DESE, 2010). The purpose of this chapter is to review the findings of this study through the literary lens of current research to determine the implications for current practice and future study.

Research questions

The following questions guided this qualitative multiple case study:
Central Question:
How do para-educators perceive and respond to an individual training program designed to assist them in working with students on the autism spectrum?

Sub-questions:
- What are para-educators understanding of strategies to support students with autism?
- How do para-educators describe their experience in an individual training program?
- What are the training themes that para-educators identify as most important to their work with students on the autism spectrum?

Overview and Discussion of Findings
This qualitative multi-case study was designed to gain perspective from four para-educators working with students with ASD, in their application of ABA protocols, child development, and learning theory, in order to identify their training needs. Although their long-term goal was to help students function to their potential, their daily work with students required dealing with behavioral issues, as well as teaching students necessary skills, that they indicated they were not prepared to handle. Ann expressed during the focus group that at the end of the day she’s thinking, “I made it through another day,” (A., personal communication, April 9, 2014). Kate wrote in her journal, “Sorry. Not enough time in the day to journal, barely enough time to use the bathroom today. Best part of my day was 3:05,” (K., personal communication, January 30, 2014).

During the three months of this study four para-educators participated in three separate professional development workshops designed to present information and training strategies, and answer any questions related to their work with ASD students. Each professional development presentation used a multifaceted approach of lecture, videos, discussions,
question-answer format, and handouts. The researcher arranged a coaching schedule with each para-educator and their classroom teacher, in order to provide individualized supervision, modeling and feedback as she worked with individual students, for a minimum of two sessions per week. A schedule needed to be arranged with Linda, the classroom teacher so that her coaching time and that of the researcher’s time did not conflict. The researcher also created a schedule for three of four para-educators to receive additional coaching once an additional teacher was hired.

Data collected during the course of this study included information from initial and final interviews, a focus group, questionnaires completed by para-educators, personal journals of para-educators and the classroom coach, and the researcher’s coaching journal, analytic memos, field notes, reflexivity journal, and discrete trial tracking sheets used by the para-educators. The researcher introduced the concept of data-based instruction (DBI), as it is an empirically proven method of individualizing instruction, in the context of providing a one to one format for students with significant learning needs (Webby & Kerns, 2014). All of the participants were positive about participating in the three professional development trainings and were eager to understand how to collect data while working with students on a one to one basis. Although they stated they were looking forward to the individual coaching sessions, there seemed to be some apprehension and nervousness about appearing less than knowledgeable.

As reported in the previous chapter, a number of themes were identified as significant when the data were triangulated and analyzed. The themes were coded as (a) lack of training, (b) unclear job expectations (c) strategies with which para-educators were familiar, (d) strategies with which para-educators were unfamiliar (e) positive experiences/coaching (f)
negative experiences/stress (g) the need for ongoing training and (h) job conditions. Within each of these themes, sub-categories were coded that were organized as they related to the following themes. The data are noted in Table 4.6: Summary of themes and sub-categories.

<table>
<thead>
<tr>
<th>Research question</th>
<th>Themes or Categories</th>
<th>Sub-categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Central Question:</strong> How do para-educators perceive and respond to an individualized training program designed to assist them in working with students on the autism spectrum?</td>
<td>Lack of training</td>
<td>Obtaining training</td>
</tr>
<tr>
<td></td>
<td>Lack of experience</td>
<td>No guidelines</td>
</tr>
<tr>
<td></td>
<td>Unclear job Expectations</td>
<td>Co-teacher vs. clerical role</td>
</tr>
<tr>
<td><strong>Sub-Question 1.</strong> What are para-educators’ understanding of strategies to support students with autism?</td>
<td>Strategies with which paras were familiar</td>
<td>Learned by watching</td>
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<tr>
<td></td>
<td></td>
<td>Trial and error</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limited reinforcement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limited lessons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limited ASD, ABA, DTT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limited behavior strategies</td>
</tr>
<tr>
<td></td>
<td>Strategies with which paras were unfamiliar</td>
<td>ABA, ASD, DTT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adapting lessons</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Behavior strategies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prompt hierarchy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Errorless teaching</td>
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<tr>
<td></td>
<td></td>
<td>FBA, ABC chart</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data Collection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reinforcement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Motivation</td>
</tr>
<tr>
<td><strong>Sub-Question 2.</strong> How do para-educators describe their experience in an individual training program?</td>
<td>Positive Experiences</td>
<td>Confidence</td>
</tr>
<tr>
<td></td>
<td>Coaching</td>
<td>Comfortable</td>
</tr>
<tr>
<td></td>
<td>Negative Experiences</td>
<td>Helpful</td>
</tr>
<tr>
<td></td>
<td>Stress</td>
<td>Supervision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Feedback</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Training too long</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No time to integrate training</td>
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<td></td>
<td></td>
<td>Schedule changes</td>
</tr>
<tr>
<td><strong>Sub-Question 3.</strong> What are the training themes that para-educators identify as most important to their work with students on the autism spectrum?</td>
<td>Training Protocols</td>
<td>No time for questions or feedback,</td>
</tr>
<tr>
<td></td>
<td>Job Conditions</td>
<td>No time for DTT</td>
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<tr>
<td></td>
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<td>Access to IEP</td>
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<td></td>
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<td>Entry level position</td>
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<tr>
<td></td>
<td></td>
<td>Stress</td>
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<tr>
<td></td>
<td></td>
<td>Lack of staff</td>
</tr>
</tbody>
</table>

Table 4.6: Summary of Themes and Sub-Categories
The findings and conclusions will be explained within the context of each of the research questions, applying the results highlighted in chapter four, the theoretical framework and literature review. The study’s findings are supported through the use of para-educator interviews, a focus group, questionnaires, and journals. The researcher maintained a coaching and reflexive journal, analytic memos, and field notes based on observations, turning the experiences para-educators describe into data that was rigorously collected and analyzed.

**Use of theoretical framework**

The theoretical framework that guided this study was based on the application of self-regulatory abilities as part of social cognitive theory that includes goal directed behavior and motivation, self-monitoring, and self-evaluation (Zito, Adkins, Gavins, Harris & Graham, 2007). Using the constructivist approach, (Prawat, 2003) the instructor or coach is viewed as a facilitator who organizes activities for learners to discover their own learning, stressing the use of experiential learning and hands-on learning (Jaramillo, 1996). The problem identified within this research study is that para-educators lacked the necessary trainings that would enable them to work effectively with ASD students. The coaching/modeling approach, in addition to traditional professional development was a means of individualizing the training by offering feedback and supervision in real time to meet the actual challenges presented by their students.

A comprehensive review of the literature was conducted to analyze what is known about para-educator training and preparation in order to understand how to best meet the training needs of para-educators assigned to working with students on the autism spectrum. The first strand of literature investigated the historical role of “teacher’s helpers” in the classroom, which began during the 1940’s as a clerical role and has evolved as a means of assisting and providing direct services (Lewis, 2005). The second strand of literature examined
the expectations and requirements, including federal regulations, for para-educators working with students with autism. The third strand identified areas of competency-based training for para-educators working with students with autism. Early intensive behavioral intervention based on applied behavior analysis (ABA) has been identified as the treatment of choice for children with autism (Thomson, Martin, Arnal, Fazzio, & Yu, 2009).

**Discussion of the central research question**

The purpose of this research study was to determine how para-educators describe their experience in an individual training program and to identify the training strategies and themes that are most important to their work with students with ASD. Ultimately, para-educator responses made it clear that prior experiences, training, and ideas about their roles and expectations were central to how they experience the individual training. A one-time training of historical knowledge of special education and a review of experiences is not sufficient for para-educators to remain current (Delmolino & Harris, 2012). By providing three days of specialized training and expertise through professional development workshops as well as on the job coaching, para-educators had greater exposure to a variety of protocols to assist them in determining the most effective interventions to establish para-educator competency.

Consistent with the hiring practices of the para-educators in this study, para-educators are often hired with little or no previous experience in working with ASD students and little or no course work in special education. In this case, the public school system did not provide professional development training to para-educators before they assumed their positions or while they worked with students. As reported by the para-educators, professional development was not designed specifically to meet their needs and classroom teachers had limited time to offer supervision or support. As a result, para-educators working with students with ASD, have
taken on more responsibility in the classroom including instructional support, working on such tasks as discrete trial training, and are often left to fend for themselves, functioning as the primary teacher (Giangreco 2010).

The schedules of the participants in this study often changed without notice, as they were impacted by the staffing needs of the building on any given day. Coaching schedules needed to be flexible to accommodate the participants’ needs. Para-educators stated that although more students were entering their programs, they anticipated that current level of staffing would remain the same. Para-educators were expected to support teachers in the use of evidence-based practices requiring that they collect data for the classroom teacher, which requires technical knowledge of discrete trial training and behavior management techniques. Aligning with current literature, the para-educator is expected to provide the most technical program in a school with minimal or no training, and often in the absence of supervision (Broer & Edelman, 2001).

According to an update in policy provided by the Massachusetts Department of Elementary and Secondary Education (2010), para-educator requirements of No Child Left Behind apply to school-wide programs without regard to how their position is funded, requiring that para-educators complete two years of college study or an associate’s degree. The Mayflower School required new para-educators who did not have an associates degree or college credits take the Para Pro examination. Three of the para-educators were required to take the Para-Pro exam and stated that the preparation required for the exam and that the exam itself was not helpful and was irrelevant to their work with ASD students. Heidi stated that she was unfamiliar with ABA, data collection, and the learning domains since special education was not
included in her Master’s degree courses in early childhood education (H., personal communication, April 9, 2014).

Prior experience and knowledge of autism is a crucial factor in order for para-educators to effectively support both students with ASD and the classroom teachers (Symes and Humprey, 2011). None of the participants in this study had specific knowledge of autism through course work or workshop training. Three participants had prior experience as para-educators, ranging from one to five years. Anne had the least experience as a para-educator, this being her second year in the district, but her first year in the capacity as para-educator, yet working in the most demanding sub-separate classroom of students with ASD. Anne and Diane had no prior training before the district hired them and no training prior to their assignment to their current positions. Kate was a recess monitor and Heidi was a secretary prior to being hired in their current positions. They both recalled confidentiality and restraint training but no training linked to working with students with autism.

Kate described the students she worked with as “tough kids,” (K. personal communication, December 16, 2013). In fact Diane reflected that her initial work assignment in the district gave her a feeling of being “thrown into” her position (D., personal communication, December 13, 2013). Diane worked in an integrated preschool classroom and made reference to “heavy hitters” as the most challenging students being “thrown into her room.” Anne referred to her class and its students as the most difficult of all of the preschool classes (A., personal communication December 17, 2013). Prior to the training, three para-educators were able to identify at least one learning issue associated with students with ASD, identifying difficulty with social skills, transitions, and social anxiety. Diane was unable to identify any learning issues associated with ASD. Three out of the four para-educators were unable to identify any
similarities of students with ASD have in common with their peers. Heidi was the only one who described, “They are all capable of learning and understanding things,” (H., personal communication, December 20, 2013).

**Lack of Training**

Adequate training maximizes the effectiveness of educators provided it is competency-based, systematically planned and ongoing (Hall, Grundon, Pope, & Romero, 2010). During the 2013-2014 school year there were no trainings arranged specifically for para-educators working in special education classrooms by the school district. All four para-educators in this study indicated that the district-wide professional development was inadequate. Anne reiterated that the district had not offered training specifically to address the needs of para-educators and did not provide any information pertaining to autism spectrum disorder (A., personal communication, April 9, 2014). Heidi estimated that fifty percent of the professional development was not designed for para-educators; instead, professional development is offered with the purpose of meeting the needs of classroom teachers, (H., personal communication, March 17, 2014). Kate stated, “It’s foolish for us to even go to some of these things” since topics are relevant to older students. (K., personal communication, March 12, 2014). She referenced the researcher’s training to indicate that the district finally had professional development that was relevant for para-educators. There is growing recognition that staff development for para-educators can be key to increasing the success of the students they work with (Blankenship, 2014). However, education is not a one shot deal. Rather than large group professional development, models that include individual coaching appear to be the most successful in providing sufficient training time based on real-life experiences (Steinbacher-Reed & Power, 2012).
Para-educator training has fallen into three categories: on the job, in-service and pre-service training. The most important aspect of any training being that it builds knowledge and skill in an ongoing manner (Hall, Grundon, Pope, Romero, 2010). None of the para-educators in this study received any training prior to being hired. The para-educators in this study had been using trial and error and learned by watching in the absence of principles of childhood development, learning theory, or ABA protocols provided. When asked for their feedback on coaching, all para-educators identified coaching and modeling as the most helpful part of the entire training in terms of showing them effective ways of working with their students. During the focus group Diane observed, “I think that it’s nice to see things for yourself when you’re learning from either the video or lecture. It was nice to have the opportunity to do some of those things (during coaching) myself,” and “You see it really works,” (D., personal communication, April 9, 2014). Kate expressed the idea of having a coach on staff to provide feedback (K., personal communication, March 17, 2014). Anne believed that “first hand observation of the modeling of protocols with the students they were familiar with was very helpful,” (A., personal communication, April 9, 2014).

Unclear Job Expectations

The role of para-educators has dramatically changed from that of clerical staff as a result of teacher shortages, and the rising enrollment of students with disabilities. This has resulted in para-educators playing an increasingly critical role in providing instruction and direct services to students. (Lilloran, Peters, Templeman & Udell, 2001). All four para-educators in this study were expected to work in the office, replace absent staff, cover lunch, recess and dismissal, in addition to addressing individual student needs. Heidi stated, “I think that the demands of the position have changed over the years, and I think that kids are getting
more difficult. There are more diagnoses out there than what there ever had been,” (H., personal communication, April 9, 2014). Diane also indicated that her teacher was out often and she was responsible for running the class by herself in addition to her office responsibilities, and filling in when there were staff shortages (D., personal communication, April 9, 2014).

Para-educators are assisting in providing services that include applying positive behavioral supports to address disruptive behavioral issues for students with autism (Webster, Blanchford, Bassett, Brown, Martin, and Russell, 2010). Anne stated during her initial interview (December 17, 2013) that she was most challenged by students with aggressive behaviors that included biting, hitting, and bolting. She had little time to speak to her classroom teacher about this. She expressed that there were too many children with a variety of behaviors that resulted in a lack of supervision from the classroom teacher. Research has identified a lack of joint planning time that allows para-educators to ask questions and receive feedback from teachers as a major concern (Berber & Dei, 2009).

**Discussion of first sub-question**

Knowledge of effective teaching techniques in relation to behavior, communication, sensory issues, reinforcement and motivation are essential for para-educators, in order to effectively support students with ASD (Koegel & Schreibman, 2009). The first research sub-question sought to identify what were para-educators understanding of specific strategies that support students with ASD. In an attempt to determine specific protocols and methods para-educators understood and applied with students with ASD two variables were identified; strategies that para-educators were familiar and strategies with which para-educators were unfamiliar. Kate was the only para-educator who had previous experience, albeit limited, in
understanding students with ASD, modifying lessons, applying ABA discrete trial protocols, and behavioral strategies. She learned about discrete trials by watching the classroom teacher in a prior class assignment.

Kate indicated that the ABA video was helpful as a refresher for her and would prove beneficial when the teacher requests that she work individually with students and collect data (K., personal communication March 12, 2014). The three other para-educators had no knowledge or training using ABA, DTT, and addressing behavior, stating that they learned to work with students with ASD by watching other staff and by trial and error.

All four para-educators were familiar with the concept of providing feedback to students by verbalizing “good job” for completion of a task well done. However, they were not familiar with providing tangible reinforcements to motivate students who do not yet respond to verbal praise. None of the para-educators had knowledge of the prompt hierarchy or errorless teaching techniques that are used for all students, not just those on the autism spectrum. Para-educators need to be skilled in the use of discrete trial training, naturalistic teaching, visual support, communication, social skills methods and curriculum (Schuermann, Webber, Boutot, & Goodwin, 2003).

Discussion of second sub-question

One of the most promising approaches for equipping para-educators in current literature includes on-site coaching and in vivo performance feedback within classroom routines as compared to traditional in-service workshops and lectures (Koegel, Robinson & Koegel, 2009). The second sub-question addressed how para-educators described their experiences in the training program. Para-educators were asked to describe their experiences in the professional development workshops and during individual coaching, which generated both positive and
negative perspectives. All participants were comfortable with the coaching process, as well as the protocols that were introduced. They stated that the feedback and supervision gave them confidence in using approaches that are effective with students with ASD. Although it is common for the special education teacher to coordinate the work of para-educators, a lack of joint planning time and supervision to enable para-educators to ask questions and receive feedback from teachers was a common occurrence (Berber & Dei, 2009).

Para-educators expressed that they had limited or no time to integrate the protocols they learned during the training, including ABA, due to the changing demands of their position. Diane stated that her classroom teacher was out often and as a result she needed to run the classroom by herself (D. personal communication, April 9, 2014). Her para-educator/teacher role was in addition to her responsibility to cover the office and fill in for staff shortages in other classes, which resulted in her feeling overwhelmed. According to Heidi, “We’re always picking up somewhere. So not only are we doing our job, we’re doing someone else’s as well,” (H., personal communication, April 9, 2014). Even though the use of para-educators in the education of young children with ASD is a common practice, research that examines the consistent use of applied behavioral analysis and discrete trial procedures by para-educators is scarce (Hall, Grundon, Pope, Romero, 2009).

Within this context, Anne stated that the training was too long (A. personal communication, April 9, 2014). This was due in part, to the delay in hiring a second teacher for Linda’s classroom class. This delay extended the project by almost a month. However, all four para-educators stated that they did not anticipate how in-depth and demanding the training was. Anne suggested that all of the professional development trainings be spaced closer together. Prior to the commencement of training, the special education director asked all para-educators
to decide if they preferred that the three professional development trainings take place after school or if they preferred to follow the district’s professional development schedule. The majority of the participants preferred to follow the district’s schedule. Schedule changes, such as changes to accommodate coaching, created additional stress for Kate who indicated that even though she believes collecting data was helpful, she viewed it as another required task she needed to do (K. personal communication, March 19, 2014).

**Discussion of third sub-question**

Crawford (2005) found that there were essential skills that para-educators needed in order to effectively support students with ASD: prior experience and knowledge of effective teaching techniques in relation to characteristics of learners, behavior, communication, sensory issues, reinforcement and motivation. The third sub-question identified training themes that para-educators identified as helpful them in their role, based on their experiences and expectations of the training. All of the participants had no prior knowledge of autism, and had no formal training in working with students with ASD. During the focus group Anne recalled how her awareness of using reinforcement had changed when she recently implemented behavioral strategies. She was now cognizant of the need to ignore or redirect rather than reinforce negative behaviors. By the end of the training Anne realized that providing intensive behavioral intervention requires clear instruction, reinforcement of desired behaviors, and incremental teaching (Leaf & McEachlin, 1999).

Based upon the responses to questionnaires that were distributed during professional development, all four para-educators consistently identified learning about autism, behavioral strategies, reinforcement, and similarities and differences between students with ASD and typical peers as training topics that were most important to them. Three of four para-educators
also indicated the need to understand cognitive and social skill development and the use of motivation with students. Two of the four participants chose discrete trial training and errorless teaching as additional relevant training themes.

Table 4.7 identifies the primary thematic codes and occurrences of training topics, in the data collected. The Hyper Research software generated a frequency table. The coaching journal and para-educator journals were color coded by hand and included in the frequency chart.

<table>
<thead>
<tr>
<th>Corresponding Codes</th>
<th>Frequency</th>
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</thead>
<tbody>
<tr>
<td>ASD</td>
<td>23</td>
</tr>
<tr>
<td>Knowledge of ABA</td>
<td>25</td>
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<tr>
<td>Behavior Management</td>
<td>45</td>
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<tr>
<td>Prompt hierarchy</td>
<td>21</td>
</tr>
<tr>
<td>DTT, data collection</td>
<td>35</td>
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<td>3</td>
</tr>
<tr>
<td>Motivation</td>
<td>7</td>
</tr>
<tr>
<td>Reinforcement</td>
<td>35</td>
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Table 4. 7: Training Themes/Essential Categories Coded by Frequency

Unanticipated Findings

During the initial training session, para-educators were provided with examples of how discrete trial objectives are formatted by referencing student goals and objectives from the Individual Education Plan (IEP). This discussion revealed that all of the study’s’ participants as well as para-educators district-wide, did not have access to IEPs. This dichotomy of role importance was evident when the study began. Each student’s IEP contains the goals and objectives that identify what that student is expected to learn for the coming year, which the para-educator is expected to address. Yet, para-educators were not allowed to see the IEPs of
the students they were working with. This was the district’s approach to maintain confidentiality, which was reversed before the study ended. This leads one to question what the instructional expectations of para-educators are and how para-educators could view themselves as valued members of the educational team when such job conditions result in their exclusion.

All participants cited external pressures that impacted the benefits of the training and their ability to carry out their roles. All para-educators believed that all of the classes at the Mayflower School were understaffed and more para-educators were needed. Anne believed that the students in her class “should have one to one ratios,” (A. personal communication, April 9, 2014.) Heidi felt that she was leaving her teacher “hanging” when she went into Linda’ room for the training, since there were no other staff to replace her, even on a short-term basis, (H., personal communication, April 9, 2014). Diane stated that more staff would provide para-educators with more time to work with students. All of the para-educators were stressed by their lack of time, deterring them from integrating new strategies they learned during the training into their daily routine. Anne included that she had no time to complete her journal. She stated, “When I leave work I’m thinking I made it through another day,” and did not want to think about work or related responsibilities such as completing her journal (A., personal communication, April 9, 2014).

Additional on the job stresses seemed to be a result of how each teacher ran their program. Anne and Kate stated that it was difficult to do discrete trials with so many students with behavioral issues and the noise levels of their rooms. Anne expressed that she had limited time to ask for and receive additional direction from the classroom teacher when dealing with children with behavioral issues. Kate suggested the hiring of a permanent coach would be beneficial in providing more direction and supervision in the classroom.
A double standard of educational services is created when students, such as those at the Mayflower School, spend 80% or more of their time with untrained para-educators who make the majority of curricular and instructional decisions. This would be unacceptable for a typical student (Giangreco, 2005). Clarification of their role and assignment along with ongoing training and supervision is imperative. Heidi defined the role of para-educator when she stated,“ It’s pretty much like an entry-level position really. It’s an important position too, and I think that it needs to be treated that way. And I don’t think that it is,” (H., personal communication, April 9, 2014.)

Credibility and Trustworthiness

Seven characteristics for good qualitative research emerged that include (1) carrying out ethical research; (2) importance of the research; (3) clarity and coherence of the research report; (4) use of appropriate and rigorous methods; (5) importance of reflexivity or attending to researcher bias; (6) importance of establishing trustworthiness or credibility; and (7) importance of verification or reliability (Cohen & Crabtree, 2008). Conducting ethically sound research meant this study was carried out in such a way as to be honest, respectful, and humane and with empathy. The researcher demonstrated that established methods were theoretically based and ensured that the epistemological and theoretical mindset of the researcher was clearly stated in the study. A hallmark of good research is understanding and reporting relevant preconceptions through reflexive processing (Cohen & Crabtree, 2008). The researcher used reflective journal keeping throughout the study to track ongoing interactions, emotions in response to situations and problems, as a way to reflect and understand the researchers’ motivations and preconceptions. The researcher kept a coaching journal to log observations and conversations, identify evidence of strengths and need areas, and to conduct member checks
with para-educators. Analytical memo writing served to triangulate and add credibility to this study; value and rigor were enhanced by controlling bias.

Clarity and coherence of the study were attained with a carefully edited description of the research question, and with background information pertaining to participants, how they were chosen, how data were collected and analyzed, and the rationale for the use of case study methodology. Good research makes the aims and objectives of the research and research questions clear for which appropriate methods are selected (Meyrick, 2011). The original central question, “How do para-educators perceive and respond to an individual training program designed to assist them in working with students on the autism spectrum?” was too broad. It became clear that issues of prior experience, training and ideas about roles and expectations were central to how par-educators experienced the training. The researcher subsequently reworded the question to better reflect the themes emergent to the data.

Rigor applied across all parts of the research process, including selection of sources of data and data collection. Rigor is seen as transparency or disclosure of all relevant research processes and systematicity, the use of regular data collection, and an analysis process that addresses any deviations in which they are described (Yardley, 2000). The researcher provided sufficient information, from data collection to conclusions drawn, incorporating criticism relating to change in the length of the study as a result of staffing changes at the study site.

The researcher addressed the concept of trustworthiness by building a rapport with participants in order to collect accurate data that included in-depth interviews, focus group, member checks, detailed descriptions of professional development workshops, questionnaires, and coaching sessions, and enabling participants to share their perceptions and experiences. Patterns of responses were provided by the researcher, using direct quotes and examples from
participants to clearly illustrate the evidence and thought processes that lead to any conclusions. Through the careful analysis of data the researcher applied rigor to demonstrate how themes emerged and how the data shaped the conclusions.

Internal validity or verification refers to truth about claims, with the question of how research findings match reality (Merriam, 1998). The researcher provided rich descriptive details about the setting, the researcher’s role, how data were collected, descriptions of the content, perspectives of themes, and how and why any change in focus took place. This includes how an analytic procedure was consistently applied. For example, participant statements related to the training were categorized as negative and positive experiences. Categories of familiar and unfamiliar were used to address strategies and protocols germane to ABA and learning theory. The process of data collection was detailed enough to confirm the generation of categories and conclusions (Meyrick, 2006) The researcher followed the guidelines for case study protocol, using multiple sources of evidence, using member checks, establishing a database, and completing data collection and analysis, for maintaining a chain of evidence as set forth by Yin (2009).

When referring to qualitative research, reliability refers to whether the results are consistent with the data (Merriam, 1998). According to Yin (2009) a study would be considered reliable if one conducted the same project following the same procedures with the expectation that the results would be the same. As the results are applicable to other studies that identify the training needs of para-educators working with students with ASD, the level of reliability is elevated. The researcher used an independent auditor to assess the processes used in research, describing in detail how data were collected, how categories were derived, and how decisions were made throughout the three-month research project. The researcher used a member of the
Hyper Research consulting team, who reviewed each participant’s transcription and coding, confirming that the findings were consistent with the data and analysis. This helped to confirm objectivity between the researcher and the data.

**Areas of Vulnerability and Limitations**

Case studies have been proven particularly useful for studying education innovations and evaluating programs (Charmaz, 2006). The purpose of this case study was to determine para-educator needs in working with students with ASD in one elementary school. The small number chosen through purposive sampling served to highlight the understanding and perceptions of para-educators related to the topic of research. Conducting such a study with four participants does not guarantee the findings would be the same for all para-educators within the district. However, the study aimed not to provide generalizable findings and conclusions but rather to provide an interpretation of thoughts and experiences of para-educators who worked with students with ASD. By focusing on a small number of participants it has been possible to give a voice to para-educators experiences, insights and understanding.

One of the criticisms of the participants was that the three professional development workshops were spaced too far apart. The trainings followed the district’s scheduling of staff professional development with the first two trainings held on December 4th and 11th. The third professional development date needed to be extended from February 12th to March 12th, when a district in-service was rescheduled due to a snowstorm. Although coaching sessions provided by the researcher were continued between workshop presentations, the coaching provided by the classroom teacher was delayed several times until an additional staff member was hired in February. Para-educators mentioned that their stress levels were elevated when changes were
made to their schedules. All para-educators attended all of the training sessions. One para-educator was unable to attend the final focus group.

Qualitative case studies are dependent upon the sensitivity and experience of the researcher. The researcher, as the primary instrument of data collection and analysis, is also dependent upon personal instincts and ability to make purposeful observations and interview participants. The researcher was a novice at interviewing subjects, initially relying directly on written questions. As the study progressed the researcher became more comfortable with the process and applied follow-up questions, reformatting questions to ascertain information that may not have been provided by participants during the initial interview. Although the researcher made every effort to ensure the privacy and confidentiality of participants, para-educators may have withheld information that they felt would be harmful to their employment.

Although subjects were chosen through purposive sampling the actual selection of subjects was completed by the school’s special education director. The selection of the kindergarten para-educator (Heidi), who did not work with preschool students with ASD, meant that accommodations needed to be made to assure that she was provided with opportunity for a similar level of participation as the other para-educators. Accommodations needed to be made so that she could participate in the coaching provided by the classroom teacher. Although the building administrator was very helpful, it meant arranging additional participation time within an already tight schedule.

The position of coach, assumed by the researcher, was a means of providing on the job training to para-educators; there is no staff person who currently functions in this role. The intent for using this method was to determine if this method of professional development would prove effective. A case could then be made to replicate this model, thereby providing para-
educators with more direct support within their classrooms. Linda was the only teacher among the preschool and kindergarten teachers who was trained in the use of discrete trial and ABA protocols. She indicated she had too many students and was too busy to individually train each para-educator. Although one of the most promising approaches to equipping para-educators appears to be on-site coaching (Carter, O’Rourke, Sisco, & Pelsue, 2010), as public schools face diminishing funds, it is uncertain whether a coaching position for the purpose of staff training will be considered.

The process of generalizability in qualitative research is arrived at by recognizing similarities and patterns in issues both in and out of context; learning to what extent a study’s findings apply to other situations and individuals (Merriam, 1998). Since the general lies in the particular, the themes that emerged in this particular case study, although limited in size, can be transferable to similar research, with the study of additional cases or by attempting to replicate this case study’s findings. The researcher chose this topic of study based on the limited amount of research in this area and the importance and impact of its findings. However, the importance of the study is left for the reader to judge (Yardley, 2000).

**Implications for Theory and Research**

The number of students with ASD in public schools has increased resulting in increased utilization of para-educators in special education. A number of developments have contributed to this growth that include the advancement of the inclusion model, bringing greater numbers of special needs students into community schools, and the introduction of literacy and mathematic strategies (Giangreco, 2010). The literature review of this case study indicates that the majority of teaching assistants supporting students with ASD typically begin work with no prior experience in working with children with ASD and receive minimal or no training (Symes
and Humphrey, 2011). The results of this research project corroborate the literature in that the participants had no prior experience prior to employment at the Mayflower School, and limited or no training to prepare them to work with students with ASD. There is a paucity of research regarding the most effective format for delivery of professional development including specific strategies and protocols that need to be presented during training sessions to enhance para-educator performance.

This study focused on para-educators who worked with preschool and kindergarten students with ASD. Additional research could focus on para-educators working with elementary, middle and high school students with ASD and their specific training needs. Since the coaching model has proven to be more effective than the presentation of a single three hour workshop (Liken, 2003), administrators may want to consider the consultation of coaching services or the addition of that role to their staff, to assist newly hired or untrained para-educators working throughout their districts.

With ABA, child development, and classification of learning skills and domains at its core, a curriculum and assessment tool could be used to develop a system-wide competency-based training to prepare para-educators to work with students with ASD. According to NCLB regulations (2006) the minimum requirement for currently hired para-educators is completion of two years of study at a college or an associate’s degree. The foundations of this training can be applied to a curriculum that can be offered through undergraduate coursework.

It is the expectation of the researcher that this study will stimulate further research. Specifically, additional research in identifying and implementing the necessary components of a training program for those para-educators who work with ASD students would enhance the limited amount of efficacious information currently available. This study identified the need for
clarification and expectations of the para-educator role. Despite the belief that para-educators are an essential support for students with disabilities, (Webster, Blatchford, Brown, Martin, & Russell, 2010), the participants in this study disclosed that their role was viewed as “low-level,” “or “entry-level,” even though they believed that their role was just as important as that of the teacher (April, 9, 2014). Additional research could document the positive effects of support provided to para-educators to increase their motivation, to improve their performance, and to enable them to feel more connected as a member of the classroom team (Hall, Grundon, Pope, Romero, 2009).

Implications and recommendations for future practice

One implication that arose during the course of this study deals with its central question, the need to train para-educators working with ASD students using ABA protocols and learning theory. The effective deployment of trained classroom staff can be critical in ensuring that students with ASD are adequately trained with basic skill sets and have the opportunity to reach their potential (Webster et al, 2010). To that end, although district professional development training is currently in place, the district may want to consider enhancements to meet the specific needs of para-educators by offering multi-sensory in-service training on a regular basis, including video training programs rather than lecture format only, which para-educators identified as the most helpful part of the three professional development sessions.

The hiring practices of para-educators at the Mayflower school were aligned with IDEA (MA DESE, 2003), in that the para-educators who did not have two years of college coursework or an Associates degree were required to take the Para Pro exam. However, the participants in this study expressed that the material covered in the Para Pro exam was irrelevant to the ASD classroom and did not prepare them to work with students on the
spectrum. Therefore, one recommendation is to develop a formal assessment that would follow professional development workshops and coaching, based on an ABA curriculum, child development, early childhood education issues, professional behavior, and work ethics (Appl, 2006) that could be used to measure their capacity to meet an assignment with students with ASD.

A second recommendation is to develop a portfolio review process for para-educators that would document their mastery levels of competencies required for their position, similar to one established by the Oregon Department of Education (Killoran, Templeman, Peter, & Udell, 2001). The accumulation of coaching sessions and professional development workshops could comprise a coordinated statewide professional development program, which could ultimately be applied to a para-educator certification. Currently only ten states, excluding Massachusetts, have implemented requirements for certification for para-educators with instructional duties (Education Commission of the States, 2012). Credit-based college courses that enhance the performance of para-educators working with students on the autism spectrum, could also lead to a para-educator certification.

A third recommendation is to ensure that classroom teachers of students with ASD are trained in ABA and can have time to supervise para-educators. Special educators report spending much of their time completing paperwork, conducting evaluations, attending meetings, and leaving para-educators left to fend for themselves as the primary teacher of students with disabilities (Giandreco, 2010). Based on the feedback from three of the four para-educators in this study, the classroom teachers need to provide sufficient time for para-educators to integrate new strategies and carry out discrete trial training (DTT) for those students who need it. The participants in this study identified the need for the room to be
arranged in such a way that DTT can be carried out in a quiet setting free from distractions. Para-educators in this study stated that they would like input into arranging the classroom with the teacher, applying what they learned from a successful program designed for students with ASD, and citing the *Bridges Program* (2011).

The fourth recommendation is to enhance the professional development model by providing a coach for para-educators over the course of the entire school year, specifically for those para-educators with limited or no previous training. When on the job coaching is added subsequent to training sessions, about 90% of para-educators will be able to understand and apply concepts on the job (Joyce & Shower, 1996). Most often participants in this study relied on the teacher to give them instructions on what to do. However, classroom teachers had limited interactions with para-educators. Coaching was described by the participants as individualized, provided in real time, and it allowed for hands on experiences to try new approaches. The participants of this study also thought it would be important for all para-educators in the building to take part in this training so that they could support each other during times of reassignment.

**Conclusion**

The researcher worked for many years as a special educator of ASD students with para-educators. This background provided an opportunity to understand the limitations of untrained para-educators, its impact on students, and the need to address their lack of training. The purpose of this study was to understand the training needs of para-educators and to determine from the para-educators’ perspective, the training strategies, themes, and approaches that will guide them in their work with students with ASD. With the requirements set forth by NCLB, the current literature corroborates the need to train para-educators working with students with
autism. However, the literature provides limited information regarding the most effective format of delivery for professional development as well as the necessary components of such a training program. The literature also lacks specific recommendations for training strategies and protocols that are needed to enhance the performance of para-educators who work with students with ASD. Throughout this qualitative multiple case study, the researcher explored the understanding and perceptions of para-educators as they responded to an individual training program, a vantage point that is missing in existing literature.

Twenty-three states now have more special education para-educators than special educators on staff (Webster, Blatchford, Bassett, Brown, Martin, & Russell, 2010). Yet para-educator preparation remains one of the weakest elements of effective programming for children with autism (Schuermann, Webber, Boutot, & Goodwin, 2003). This study was based on a social cognitive and constructivist theoretical framework where students learn best by taking control of their own learning, and developing their own goals. This researcher believes that the coaching and professional development format used in the present study encourages para-educators to take an active role in their own learning. Although additional research is needed to verify interventions to develop and maintain para-educator competencies, this study provides preliminary research-based guidelines so that practitioners may begin to develop training programs that will meet the needs of students with ASD. Additional research that would support the findings of this study, may eventually lead to the implementation of a standardized training program and certification for para-educators working with students with ASD.
References


Finke, E.H., McNaughton, D. & Drager, K.D. (2009). All children can and should have an opportunity to learn: General education teachers’ perspective on including children with Autism Spectrum Disorder who require AAC. *Augmentative and Alternative Communication*, 25(2), 110-122. doi: 10.1080/107434610902886206


Larsson, E.V. (2008). Intensive early intervention using behavior therapy is the single most widely accepted treatment for autism: It is no longer to be considered either an experimental or an investigative treatment. The Lovaas Institute for Early Intervention Midwest, 1-28. mwinfo@lovaas.com


Appendix A

Letter Seeking Permission from the Special Education Director

Dear Mrs. Maniglia,

My name is Michele Sherwin. I am a doctoral student through Northeastern University earning a doctorate in Education.

As part of my program, I am conducting research to understand how para-educators describe their experience in an individual training program and to understand what training themes and strategies para-educators find most important in supporting their work with students with autism.

I am writing to you today in order to seek permission to conduct research among your faculty members. Should you consent, I would ask interested para-educators to participate in an initial and final interview, and focus group, for the duration of approximately thirty minutes each. In addition, at the conclusion of each professional development training, para-educators will be asked to respond to a brief questionnaire about the training. A token gift will be offered to each participant, and para-educators can participate at a mutually convenient time and location so as to not detract from their school obligations.

There are no known risks or discomforts associated with this study. The expected benefits associated with participation in the study are that the information about experiences in an individual training program can help schools and educators determine what training themes and strategies para-educators find most important in supporting their work with students with autism.

Your approval in no way obligates para-educators to participate in this study. Consent to participation is entirely optional, and participants may opt out at any point. Should you have questions about the study, you may contact the researcher, Michele Sherwin at sherwin.m@husky.neu.edu or Dr. Carol Young, principal investigator, at c.young@neu.edu.

Should you have any questions about rights of a research participant, you may contact Nan C. Regina, Director, Human Subject Research Protection, at irb@neu.edu.

Thank you very much for your consideration. Should you approve this request, please sign the below:

I, __________________________ (insert name), hereby give Michele Sherwin permission to contact para-educators at __________________________ (insert school name) in order to conduct research. Individual para-educators may, then, decide whether or not to participate individually and may opt out at any time.

Signed: ______________________ Date: __________________________

Sincerely,

Michele Sherwin, researcher
Appendix C

Letter to Potential Interview Participants

Dear Para-educator,

My name is Michele Sherwin, and I am a Special Education Administrator at the Schwartz Center for Children in Dartmouth. I am also a doctoral student through Northeastern University College of Professional Study, earning a doctorate in Educational Leadership.

As part of my program, I am conducting research that looks at how para-educators describe their experiences in an individualized training program specifically designed to address the needs of students with ASD. The purpose of this study is to understand your experience and determine what training themes para-educators find most important.

I am writing to you today in order to ask you to participate in my study which includes an initial and final interview, professional development and questionnaire, on-site coaching, and voluntary participation in a focus group. The initial and final interviews and focus group will last approximately 30 minutes each at a mutually convenient time and location. The professional development training will be offered as part of the Dartmouth Public School’s district-wide professional development. A $15 gift card to Kohl’s will be offered as compensation. Additionally, all participants will have the opportunity to review the findings.

This study is open to four para-educators who currently work with students with autism at the elementary grade level.

There are no known risks or discomforts associated with this study. The expected benefits associated with your participation are that the information about your experiences and perceptions regarding the training of para-educators may help stakeholders work together to align a training program for para-educators in order to create the best possible learning environment for students with autism.

Consent to participation is entirely optional, and you may opt out at any point. Additionally, all responses will be 100% confidential. Should you have questions about the study, you may contact the researcher, Michele Sherwin at Sherwin.m@husky.neu.edu or the principal investigator, Dr. Carol Young at c.young@neu.edu.

Should you have any questions about your rights as a research participant, you may contact Nan C. Regina, Director, Human Subject Research Protection, at irb@neu.edu.

As a former classroom teacher of ASD students, I know how busy you are with all of your responsibilities, so I thank you in advance for your time and for contributing towards this research that I feel will help identify para-educator training needs.

Sincerely,

Michele Sherwin, researcher
Appendix C

Para-educator Initial Interview  Part A

First Name: ___________________  Date: ___________________

1. How long have you been a para-educator at this school? In previous positions?

2. What, if any, prior training have you had to support you in your role as a para-educator?

3. Why have you decided to work as a para-educator?

4. What is your favorite part about being a para-educator?

5. What is your understanding of the requirements of this position?

6. Have you had experience providing instructional support to students with ASD either in a small group or one-to-one basis?

7. What are your strengths as a para-educator?
8. In what areas do you feel you can use instructional support or guidance?

9. What are some differences between students with ASD and typically developing students?

10. What are some similarities between students with ASD and typically developing students?

11. What do you feel is important for you to know about the students with whom you work?

Para-educator Interview Part B

1. What do you believe are important educational goals for ASD students?

2. What experience, if any, have you had in observing or using Applied Behavioral Analysis?

3. What is your comfort level in addressing behaviors and implementing behavior management plans of the students in your class?

4. What teaching strategies or procedures do you use to encourage students to work to their potential?
5. What concerns do you have about your ability to carry out your job effectively?

6. Describe your experience in modifying a lesson or adapting materials.

7. Describe your comfort level in collecting data on student performance.

8. What are your expectations as a participant in this training?

9. What apprehensions do you have about this training?

10. How do you feel about being coached by a supervising teacher and researcher?
Appendix D

Para-educator Questionnaire

Name________________________     Date_____________

Today’s Training Program______________________________________________

Unit Review ________________________________________________________

Please take a few minutes to explain what you thought of this training session.

- Please indicate what you thought of the units covered in this presentation.

- Were these new concepts or was this a review for you?

- Was this presentation helpful to you? If so, how?

- Would you recommend it to other para-professionals; why or why not?
1. Describe your comfort level in working with students with ASD prior to this training.
   Describe your comfort level now.

2. What feelings did you experience throughout the process?

3. You have experienced different forms of professional development offered by the district. Describe how this model fits in with your other experiences.

4. How effective did you find this method of professional development?

5. Was there opportunity to integrate the things you were being taught into your daily routine?

6. How will you apply this training? What strategies would be most effective for you moving forward in your work with ASD students?

7. How can this training be improved?
8. What part of the training could be improved?

9. Do you feel this will change how you deal with students with ASD in the future?

10. Would you recommend more professional development of this type for the district in the future?
Appendix G

INFORMED CONSENT FORM

Northeastern University, College of Professional Studies, Ed.D. Program

Dr. Carol Young, Principal Investigator and Michelle Sherwin, Student Researcher

An Investigation into Best Practices in Training Para-Educators of Students with Autism

Dear Para-educator,

You have been selected to participate in a study designed to understand the benefits of implementing individual training for para-educators in order to improve instructional support to students on the autism spectrum. The results of this project will help the researcher and school staffs gain an understanding of the training themes para-educators find most important.

Your participation is strictly voluntary and that you may withdraw at any time for any reason. There are no adverse effects from this training procedure. Your information will be kept confidential throughout this project. If you agree to participate you will be asked to complete a brief questionnaire following two training sessions that will be presented during two district professional development days. Individual training will be provided during the normal course of your classroom daily routine, within a six to eight week period.

For the purpose of this study, the main source of data will be qualitative interviews. Only the researcher, Michele Sherwin, will be involved in the collection, transcription, coding and analysis of the data.

Please do not hesitate to ask any questions about the study before your participation, during your participation, or after your participation. Once the study is completed, the researcher will be happy to share the findings with you. However, your name will not be associated with the research findings in any way, and only the researcher will know your identity as a participant.

There are no known risks or discomforts associated with this study. The expected benefits associated with your participation are that the information about your experiences and perceptions regarding para-educator training can help schools and educators to align para-educator training practices in order to best serve the needs of students on the autism spectrum.

In order to most accurately record the data during interviews, the researcher requests permission to record the interviews for future transcription. The recording will be kept for approximately

APPROVED

Northeastern University - Human Subject Research Protection
Rev. 10/0/2013
one year and will be kept in an encrypted file on the researcher's password protected computer. After the data is no longer needed, the recording will be destroyed.

Consent to this interview is entirely optional, and you may opt out at any point. Should you have any questions about the study, you may contact the researcher, Michele Sherwin, at sherwin.m@husky.neu.edu or Dr. Carol Young, principal investigator at c.young@neu.edu.

Should you have any questions about your right as a research participant, you may contact Nan C. Regina, Director, Human Subject Research Protection, at irb@neu.edu.

If by reading and understanding the procedures that have been outlined, you consent to voluntary participation, please sign your name.

__________________________
Para-educator Signature          Date

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Rev. 10/05/2013
Appendix G

Part Three: Para-Educator Training

Rescheduled to March 12, 2013

Mayflower Elementary School

Technology Room, 12:30—3:30

Ethical Considerations:

- Review of the eighteen Para-educator codes of ethics
- The CEC Para-Educator Standards Workbook
- Para-Pro sample test to discuss and review

The Bridges Program for Special Needs Pre-School Children

- Video: Program that serves ASD students using discrete trials and integrated setting
- Curriculum Review:
- Review of working terminology
- Troubleshooting techniques using ABA
- Program Goals: what are you trying to accomplish long term?

General Discussion

- Discuss progress on journals
- Discuss which strategies/themes were most helpful and important in their training experience
Appendix H

Focus Group

Welcome and Thank-you for participating in this focus group, as we take the time to talk about training for para-educators working in the public school setting.

Our topic today is:

How do para-educators perceive and respond to an individual training for para-educators who work with students with ASD.

- We’re going to talk about what you liked, what you didn’t like and how training programs might be improved.
- There are no wrong answers but rather different points of view.
- Please feel free to share your point of view, even if it differs from what others have expressed.
- Keep in mind that we are just as interested in negative comments as positive comments and at times, the negative comments are the most helpful.

I am recording the session because I don’t want to miss any of your comments. People often say very helpful things during these discussions and I cannot write fast enough to get them all down.

Please state your first name for the purpose of taping:

1. Think back to the three days of professional development training that included ABA, ASD, Blooms Taxonomy and the classification of learning skills, and the cognitive and social domains, and ABA video training programs available to para-educators, Tell us how you view this professional development training.

2. After having this experience, how do you feel about this type of presentation?

3. Think back to the individual coaching/mentoring sessions either when you worked individually with a student, with Linda or myself as a coach. What do you think of this approach?

4. What specific knowledge or strategies do you feel are necessary to work effectively with ASD and special needs students,

5. What do you like about this proposed training program?

6. What do you perceive as drawbacks, obstacles or personal concerns related to your ability to work effectively?
7. Tell us how you view the training themes or topics presented. Which were most helpful in your work with ASD and special needs students in general?

8. Suppose that you were in charge and could make one change that would make your training /programs better, what would you do?

(Sub-questions) Consider what training themes and strategies were most helpful. How would you describe this individual training experience?

All things considered; suppose you had one minute to speak with your director of special education about para-educator training, the topic of today’s discussion. What would you say?

Summary Question:
- Provide oral summary
- Is this an adequate summary?
- Final Question: Review purpose of study.
- Have I missed anything?
- Is there anything else you would like to include?