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Training needs of paraprofessionals supporting students with autism spectrum disorders

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University

by

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Dedication

To Megan, Amy, and Donna

Regretfully, I did not fully realize and appreciate your talents and skills as paraprofessional warriors. Thank you for helping me grow in ways I never imagined and for being the source of inspiration for this dissertation.

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Abstract

TRAINING NEEDS OF PARAPROFESSIONALS SERVING STUDENTS WITH AUTISM SPECTRUM DISORDERS

By Kira M. Austin, Ph. D.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2013

Major Director: Colleen Thoma, Ph. D.
Professor, Department of Special Education and Disability Policy
School of Education

The purpose of this study was to understand professional development for paraprofessionals supporting students with ASD in Virginia. This understanding was reached through explanatory, sequential mixed methods design. Surveys and interviews provided insight into training practices, training needs, and training barriers. An interpretation of their professional development was developed through considering the perceptions of paraprofessionals supporting students with ASD, teachers of students with ASD, and directors of special education. Findings revealed a lack of supervision, training, and skills. The lack of training and supervision resulted in paraprofessionals learning through trial and error. Paraprofessionals supporting students with ASD felt qualified to complete their duties as a result

of personal disposition and effective supervision. Paraprofessionals supporting students with ASD desired individualized training concerning behavior management. The results of this study provide several recommendations for training content and delivery format. It also provided a theoretical framework for explaining how paraprofessionals supporting students with ASD experience training.

Chapter 1

Introduction

In 2011, public attention was drawn to a lawsuit filed against Bedford County Public Schools after video surveillance was made public showing a bus driver and special education aide allegedly abusing a student with autism (Huffington Post, 2011). Although these particular staff members were dismissed from the public school system, it incited many community members to act concerning the current state of knowledge and training for educational support providers regarding autism spectrum disorders (ASD) in the state of Virginia. This incident led the public to believe that staff needed appropriate training to support students with complex needs and challenging behaviors such as those with ASD. This study sought to examine professional development for paraprofessionals supporting this specific population through a mixed methods approach to determine what training is provided, in what formats, and most importantly, what additional training may be needed in Virginia.

Background of the Problem

Paraprofessional training is lacking. Paraeducators have been employed in public schools for more than 50 years and their roles and responsibilities have significantly evolved over time. Paraprofessionals, also known as paraeducators, instructional assistants, teacher's aides, and learning support assistants, have been increasingly utilized for direct learning support

and less for clerical duties (Carter, O'Rourke, Sisco, & Pelsue, 2009; Giangreco, Broer, & Edelman, 2002a). Several statistics point to the increased utilization of paraprofessionals in various roles within the public education system:

- In 2003, over 634,000 paraprofessionals were employed in public schools with 75% being assigned to work with students with significant disabilities (National Center for Education Statistics [NCES], 2007; Pickett, Likins, & Wallace, 2003).
- 91% of public elementary and secondary schools in the United States have at least one instructional paraprofessional on staff (NCES, 2007).
- The average special education paraprofessional works in five different classes per week and serves 16-23 students (Study of Personnel Needs in Special Education [SPeNSE], 2001).
- The average special education paraprofessional provides support services for as many as 15 students with varying disabilities (SPeNSE, 2001).
- The primary mechanism for supporting students with disabilities in the general education classroom is the use of paraprofessionals (Broer, Doyle, & Giangreco, 2005; French, 2003).

Despite the large portion of students being served through these support personnel, the literature has continued to suggest their roles are largely undefined, trainings are insufficient, and responsibilities are underappreciated (Egilson & Traustadottir, 2009; Giangreco et al., 2002a; Giangreco, Edelman, & Broer, 2001; Howard & Ford, 2007; Liston, Nevin, & Malian, 2009). To deal with the chronic shortage of special education teachers and the growing number of students receiving special education services, paraprofessionals have often been forced to serve in instructional roles for which they are not qualified (Ghere, 2003). As Giangreco and Broer

(2005) point out, “the least qualified personnel are assigned to provide the bulk of instruction and support to students with the most challenging learning characteristics” (p. 10).

Moreover, this group of professionals often enters and stays in the field with minimal or no training to complete their duties (French, 2001; Giangreco & Broer, 2005). This lack of professional development may go hand-in-hand with the persistent lack of effective supervision and evaluation (Breton, 2010; Rutherford, 2011). When queried regarding their training needs, paraprofessionals identified behavior management strategies and characteristics of various disabilities as the two highest areas of need (Killoran, Templeman, Peters, & Udell, 2001). Both of these areas are highly applicable to paraprofessionals supporting students with ASD, as students with this disability often require specialized supports related to their unique characteristics and often present with behavioral challenges.

Prevalence rates of ASD are on the rise. The Center for Disease Control estimated in 2012 that 1 in 88 births are children identified with ASD. National statistics project the prevalence of autism to increase by 10-17% annually (NCES, 2011a). Cavagnaro (2007) estimated within the next decade the number of students with autism receiving special education services will rise by 1,148%. New research has estimated that autism’s costs to the nation have reached \$126 billion per year; of which 60% of those costs go to providing adult services (Autism Society of America, 2011; Autism Speaks, 2012). In order to decrease future costs of supporting adults with autism, the programming and services for K-12 students with ASD needs to be dramatically improved.

According to the Virginia Department of Education (VDOE), since 2001 there has been a 332% increase in the identification of students with ASD for special education services in the state of Virginia (see Figure 1). Over the past decade Virginia has averaged 18% annual increase

autism prevalence, which is higher than national estimates (NCES, 2011a). This is the inverse of the decreased total count of identified students receiving special education services within the state of Virginia. As the prevalence rate of autism continues to increase, a greater number of students with autism will likely also be identified to receive special education services. This increase in services will burden the funding and tax resources within the state. Virginia is incurring a greater influx of students with autism than other states and is in need of appropriate personnel development designed to assist and educate this population (NCES, 2011a).

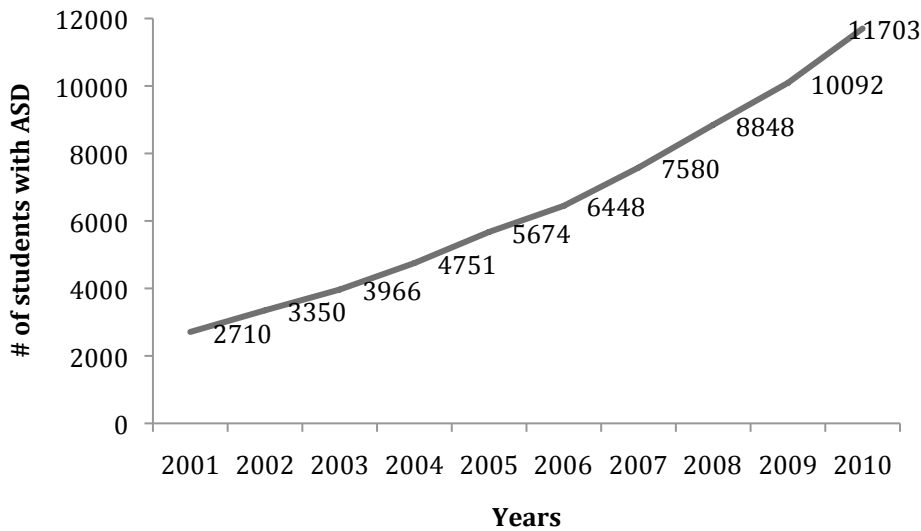


Figure 1. The total number of students with autism served per year in Virginia.

Federal law mandates quality education for all. The Combating Autism Act was signed into law in 2006, which authorizes expanded activities related to autism research, prevention, and treatment. The Act focuses on increasing the number of individuals able to provide evidence-based interventions for individuals diagnosed with ASD and other developmental disabilities, as well as the use of evidence-based interventions for individuals at higher risk for ASD and other developmental disabilities.

No Child Left Behind (NCLB) and the Individuals with Disabilities Education Improvement Act (IDEA) both place an emphasis on high-quality education for all students, including those with disabilities. For the first time, Congress identified high-needs children as including children with disabilities who were performing far below grade level (20 USC 6301. Sess 1001(2)). As co-morbidities are higher amongst children with ASD, there is also an increased likelihood that children with ASD are more likely to be functioning below grade level (Woodbury-Smith & Volkmar, 2009).

NCLB and IDEA also place a high emphasis on personnel quality and their knowledge of core academic content. The laws incorporate sections that address the paraprofessionals' role and training requirements. NCLB and IDEA also stipulate that paraprofessionals should be appropriately trained and supervised, and receive ongoing professional development.

Quality educational services for students with ASD are lacking. In 2009, The Joint Legislative Audit and Review Commission (JLARC) released a report detailing the quality and quantity of services for Virginians with ASD. Amongst its findings, almost 40% of school personnel respondents used at least one ASD-specific intervention *not* recommended by experts. The JLARC report also found that the majority of schools in Virginia reported professional development activities and teacher preparation programs were still not preparing personnel to meet the needs of students with ASD. One of the top identified training needs by schools in the JLARC survey was a certification in ASD interventions. Approximately 50% of schools said one challenge to effectively serving students with ASD was insufficient access to an ASD specialist. The report provided 21 extensive recommendations, five of which were directly aimed at the VDOE.

In the past, education services for persons with ASD have been described as limited, difficult to obtain, inappropriate, inaccessible, and costly (Kohler, 1999; Little, 2003; Sperry, Whaley, Shaw, & Brame, 1999; Whitaker, 2002). Little (2003) surveyed mothers of children with ASD and they endorsed the education of teachers as the highest area of need, out-rating social skills training, advocacy, and funding. Feinberg and Vacca (2000) identified factors of concern surrounding the education of students with ASD to include the efficacy of various treatment approaches, the limited expertise of teachers, and the limited expertise of service providers. A continuous theme in ASD service delivery is the lack of well-trained personnel (Scheuermann, Webber, Boutot, & Goodwin, 2003; Simpson, 2004, Sperry et al., 1999).

Virginia is taking action to train paraprofessionals supporting students with ASD.

Various events, including the JLARC (2009) report, made policymakers and educators in Virginia more aware of the demands involved in employing and preparing personnel to provide appropriate services to students with ASD. In 2010, House Bill 581 introduced the idea that all educators, including paraprofessionals, should demonstrate competency in serving students with ASD. The bill did not pass in the House of Delegates in the 2010 session, but was revived again in 2012 after the Bedford County Public School incident (Massie Bill, HB 325, 2012). The bill was passed and signed into law. The final wording of the bill stipulates

By September 1, 2014, each school board shall ensure that aides assigned to work with a teacher who has primary oversight of students with autism spectrum disorders receive training in student behavior management within 60 days of assignment to such responsibility. School boards may provide such training to other employees, including transportation employees. The Board of Education shall provide training standards that school divisions may use to fulfill the requirements of this section. That the Board of

Education, in consultation with Virginia Commonwealth University, shall develop online training that school divisions may use to fulfill the requirements of §22.1-298.3 of the Code of Virginia. Such training shall be made available to local school divisions free of charge (Massie Bill, HB 325, 2012).

The online training was developed and made available to meet the requirements of this mandate. However, little is known about whether the training is effectively meeting the needs of paraprofessionals supporting students with autism. Prior to evaluating the implementation of the online training, more information was needed to determine the perceived training needs of paraprofessionals in the state of Virginia.

Statement of the Problem

The national literature has illuminated a wide variety of issues surrounding the employment of paraprofessionals such as the lack of supervision, training, and skills. It was assumed that the complexities of providing paraprofessionals training as described in the literature, also extended to Virginia. Likewise, the literature also demonstrated a wide variety of issues surrounding the educational programming of students with ASD, including the lack of trained personnel and the lack of knowledge of evidence-based practices (EBPs). As evidenced by the JLARC (2009) report, Virginia has also struggled to provide quality services to students with ASD. Both areas of research have remained largely separated in educational research. Be that as it is, paraprofessionals regularly support students with ASD, and understanding the needed professional development for paraprofessionals supporting students with ASD in Virginia added to both bodies of literature. This study informed the public at large concerning the training needs of paraprofessionals supporting students with ASD in Virginia by describing the (a) professional development that has already occurred, (b) the facilitators and barriers to providing

professional development for this unique group of educational staff, and (c) professional development needed.

Significance of the Study

The signing of the Massie bill into law heightened the significance of this study (HB 325, 2012). VDOE was charged with developing training to meet these legislative requirements, thus it was vital for this organization to understand the full extent of the training needs of paraprofessionals in Virginia. This study specifically met VDOE's needs by investigating in-depth the professional development of paraprofessionals supporting students with ASD in the Commonwealth. The results of this study provided some insight and information into how VDOE and other agencies could improve their training efforts towards paraprofessionals supporting students with ASD in Virginia. The findings of this study also generated implications for the development of state procedures, practices, and policies related to the training and supervision of paraprofessionals.

Furthermore, the research contributed to the current body of knowledge regarding the training needs of paraprofessionals and the training needs of staff members supporting students with ASD. This study validated the findings of previous literature and confirmed the training environment to be similar for paraprofessionals in Virginia. This study also highlighted the need for the paraprofessional training paradigm to be viewed through the lens of a greater training need for the supervising teachers. It filled a gap in research and built a bridge in the existing literature.

Research Questions

Within the conceptual framework of grounded theory, an explanatory mixed methods design was employed to answer the following questions:

1. What are the current professional development practices of paraprofessionals supporting students with ASD? (RQ1)
2. What are the barriers to professional development for paraprofessionals supporting students with ASD? (RQ2)
3. What are the professional development needs for paraprofessionals supporting students with ASD? (RQ3)

Definition of Key Terms

For clarity, the following list of definitions and explanation of terms was used throughout this study.

Autism. This study was conducted within the public schools, and therefore, the definition most relevant is from IDEA (2004). The language of this definition is clear and relates specifically to the eligibility of special education services under the identification of autism.

IDEA defines autism as

a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three that adversely affects a student's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. (34 C.F.R. 300.8(c)(1)).

VDOE also uses this definition. In 2010, the Virginia special education regulations provided more specific criteria within each category to help local education agencies appropriately identify and serve students with disabilities (VDOE, 2010a).

Autism spectrum disorders (ASD). ASD is a general term referring to autism and the closely related disorders of Asperger's disorder, pervasive developmental disorder- not otherwise specified, childhood disintegrative disorder, and Rett's syndrome implies the range of cognitive ability and characteristic severity. Frequently, education professionals use autistic disorder and ASD interchangeably without regard to their differing connotations (Volkmar, State, & Klin, 2009). Many educational systems do not provide separate educational diagnosis for the five subcategories, but rather serve all students with these similar characteristics under the title autism or ASD. For this study, ASD was used in reference to all five subcategories.

Director of special education. This person's primary responsibility is to direct, manage, serve, and support educational programs for exceptional children and their families. This person is typically assigned to a central or district office and serves as the principal technical advisor and administrator of special education. This term is often used interchangeably with special education administrator, special education supervisor, directors of special education, administrator of special education, or special education coordinator. For this study, regardless of the title assigned to them by their local education agency, these participants were referred to as directors of special education.

Individuals with Disabilities Education Improvement Act of 2004. IDEA 2004 is a reauthorization of IDEA 1997 that ensures free appropriate public education for students with disabilities. IDEA also provides accountability and assistance to states to supply quality supports and services for families and individuals with disabilities. Significant changes in IDEA 2004 included increased accountability for teachers and an emphasis on the use of EBPs.

No Child Left Behind Act of 2001. NCLB is a reauthorization of the Elementary and Secondary Education Act, which also placed an increased emphasis on highly qualified teachers,

and EBPs. NCLB instituted increased accountability by requiring all schools and states to make adequate yearly progress towards a goal of 100% student pass rate on standardized tests.

On-the-job training. This type of professional development is typically informal and may occur through a variety of activities. Examples of on-the-job training may include book discussion groups, reading educational materials, mentoring, coaching, or observation of an exemplary staff member.

Paraprofessionals. Paraprofessionals have been and continue to be assigned a wide variety of titles, some of which include paraeducator, instructional aide/assistant, teacher aide/assistant, education technician, transition trainer/job coach, and home visitor.

Paraprofessionals are employees: (a) whose positions are to assist teachers or related services practitioners with the delivery of instructional or other direct services to children and youth, and/or their families, and (b) who work under the supervision of teachers or other professional personnel who have ultimate responsibility for identifying learner needs, designing and implementing programs to meet learner needs, assessing learner performance, and evaluating program effectiveness (Gaylord, Wallace, Pickett, & Likins, 2002). Although a paraprofessional may be assigned to a wide variety of duties, for this study the term paraprofessional referred to instructional paraprofessionals only.

Paraprofessional supporting students with ASD. In order to distinguish between the term paraprofessional referring to any instructional paraprofessional in the literature and the specific group of paraprofessionals sampled for this study, the term paraprofessionals supporting students with ASD was used. This paraprofessional group was operationalized as paraprofessionals assigned to special education who supported a student with ASD on a daily basis within the past year.

Professional development. NCLB (2001) provides an extensive definition of professional development which includes activities that

- (i) improve and increase teachers’ knowledge of the academic subjects the teachers teach and enable teachers to become highly qualified;
- (ii) are an integral part of broad school-wide and district-wide educational improvement plans;...
- (v)(I) are high-quality, sustained, intensive, and classroom-focused in order to have a positive and lasting impact on classroom instruction and the teacher’s performance in the classroom;...
- (vii) advance teacher understanding of effective instructional strategies that are
 - (I) based on scientifically based research (except that this sub-clause shall not apply to activities carried out under part D of title II); and
 - (II) strategies for improving student academic achievement for substantially increasing the knowledge and teaching skills of teachers. (115 Stat. 1964(9101)(34)).

Special education. According to IDEA the term special education means “specially designed instruction, at no cost to parents, to meet the unique needs of a child with a disability” (§602(29)(A)[B]).

Special educator. A teacher may provide special education services to students in Virginia under five endorsement categories: (1) special education early childhood, (2) special education- adapted curriculum K-12, (3) special education- general curriculum K-12, (4) special education hearing impairments, and (5) special education visual impairments. Although specifications are different for each endorsement category, they generally require 27 semester

hours in the education of students with disabilities covering characteristics of disabilities, legal foundations, assessment and management of instruction and behavior, collaboration, individualized education program implementation, transition, and child development (Virginia Board of Education, 2011, 8VAC20-22-10 et seq.). A special educator may hold any of these five endorsement areas while providing services to students with ASD. There is no specific endorsement for ASD in Virginia.

Teacher of students with ASD. To clarify the population sampled in this study, the term teacher of students with ASD was used to refer to any Virginia licensed special educator who had at least one student with ASD on his/her caseload within the past year.

Limitations

This study made the following assumptions: participation was voluntary, the email containing the survey link was forwarded from directors of special education to other potential participants within their division, and the data generated provided meaningful findings. A possible limitation included low participation due to inadequate access to a computer with Internet to receive the email. As this study was limited to Virginia, the unique demographic of Virginia may not be representative of the larger national population, consequently external validity was limited. As the exact population of special education teachers and paraprofessionals serving students with ASD was not available, the ability to generate a response rate and generalize demographic characteristics was limited.

Delimitations

Delimitations are used to narrow the scope of the study by indicating what is not included in the study (Creswell, 2006). Because only the perspectives of special education paraprofessionals, teachers, and directors were investigated, their perspectives cannot be

generalized to other educational staff who support students with ASD. As the study only focused on the professional development needs regarding ASD, the findings cannot be applied to other disability populations. Finally, the study only included those educating in Virginia.

Summary

Meeting the needs of students with ASD requires exemplary skills to provide effective instruction (Young, 2006). Understanding the perceptions of various stakeholders concerning professional development for paraprofessionals regarding ASD is vital to developing and providing effective training. This study was groundbreaking in that it married the paraprofessional literature and the ASD literature, two aspects of education that need intense intervention. The use of mixed methods research made the most of complementary styles to understand the professional development of paraprofessionals and to propose recommendations to strengthening the field of training for paraprofessionals.

Chapter 2

Review of the Literature

Three strands of literature informed this review: (1) the literature of paraprofessionals serving as instructional support personnel in classrooms, (2) the literature regarding educational supports for students with ASD, and (3) the literature regarding theories of effective professional development for staff in the education setting. The three strands reflect the need for high quality, effective professional development for educational personnel to provide high quality, effective instruction to a variety of students, including those with ASD.

The History of the Paraprofessional

Paraprofessionals have been employed in the public schools for more than 50 years and their roles and responsibilities have significantly evolved over time. Paraprofessionals are now being utilized more for direct learning support and less for clerical duties (Carter et al., 2009; Giangreco et al., 2002a). The change in roles and responsibilities can be reflected in the many names of the position over time. Paraprofessionals were first referred to as teacher's aide or school helper, then as instructional assistant or instructional aide, and finally paraprofessional or paraeducator. After World War II, the shortage of licensed teachers and the initial movement to serve students with disabilities in the community encouraged the employment of paraprofessionals within the school system (Pickett et al., 2003). The initial role of the paraprofessional was to allow teachers more time to plan and instruct students by carrying out

“sub professional” roles such as “janitors, clerks, lunchroom supervisors, hall policemen and the like” (Moody, 1967, p. 2). To more firmly establish this practice of using paraprofessionals in schools, two research projects were conducted around this same time period. One study funded by the Ford Foundation, which trained college educated women to carry out clerical and routine classroom tasks in Bay City, Michigan schools (Fund for the Advancement of Education, 1961). The other research project, conducted at Syracuse University by Cruickshank and Haring (1957), evaluated the effectiveness of paraprofessionals in special education programs. Both projects reported positive findings, however, the tumultuous times of the late 1960s and early 1970s tested the utilization of paraprofessionals in the public schools.

With the social, economic, and educational changes of the 1960s and 1970s, Congress began to fund programs for the educational support of students who came from educationally and economically disadvantaged backgrounds (Pickett et al., 2003). New programs such as Head Start and Title I provided funding for schools and organizations to hire and utilize paraprofessionals within the classroom. During the 1970s, paraprofessionals were increasingly used for instructional matters but were also still serving as playground, lunchroom, and hallway monitors (French, 1999).

The landmark passage of PL 94-142, the Education for All Handicapped Children Act, now known as IDEA, forever changed the role of the paraprofessional in the American school system. This law illuminated the importance paraprofessionals in providing individualized educational programming for students with disabilities. Although paraprofessionals were still performing clerical and routine tasks, they were asked to take on additional responsibilities such as providing direct support and instruction to students with varying levels of need (Ashbaker & Morgan, 2001; Young, 2006).

The 1980s in many ways were a lost decade; the utilization of paraprofessionals remained largely unchanged. Parents and educational advocates were concerned with the perceived decline of the quality of educational services throughout the United States. It was during this time that the need for higher standards and higher quality faculty emerged. A few professional organizations such as the Council for Exceptional Children and the National Resource Center for Paraeducators began to advocate for standards concerning the employment, supervision, and use of paraprofessionals in the classroom (Pickett et al., 2003). A limited number of institutions of higher education responded to this call and began incorporating supervision of paraprofessional curriculum into their teacher preparation programs (Lindemann & Beegle, 1988).

Presently, paraprofessionals spend a large portion of their day providing direct instructional support to students. The title paraprofessional meaning, “to work along side of” more closely fits their present role in the American classroom. In 2003, over 633,000 instructional paraprofessionals were employed in public schools with half being assigned to special education (NCES, 2007). Throughout the 1990s to the present, amendments to legislation increasingly stressed, but did not mandate, the need to provide continuous high quality professional development to all educational staff. Despite the large portion of students being served through paraprofessionals, the literature has continued to suggest their roles are largely undefined, trainings are insufficient, and responsibilities are underappreciated (Downing, Ryndak, & Clark, 2000; French, 2003; Giangreco et al., 2001).

In spite of additional responsibilities and an ever-changing role, the demographic of the paraprofessional has remained largely unchanged. Even when paraprofessionals were initially used in the classroom, they were largely high school or higher educated mothers between the ages of 30 to 50 years (French, 1999; Moody, 1967). Paraprofessionals often live in the local

community and mirror the cultural and socioeconomic statuses of the students with whom they work (Monzo & Rueda, 2003; Shavaun, Davis, Crowley, & White, 2005). In recent decades, schools have become increasingly diverse with students from a variety of economic conditions, cultures, learning abilities, and learning styles. Although other school faculty may not closely match the student population, paraprofessionals are increasingly serving as the cultural bridge between the local and educational community.

Utilization of Paraprofessionals

The public education system has been charged with meeting the needs of a diverse group of learners, including those with the most complex needs. This requires exceptional strategies, skills, and knowledge to provide effective academic and functional instruction (Gaylord et al., 2002; Young, 2006). In order to provide said instruction to students with disabilities, modifications, accommodations, and services are outlined in the student's Individualized Education Program (IEP) (Smith, Polloway, Patton, & Dowdy, 2006). Paraprofessional support is only one of the possible services that could be used to meet the needs of the learner. In order to fully understand the use of paraprofessionals within American schools, we must understand the current literature surrounding the position. Several themes emerged from the paraprofessional literature: (1) roles and responsibilities, (2) work difficulties, (3) hiring and pay, (4) interactions with students and parents, and (5) their impact on inclusion. Literature related to orientation and training, supervision and evaluation, and knowledge and skills will be discussed in later sections.

Roles and responsibilities. The overwhelming message regarding the roles and responsibilities for paraprofessionals remains the same: There is a lack of clarity and supervision (Egilson, & Traustadottir, 2009; Guay, 2003; Howard, & Ford, 2007; Mistry, Burton, & Brundrett, 2004; Riggs, 2004; Riggs, & Mueller, 2001; Rose, & Forlin, 2010). Furthermore,

Shyman (2010) indicated that the best predictor of emotional exhaustion in paraprofessionals was role conflict. Shyman also linked emotional exhaustion with burnout and high attrition.

School personnel, including paraprofessionals, reported that the position requires a variety of responsibilities such as student supervision, behavior management, material creation, and data collection (Davis, Kotecki, & Harvey, 2007; Lifshitz, & Klein, 2007; Liston et al., 2009; Patterson, 2006). Despite these other responsibilities, the role of direct instruction has greatly increased in the past decade (Gerber, Finn, Achilles, & Boyd-Zaharias, 2001; Lacey, 2001; McConkey, & Abbott, 2011). Paraprofessionals also said they served as a cultural liaison, particularly when working with lower socio-economic students and diversified communities (Abbate-Vaughn, 2007; Chopra et al., 2004).

Work difficulties. Paraprofessionals primarily identified “work difficulties” as those related to relationships with other adults (Riggs, 2001). This included the lack of respect and recognition of paraprofessionals that is prevalent in many school cultures (Chopra et al., 2004; Giangreco et al., 2001; Riggs, 2004). Paraprofessionals called for more teamwork, communication, and supervisor support (Carter, & Hughes, 2006; Patterson, 2006; Shyman, 2010). Several studies also cited poor work conditions, which included high stress, heavy workloads, and inappropriate responsibilities (Groom, & Rose, 2005; McConkey, & Abbott, 2011, Moran, & Abbott, 2002). Paraprofessionals frequently identified work difficulties as including the lack of job security and opportunities for career advancement (Abbate-Vaughn, 2007; Howard, & Ford, 2007). Other school personnel recognized the added benefit of paraprofessionals, and yet this disconnect has remained between the school’s need for paraprofessionals and their positive recognition of them. To this point, only paraprofessionals

have been queried regarding their perceptions of recognition. Future research is needed to identify the perceptions of other stakeholders including teachers and administrators.

Despite the Council for Exceptional Children (2009) providing an extensive outline of the basic skills required for paraprofessionals entering the profession, school personnel often prioritized different qualities sought for hire. Although experience working with children or persons with disabilities was highly rated, other qualities such as being flexible, patient, nurturing, and loving were more highly rated (Groom & Rose, 2005; Wall, Davis, Winkler-Crowley, & White, 2005). This research has illuminated the continued perception that the paraprofessional position lacks instructional demands. Daniels and McBride (2001) epitomized the struggles of paraprofessionals the best by saying, “schools cannot adequately function without paraprofessionals and paraprofessionals cannot adequately function in schools that lack an infrastructure that supports and respects them as viable and contributing members of instructional teams” (p. 73).

Hiring and pay. As the number of paraprofessionals in the public school system continues to grow, it is important to look at the hiring and retention of paraprofessionals. Paraprofessionals have continued to report little orientation during the hiring process and receive most of their training on the job (Howard & Ford, 2007). A variety of school personnel identified high attrition of paraprofessionals as a continuous struggle (Giangreco et al., 2002a; Ghere & York-Barr, 2007). Paraprofessionals consistently identified the lack of job security, low pay, and lack of recognition as negatives of the position (Hughes & Valle-Riestra, 2008; Lewis, 2005; Moran & Abbott, 2002; Tillery, Werts, Roark, & Harris, 2003). Notwithstanding, paraprofessionals reported staying in the position because they were dedicated to the children they supported (Tillery et al., 2003).

As the paraprofessional position has gained increasing responsibility regarding direct instruction, school divisions need to critically evaluate the quality of professionals they are attracting through wages and benefits. Many studies spoke to low pay in conjunction with other work difficulties. Paraprofessionals alluded to the willingness to stay in the position if other nonmonetary benefits were provided such as recognition and acknowledgement (Tillery et al., 2003).

Over the past ten years, researchers Giangreco, Edelman, and Broer conducted several studies that created and refined a hiring and evaluation tool for paraprofessionals (Giangreco, Backus, Cichoski, Sherman, & Mavropoulos, 2003; Giangreco & Broer, 2007; Giangreco, Broer, & Edelman, 2002b; Giangreco, Broer, & Suter, 2011; Giangreco, Edelman, & Broer, 2003; Giangreco, Smith, & Pinckney, 2006). Their studies developed guidelines for schools to evaluate how they used their paraprofessional resources. Once their paraprofessional usage and/or areas of concerns had been identified, the tool encouraged schools to create an action plan to alleviate paraprofessional misuse. All studies reported positive findings such as better role identification and the reduction of one-on-one paraprofessional supports.

Interactions with students and parents. In a 2001 literature review, Giangreco, Edelman, Broer, & Doyle identified parent and student perspectives as a major gap in the literature. When queried, parents maintained a positive view of paraprofessionals stating that they were helpful but needed more training (Chopra & French, 2004; Chopra et al., 2004; Werts, Harris, Tillery, & Roark, 2004). Five studies within the past decade have specifically focused on extracting the perspectives of students with disabilities regarding their relationships with paraprofessionals (Broer, Doyle, & Giangreco, 2005; Egilson & Traustadottir, 2009; Malmgren & Causton-Theoharis, 2006; Skär & Tamm, 2001; Tews & Lupart, 2008). All five studies

evaluated the impact of paraprofessionals working with students with disabilities concerning access to educational content and social interactions. Results were mixed as they illuminated both positive and detrimental relationships between students and paraprofessionals. Students saw paraprofessionals in a variety of roles including that of, “mother,” “friend,” “protector,” “professional,” and “replaceable.” Students reported that paraprofessionals promoted social interactions, such as encouraging peers to play with them, and yet they also hindered social interactions. Older students were more likely to view paraprofessionals as social hindrances (Skär & Tamm, 2001). Other studies observed paraprofessionals hindering autonomy, particularly in accessing curriculum and materials (Guay, 2003). Causton-Theoharis and Burdick (2008) so aptly identified paraprofessionals as “gatekeepers” who either provided or denied access to curriculum, choice, or social interactions. Student and family perspectives is an area that needs further research.

Several studies also demonstrated that when trained paraprofessionals decreased their proximity and increased peer interactions (Causton-Theoharis, & Malmgren, 2005; Devlin, 2005; Malmgren, Causton-Theoharis, & Trezek, 2005; Schepis, Reid, Ownbey, & Parsons, 2001). Paraprofessional proximity hindered social interactions with not only peers, but also classroom teachers (Guay, 2003). However, a strong effect of close proximity included an increase in positive student behavior (Angelides, Constantinou, & Leigh, 2009; Blatchford, Bassett, Brown, & Webster, 2009; Malmgren & Causton-Theoharis, 2006). Carter, Cushing, Clark, & Kennedy (2005) successfully used peer supports to reduce paraprofessional support.

A growing number of studies observed the overall impact of the paraprofessional presence on student achievement. Classes and individual students were matched with those who received paraprofessional supports with those who did not. The studies suggested that those with

paraprofessional support or more support made less progress than those who did not receive paraprofessional support (Blatchford et al., 2011; Gerber et al., 2001; Webster et al., 2010). These studies have made a strong case for greater, systematic training and oversight of paraprofessionals.

Impact on inclusion. According to several studies, paraprofessionals have been relied on heavily to include students with disabilities (Giangreco et al., 2002a; Giangreco, Suter, & Doyle, 2010; Lacey, 2001, McNally, Cole, & Waugh, 2001; Suter & Giangreco, 2009). Some studies showed that inappropriate training or a lack of role definition produced barriers to students with disabilities developing socially appropriate relationships with their general education peers (Blatchford et al., 2011; Malmgren & Causton-Theoharis, 2006, Muijs, & Reynolds, 2003). However, other studies did not show such negative effects (Angelides et al., 2009; Causton-Theoharis, & Burdick, 2008; Logan, 2006; Robertson, Chamberlain, & Kasari, 2003). Studies that provided training to paraprofessionals frequently found increased student success both academically and socially (Adolphson, Hawken, & Carroll, 2010; Causton-Theoharis & Malmgren, 2005; Devlin, 2005; Quilty, 2007; Schepis, Reid, Ownbey, & Clary, 2003). Overall, stakeholders, including school personnel and parents, viewed paraprofessionals as positively supporting and promoting inclusion (Carter & Pesko, 2008; Groom, & Rose, 2005; Rutherford, 2011; Webster et al., 2010). Further research regarding the role of paraprofessionals in inclusion practices is still needed.

In spite of undefined roles and responsibilities and a work environment that largely lacks recognition and support, paraprofessionals continue to work in the education system providing instruction and support to students with the greatest needs. Pickett (1986) suggested “the expansion of the role of paraprofessionals has been one of the most significant changes in the

delivery of education services in recent decades” (p.31). The field of paraprofessionals has continued to change and grow as the inclusive schools movement and the voices of parents and students with disabilities are reflected in the literature.

Legislation and Litigation Surrounding Paraprofessionals

Paraprofessionals have been mentioned in legislation with the passage of NCLB in 2001 and the reauthorization of the IDEA of 2004. Under the umbrella of “highly qualified” personnel, NCLB requires Title I paraeducators to (1) “complete at least 2 years of study at an institution of higher education” and (2) “demonstrate through a formal state or local academic assessment knowledge of and ability to assist in instructing, reading, writing, and mathematics” (Section 1119[c][1][A] and [C]). NCLB outlines that these instructional activities occur “under the direct supervision of a teacher or licensed professional” (Section 1119[g][3][A]). NCLB also stipulates that paraprofessionals should receive ongoing professional development regarding the areas of core curriculum and instructional strategies (Section 2123[a][3][A]). Although NCLB only addresses the quality of paraprofessionals serving in Title I programs or schools, it acknowledges that high quality instructional staff is vital in providing supports to high-need students.

Despite NCLB’s lack of standards for all paraprofessionals, IDEA Parts B and C established that special education paraprofessionals are to be appropriately trained and supervised. Part B specifies that paraeducators be “appropriately trained and supervised, in accordance with State law, regulation, or written policy” (Section 612[14][B][iii]). Part C also notes that “a comprehensive system of professional development, including the training of paraprofessionals” must be instituted (Section 635 [8]). IDEA goes even further to clarify that all personnel who work with children identified under IDEA must have the skills necessary to meet the needs of the children (Katsiyannis, Hodge, & Landford, 2000).

Legislation was not without litigation, and as parents became aware of the rights of their children regarding Free and Appropriate Public Education (FAPE) litigation arose. As one possible aide to accessing the general education curriculum in an inclusive classroom, parents have questioned the use and quality of paraprofessionals supporting their children. Several noteworthy cases challenging whether FAPE had occurred and the use of paraprofessionals included *A.S. v. Norwalk Board of Education* (2002), *D. R. v. East Brunswick Board of Education* (1993), and *Judy Littlegeorge v. Wisconsin Dells School District* (2001) (Katsiyannis et al., 2000). These cases mandated the use of paraprofessionals to provide FAPE to students with disabilities within the general education classroom. However, courts have equally ruled against the use of paraprofessionals as a supplemental support in the general education classroom when the supports already available in the general education classroom met the requirements of FAPE (*Cremeans v. Fair-land Local School District Board of Education*, 1993; *T. W. v. Unified School District No. 259*, 2005).

Other court cases have addressed concerns regarding the qualifications and training of paraprofessionals working with students with disabilities, especially those with the most complex needs. In many cases, students who engaged in aggressive behaviors were under question, including the responses of the paraprofessional (*Appellant v. Ramsey Board of Education*, 2005; *Vallandigham and Clarke v. Clover Park School District No. 400*, 2005). In *Johnson v. Olathe District Schools Unified School District No. 233* (2003), the paraprofessional was dismissed from the district for using restraints on a student. In a case of a student with autism, the courts ruled that the paraprofessional had to be qualified to provide applied behavior analysis (*Calaveras Unified School District*, 1998). Courts have also ruled that school districts are responsible for ensuring the training and qualifications of paraprofessionals (Etscheidt, 2005).

Although paraprofessionals are one option to providing FAPE, other alternatives should also be seriously considered (Giangreco & Broer, 2005). It is also clear through the legislation and litigation that it is the sole responsibility of the local education agency to ensure paraprofessionals are of high quality and prepared to provide instructional support to students with disabilities.

Supervision of Paraprofessionals

As litigation has clearly shown, the responsibility of supervising paraprofessionals falls to the school district. That supervision requirement has often fallen on the shoulders of teachers. As eluded to earlier in the chapter, there has been a continuous lack of paraprofessional supervision and evaluation (Breton, 2010; Egilson & Traustadottir, 2009; Guay, 2003; Rutherford, 2011). There might be a relationship between the lack of training for teachers regarding the supervision of paraprofessionals and the lack of clarity regarding roles, responsibilities, and supervision. Although teachers have been seen as the primary supervisor (Ghere & York-Barr, 2007), teachers haven't accepted ownership of this role (Giangreco & Broer, 2007). Teachers have reported feeling very underprepared to supervise paraprofessionals. Many studies have also spoken to the lack of training for special education teachers who supervise these paraprofessionals (Carter et al., 2009; French, 2001; Griffin-Shirley & Matlock, 2004; Wallace, Shin, Bartholomay, & Stahl, 2001). The literature clearly identified that paraprofessionals and teachers alike felt their roles were not clearly defined (Cremin, Thomas, & Vincett, 2003; Giangreco et al., 2001; Lacey, 2001; Wallace et al., 2001). When surveyed special education teachers felt supervision of paraprofessionals should be included in teacher preparation course work (Drechtrah, 2000).

Steckelberg et al. (2007) attempted to address the needs of teachers through a web-based training program at the University of Lincoln-Nebraska. The program was implemented across five universities to prepare pre-service teachers for supervising paraprofessionals. Over 500 pre-service teachers participated in the program and reported positive results. This was only one initiative that reached a small portion of pre-service teachers. It has remained unclear how many other initiatives like this one are available in the United States.

The need for planning, scheduling and supervising paraprofessionals has continued to be apparent (Appl, 2006; Takala, 2007; Tillery et al., 2003). When both special educators and paraprofessionals were asked, “What are the perceived barriers to providing effective supervision?” the top five responses included time, communication, trust, listening, and planning (Mavropoulos, 2005). The literature regarding teachers as supervisors strongly emphasized the importance of clear and effective communication (Devecchi & Rouse, 2010; Devlin, 2008; Hammeken, 2009; Harkness, 2002; Tobin, 2006). For effective supervision, regular communication regarding roles, responsibilities, and expectations have been recommended (Westling & Fox, 2009). Effective communication should include clear plans, schedules, tasks, information and updates, and regular opportunities for discussion and collaboration (Doyle, 2002).

The paraprofessional literature has emphasized the need for more planning time between paraprofessionals and teachers (French, 2001; Hauerwas & Goessling, 2008; McConkey & Abbott, 2011; Wallace et al., 2001). Both paraprofessionals and teachers acknowledged communication skills as one of the greatest training needs, which may be further exasperated by the lack of planning time to communicate thoughts and ideas about curriculum and students. Paraprofessionals reported feeling more prepared to complete their job responsibilities when they

had more time to plan with their supervising teacher (SPeNSE, 2001). However, the nature of the position often has paraprofessionals pulled in several directions. The average paraprofessional reports serving 16-23 students with disabilities on her caseload and working in at least 5 different classrooms a week (SPeNSE, 2001). These statistics demonstrate how finding time to plan can quickly become a struggle.

Preparation and Professional Development for Paraprofessionals

As supervision of paraprofessionals has fallen to teachers, so does the majority of professional development. Historically paraprofessionals have reported receiving the majority of their training on-the-job (Moody, 1967; French 2001) and intentional professional development has been largely ignored by school districts (Pickett, 1986, Pickett et al., 2003). There have been few published studies demonstrating efforts on the part of school districts to train paraprofessionals systematically at the district level or classroom level (Bugaj, 2002; Forbush & Morgan, 2004). Even seasoned paraprofessionals, with more than 20 years of experience, lacked training and learned to complete most of their duties on-the-job or through trial-and-error (French, 2001; Giangreco & Broer, 2005; Riggs, 2001). Training paraprofessionals is not a single event, but rather a multi-faceted job-embedded process that requires a significant investment of time. As paraprofessionals undergo this lengthy training process, students with special needs continue to be served by newly hired, inexperienced paraprofessionals (Ghere, 2003).

Along with communication training, paraprofessionals also identified behavior management and disability characteristics as high training needs (Killoran et al., 2001). However, other school personnel, such as teachers and administrators, viewed training for paraprofessionals in a different light. Paraprofessionals consistently rated their training needs

higher than their supervising teachers and administrators (Killoran et al., 2001). Teachers and administrators were also more likely to rate training with regards to academic instruction to be a higher need (Giangreco et al., 2002a).

Training efforts have been scattered across the United States. This is not to say that local education agencies are not providing any training, rather the documentation of comprehensive systematic training is scarce. As state education agencies have taken it upon themselves to create state guidelines and training requirements, packaged trainings for paraprofessionals have become more readily available. State education and training requirements for the employment of paraprofessionals will be discussed in a later section. According the Education Commission of the States (2006b), several states have professional development programs available to paraprofessionals including: Colorado, Delaware, Hawaii, Idaho, Maine, Michigan, Mississippi, Montana, New Hampshire, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Rhode Island, South Dakota, Texas, Vermont, and Washington. Currently, Virginia only requires training for paraprofessionals under the supervision of a teacher who provides services to students with ASD and not all paraprofessionals. The formats of professional development opportunities have varied by state. Some states have utilized online self-paced training modules, but other states have used academies or training cohorts. Many professional development opportunities have been provided by local community colleges as a pathway to meeting Title I requirements or other career ladders.

The paraprofessional literature has clearly illuminated the need for more training for both teachers and paraprofessionals. Despite a few studies, the field has lacked studies evaluating comprehensive training efforts with paraprofessionals (Bugaj, 2002; Deardorff, Glasenapp, Schalock, & Udell, 2007; Forbush & Morgan, 2004; Morgan, Forbush, & Nelson, 2004; Rose &

Forlin, 2010). Bugaj (2002) implemented a yearlong staff development program for paraprofessionals in a rural school district in Pennsylvania. Forbush & Morgan (2004) developed live, Internet courses for paraprofessional and teacher teams to “form and strengthen their instructional team” (p. 11). Morgan et al. (2004) also developed live, Internet courses for paraprofessionals concerning beginning knowledge and skills as determined by the Council for Exceptional Children. Deardorff et al. (2007) analyzed the effectiveness of the Team Approach to Paraeducator/Supervisor Professional Development (TAPS) model for paraprofessionals in early childhood special education settings. This model included the creation of an individualized professional development plan for each paraprofessional and then providing structured feedback and supervision from the supervising teacher. Rose and Forlin (2010) provided comprehensive training to two cohorts of paraprofessionals in Hong Kong to improve their knowledge of classroom support and inclusive programming. Despite these few published trainings, there has been little literature demonstrating efforts to train paraprofessionals *systematically* at the district level or classroom level. Beyond that, all of these trainings were implemented without a comparison group for training effectiveness or even pre-post test assessments of knowledge gained. Future research could implement quantitative studies to compare groups of paraprofessional training strategies.

Despite these limited training efforts, 70 to 90% of paraprofessionals have reported receiving no training prior to employment (Katsiyannis et al., 2000). French (2003) suggested that even if no formal district training occurs, the teacher should provide an orientation to the position. French encourages orientations to include introductions, a review of written information, the completion of a “getting acquainted” interview, the completion of a work style preference assessment, and the analysis of needs versus skills.

Downing et al. (2000) surveyed paraprofessionals who reported little or no training at the onset of hiring. Paraprofessionals reported they had trained themselves by reading, observing others, and drawing from their own educational experiences. Participants reported receiving in-service training ranging from one hour to 8.5 days per year.

Paraprofessionals' perceptions of training. An overwhelming majority of paraprofessionals (90.5%) believed that working alongside teachers provided valuable on-the-job training not available in workshops (Young, 2006). However, the same paraprofessionals surveyed believed specific district level training was necessary to prepare them for their responsibilities in the classroom (Young, 2006). According to the SPeNSE project, paraprofessionals felt more skillful and prepared to fulfill their job responsibilities when they received more in-service training or pre-service preparation (SPeNSE, 2001). Additionally, paraprofessionals felt their professionalism and confidence increased with training and they were more motivated to receive additional training in the future (Ashbaker, Young, & Morgan, 2001; Rose & Forlin, 2010).

Few studies have inquired into the perceived training needs of paraprofessionals (Killoran et al., 2001, Riggs, 2001). Killoran et al. specifically targeted the needs of paraprofessionals serving in early childhood special education programs. Paraprofessionals identified their highest training needs to be related to direct daily service delivery such as monitoring student progress, creating appropriate learning environments, and effectively using various forms of therapy or technology (Killoran et al., 2001). Although Riggs (2001) surveyed paraprofessionals serving in the K-12 setting, she found similar results. Paraprofessionals wanted practical information regarding specific disabilities, behavior management, communication, learning styles, and inclusive practices.

Training in isolation. It is important to note that within the field of paraprofessional research the lack of training has not gone unnoticed. Within the past ten years, researchers have utilized paraprofessionals in many studies and interventions. Researchers have discerned the importance of the role of the paraprofessional and their direct contact with student. The literature has demonstrated that when a paraprofessional was provided training on an intervention or instructional strategy, both paraprofessional behavior and student behavior changed. Interventions have covered a wide variety of topics including alternative and augmentative communication devices, discrete trial teaching, peer interaction, text decoding, phonological awareness, social stories, behavioral interventions, data collection, and visual supports (Bessette, & Wills, 2007; Bingham, Hall-Kenyon, & Culatta, 2010; Bingham, Spooner, & Browder, 2007; Bolton, & Mayer, 2008; Miller, 2003; Quilty, 2007; Vadasy, Sanders, & Peyton, 2005; Vadasy, Sanders, & Peyton, 2006a; Vadasy, Sanders, & Peyton, 2006b; Vadasy, Sanders, & Tudor, 2007; Wellington, & Stackhouse, 2011).

A few studies determined that paraprofessionals might have a negative impact on student outcomes (Gray et al., 2007; Lane, Fletcher, Carter, Dejud, & Delorenzo, 2007; Mujis & Reynolds, 2003). One study looked into paraprofessional support provided during mathematics. It was hypothesized that this may be a more difficult subject for paraprofessionals to teach to students. Two studies found no effects on student reading achievement after an intervention was implemented by a paraprofessional. Blatchford et al. (2011) was the first study to look at the impact of paraprofessionals on overall academic achievement and not one specific area. More studies of this kind are a needed addition to the literature.

Education and Training Requirements

As demonstrated in the previous section, when paraprofessionals were trained they were able to implement instructional strategies and interventions that improved student achievement. Student achievement is dependent on a knowledgeable educational team. In order for us to have high standards for students, there must also be high standards for the staff members who work with them (Marazano, 2007; Reeves, 2004).

According to NCES (2007), of all school districts that hired instructional paraprofessionals, 93% required a high school diploma or equivalent; 39% required at least two years of college; 18% required an associate's or higher degree; and 37% required the passage of a state or local test. There are several factors that make these statistics alarming. First, 7% of all paraprofessionals working in school did not have at least a high school diploma or equivalent. Paraprofessionals working with students at the secondary level may not have even had proficiency in the instruction they were supposed to be supporting. Secondly, NCLB (2001) requires all Title I schools to maintain highly qualified paraprofessionals with at least two years of college experience or the passage of a content-based test. According to NCES (2011b), Title I schools accounted for 45% of all schools in the United States. This discrepancy in statistics means that Title I schools were employing paraprofessionals that didn't meet the minimum standards of the law.

Furthermore, special education paraprofessionals are held to an even higher standard, as they must be qualified to perform services as indicated in a student's IEP (Katsiyannis et al., 2000). Beyond the vague mandates in NCLB and IDEA, states have not been not required to provide documentation that special education paraprofessionals are meeting these requirements.

There have been no assessments or federal requirements to demonstrate a paraprofessional is qualified to work in the field of special education.

Comprehensive Standards for Paraprofessionals

With the lack of federal guidance regarding the hiring and training of paraprofessionals, several professional organizations stepped in to fulfill this need for state and local education agencies. The Council for Exceptional Children (2009), the National Education Association (2005), the National Resource Center for Paraprofessionals in Related Services (now known as National Resource Center for Paraeducators, 2007), and the IDEA Partnerships Paraprofessional Initiative (2001) identified several competencies for paraprofessionals working in special education programs. Competencies included knowledge of (a) special education law, (b) characteristics of disabilities, (c) instructional strategies, (d) professional and ethical practice, and (e) collaboration.

Education and training requirements have significantly varied by state (French, 2003; Mikulecky & Baber, 2005; Young, 2006). According to the National Resource Center for Paraeducators (2012) 28 states have articulated professional standards for paraprofessionals. However, an even smaller portion of states has certification requirements for all instructional paraprofessionals beyond the requirements for paraprofessionals working in Title I schools. According to Education Commission of the States (2006a) those states include: Delaware, Georgia, Illinois, Iowa, Maine, Minnesota, New Hampshire, New Mexico, New York, North Dakota, Oklahoma, Rhode Island, Texas, and West Virginia. Certification requirements have also varied by state from multi-level endorsement systems to one-dimensional systems that certify basic content knowledge. Several states such as Maine, Minnesota, New Mexico, New York, and Texas offer multi-level certification programs.

Prior to 2013, VDOE did not have set hiring or training requirements. In 2005, VDOE released a guidance document titled *The Virginia Paraprofessional Guide to Supervision and Collaboration with Paraprofessionals: A Partnership*. This manual was directed towards supervising teachers and provided information regarding appropriate supervision, teamwork, and communication. The manual also provided a suggested framework for professional development. Competency areas included (a) philosophical, historical, and legal foundations of special education; (b) characteristics of learners; (c) assessment, diagnosis, and evaluation; (d) instructional content and practice; (e) supporting the teaching and learning environment; (f) managing student behavior and social interaction skills; (g) communication and collaborative partnerships; and (h) professionalism and ethical practices. These competencies closely mirrored those suggested by the Council for Exceptional Children. Despite the existence of this guidance document, there has been little push from the VDOE to ensure localities are meeting these standards.

In January 2013, the Virginia Board of Education approved training standards for paraprofessionals assigned to work with teachers who have primary oversight of students with ASD (Virginia Board of Education, 2013). These standards were in direct response to the Massie Bill (HB 325, 2012) and only apply to paraprofessionals supporting students with ASD. These training standards will be discussed more in depth in a later section.

Summary of Paraprofessional Literature

Over the past 50 years the roles and responsibilities of paraprofessionals have evolved significantly, especially with the impact of IDEA placing more pressure on paraprofessionals to serve as direct service providers to students with disabilities (Werts et al., 2004; French, 2003). Paraprofessionals have faced many challenges in the workplace including deficiencies in

training, role clarity, and recognition (Giangreco & Broer, 2005). Many of these challenges may have been due to the continued shortage of qualified supervisors and state leadership (Ashbaker & Morgan, 2006; French, 2003). Currently, the state of Virginia does not possess a systematic professional development program for paraprofessionals.

History of ASD

Since Leo Kanner's categorization of autism as a disability in 1943, the field of ASD including research, treatments, philosophies, and assumptions has changed significantly. Autism is a complex behavioral disorder with several facets providing many opportunities for different treatment options as well as different philosophical perspectives. ASD is also unique as it impacts children equally across all communities without regard to ethnicity or socioeconomic status (Autism Society of America, 2011).

At its conception in 1943, little was known about the characteristics of persons with autism and it was often associated with childhood schizophrenia or environmental factors. The unusually high socioeconomic statuses of the parents in Kanner's original study and a strong interest in experiential factors led researchers to speculate for decades that "refrigerator" mothers caused autism (Chawarska, Klin, & Volkmar, 2008). In the late 1940s and early 1950s, "treatments" for autism typically included intense psychotherapy for both the mother and child with little positive effects.

Before the 1960s, most children with ASD were considered "uneducable" and therefore, separated from their family during treatment and almost always institutionalized (Rapin, 1991; Weiss, 1999). In the early 1960s scientific studies using observable and quantifiable measurements, such as behavioral interventions, became a trend in the discipline that continues today (Ferster & DeMyer, 1961, 1962; Lovaas et al., 1966). This foundational research set the

stage to prove persons with ASD were in fact “educable” (Wetherby & Woods, 2006). These early studies focused on reducing problem behaviors, usually through punishment, and increasing positive behaviors through rewards (Hewitt, 1965; Lovaas, 1977). These early researchers assumed if they could teach children with autism to attend and imitate, then they could teach them other larger skills. Although some students generalized some skills, these methods did not appear to reduce the core characteristics or symptoms of ASD.

The majority of these interventions were located in highly structured, discrete trial environments, and although effective in teaching discrete skills, many children had difficulties such as dependence on cues, lack of spontaneity, and failure to generalize skills (Schreibman, 2000; Horner, Dunlap, & Koegel, 1988). These same criticisms persist today against the treatments that continue to function under these behavioral assumptions.

To overcome these limitations, research in the 1970s and 1980s focused on improving generalization and spontaneity through treatments such as using multiple exemplars (Gunter, Fox, Brady, Shores, & Cavanaugh, 1988; Matson, Sevin, Box, Francis, & Sevin, 1993), and within-stimulus prompting (Schreibman, 1975). Despite the attempts to ameliorate these issues of generalization, maintenance, and spontaneity, they persisted well into the 1980s and 1990s, leading researchers to focus on core deficit areas for improving motivation and responsivity in children with ASD (Koegel & Koegel, 2006).

Etiology and prevalence. In the 1970s several studies focused on the neurobiological basis of autism. The work of Kolvin (1971) and Rutter (1972) identified autism as a distinctive condition separate from schizophrenia. There have also been several pieces of evidence that support a genetic basis for ASD. Epidemiological studies have shown that ASD has the strongest genetic links of all psychiatric disorders, with a heritability factor greater than 90% (Bailey,

LeCouteur, Gottesman, & Bolton, 1995). Other research has noted a higher rate of chromosomal abnormalities in ASD than the typical population (Veenstra-Vanderweele, Christian, & Cook, 2004).

Other environmental, genetic, and pathological factors also increase the risk of autism. ASD is five times more likely to occur in boys than in girls (Center for Disease Control, 2012). Two studies have identified the advanced age of the father to be a significant risk factor in ASD (Cantor, Yoon, Furr, & Lajonchere, 2007; Reichenberg et al., 2006). Enlarged head size has also been identified as a risk factor for ASD, particularly enlarged areas of the brain related to social cognition and language development (Alarcon et al., 2008). Another recent study identified increased risk factors for ASD if the mother presented with diabetes, hypertension, or obesity during pregnancy (Krakowiak et al., 2012).

Beyond the classic definition of autism as defined by the American Psychiatric Association (2000), there are also several secondary characteristics or associated medical conditions with autism. These secondary characteristics are not required to be present to receive a diagnosis of autism, but are often present in individuals who are diagnosed with autism. These characteristics or conditions may include genetic disorders, gastrointestinal disorders, seizure disorders, sleep dysfunction, sensory processing problems, and pica (Autism Speaks, 2012). Other conditions such as attention-deficit hyperactivity disorder, obsessive-compulsive disorder, tic disorders, social anxiety, specific phobias, and major depressive disorder are also more likely to co-occur with individuals with autism (Matson & Nebel-Schwalm, 2007; Steyn & Le Couteur, 2003). Thirty-eight percent of children with ASD are also diagnosed with an intellectual disability (Center for Disease Control, 2012). These secondary characteristics further complicate the educational needs of students with ASD.

Unique Programming Needs of Students with ASD

The autism spectrum is vast, highly unique, and has still remained much a mystery. In spite of the advances in understanding and treating individuals with ASD, the debates over educational programming have remained. Perhaps Simpson (2004) summarized the field of educational programming for ASD best by saying

Related to this uniqueness, autism is perceived by many professionals and parents to be such a singular disability that its uniqueness requires separate and distinctive specialized intervention methods, curricula, and programs. In this connection, autism has a strong legacy of controversy related to both effective treatments and interventions and to effective preparation of personnel qualified to teach and otherwise work with students with ASD. (p. 138)

Educational services for persons with ASD have in the past been described as limited, difficult to obtain, inappropriate, inaccessible, and costly (Kohler, 1999; Little, 2003; Sperry, Whaley et al., 1999; Whitaker, 2002). Little (2003) surveyed mothers of children with ASD and they endorsed the education of teachers as the highest area of need, out-rating social skills training, advocacy, and funding. Feinberg and Vacca (2000) identified factors of concern surrounding the education of students with ASD to include the efficacy of various treatment approaches, the limited expertise of teachers, and the limited expertise of service providers. A continuous theme in the delivery of ASD services has been the lack of well-trained personnel (Scheuermann et al., 2003; Simpson, 2004, Sperry et al., 1999).

Although the field of autism services has lacked quality, some organizations have been able to reach consensus on some educational practices and have regarded them as being

evidence-based. Three such organizations include the National Autism Center (NAC), the National Professional Development on Autism Spectrum Disorders (NPDC on ASD), and the National Research Council. The National Research Council (2001) identified the characteristics of effective intervention programs to include

- Entry into intervention programs as soon as an autism spectrum diagnosis is seriously considered;
- Active engagement in intensive instructional programming for a minimum of the equivalent of a full school day, five days (at least 25 hours) a week with a full year programming varied according to the child's chronological age and developmental level;
- Repeated planned teaching opportunities generally organized around relatively brief periods of time for the youngest children (15-20 minute intervals) including sufficient amounts of adult attention in one-on-one and very small group instruction to meet individualized goals;
- Low student/teacher ratios (no more than two children with ASD per adult in the classroom); and
- Mechanisms for ongoing program evaluation and assessments of individual children's progress with results translated into adjustments in programming. (p. 218-219)

The National Research Council (2001) also recommended researchers, federal agencies, and nonprofit agencies collaborate to develop definitions of "appropriate educational skills and sequences in social and cognitive development, informed by normal developmental literature" (p. 229). Also, in response to IDEA (2004) researchers in the field of autism were encouraged to

develop more measures for the diagnosis and development of ASD, more statistical methods of analysis, and more measures to determine program efficacy.

Evidence-based practices for ASD. Beyond the recommendation for what an intervention program should look like, these same organizations investigated the educational strategies and interventions that would be the most effective during said program. Seeing a large gap in the field of autism research, in 2007, both the NPDC on ASD and the NAC began comprehensive reviews the literature to establish EBPs for individuals with ASD between birth and 22 years of age. Both organizations established rigorous inclusion criteria for their studies (Odom, Brantlinger, Gersten, Horner, Thompson, & Harris, 2005; Odom, Collet-Klingenberg, Rogers, & Hatton, 2010; NAC, 2009). The NAC developed the *Scientific Merit Rating Scale*, which they used to critically evaluate over 700 research articles. The NPDC on ASD (2012) adopted the following definition of EBPs to conduct their review:

To be considered an evidence-based practice for individuals with ASD, efficacy must be established through peer-reviewed research in scientific journals using:

- randomized or quasi-experimental design studies. Two high quality experimental or quasi-experimental group designs,
- single-subject design studies. Three different investigators or research groups must have conducted five high quality single subject design studies, or
- combination of evidence. One high quality randomized or quasi-experimental group design study and three high quality single subject design studies conducted by at least three different investigators or research groups (across the group and single subject design studies).

High quality randomized or quasi-experimental design studies do not have critical design flaws that create confounds to the studies, and design features allow readers/consumers to rule out competing hypotheses for study findings. High quality in single subject design studies is reflected by a) the absence of critical design flaws that create confounds and b) the demonstration of experimental control at least three times in each study. (NPDC on ASD, 2012, para. 1-3).

NPDC on ASD evaluated studies from 1990 until 2007. Upon completion of the study, the NPDC on ASD established 24 EBPs. The majority of these practices also correlated with the practices established by the NAC. NPDC on ASD and NAC differ as the NPDC on ASD selected specific stand-alone interventions, but NAC selected intervention packages. Many of the specific interventions the NPDC on ASD identified are included within the NAC packages. These 24 specific interventions are briefly described in Appendix A.

Educational programming for ASD in Virginia. In 2009, JLARC released a report detailing the quality and quantity of services for Virginians with ASD. Amongst its findings, 66% of caregivers surveyed felt schools did not successfully address the core deficits of autism. Nearly 50% of responding schools reported not regularly using scientifically based interventions. Almost 40% of school personnel respondents used at least one ASD-specific intervention *not* recommended by experts. The report provided 21 extensive recommendations, five of which were directly aimed at the VDOE.

JLARC emphasized five areas for VDOE improvement: (1) improve early intervention systems for children with ASD, (2) develop operational guidelines for schools regarding FAPE, (3) develop a model IEP for Virginia students with ASD, (4) develop transition guidelines for students with ASD, and (5) improve educational service delivery to school-age children with

ASD. These charges highlighted the enormous task VDOE had been given to improve the educational services provided to students with ASD in Virginia.

Education and Training for Staff Regarding ASD

To truly understand the state of education and training needs for staff working with students with ASD, one must first understand the state of special education. Attrition rates of beginning special education teachers have been significantly higher than their general education counterparts, with nearly 50% of special educators leaving the field within the first five years (Billingsley, 2004 Griffin et al., 2009; Ingersoll & Smith, 2004; Nichols & Sosnowsky, 2002). Special education teachers working in self-contained classrooms serving students with more significant disabilities such as ASD have been even more difficult to retain (McLeskey, Tyler, & Sauders-Flippin, 2004; Stempien & Loeb, 2002). With the inability to retain teachers, the field has had to continuously train new special education teachers to have the knowledge and skills necessary to provide highly quality instruction to students with ASD. Furthermore, general education teachers have also lacked critical foundational skills and knowledge regarding ASD (Dymond, Gilson, & Myran, 2007; Streuernagel, 2005).

Most special education teachers have had limited experience and understanding of the characteristics and behaviors of students with ASD (McCabe, 2008; Scheuermann et al., 2003). Even if a child is receiving services from an educational provider, it does not guarantee they are receiving quality instruction that will produce intended outcomes (Simpson, 2008). Students on the spectrum have had among the poorest postsecondary outcomes as compared to other students with disabilities, and they have frequently responded poorly to intervention efforts (Simpson, 2004). There has been a significant gap between the needs of students with autism and the services and expertise available. Teachers, paraprofessionals, and service providers have

received little direct, specific, and comprehensive training in EBPs for children with ASD (Dymond et al., 2007; Lablanc, Richardson, & Burns, 2009; Stahmer, Collings, & Palinkas, 2005). This lack of training has often left many of these professionals lacking the critical foundational knowledge and skills to work with students with ASD (Dymond et al., 2007; Roll-Pettersson & Ala'I-Rosales, 2009).

Educators working with students with ASD often require specialized training exceeding that offered in most preservice teacher education programs (Simpson, 2003). Recent studies have shown that providing personnel with training specific to the needs of children with ASD have improved student outcomes (Browder, Trela, & Jirnez, 2007; Dib & Sturme, 2007). Even a limited amount of professional development can significantly increase participants' perceptions and knowledge of ASD and EBPs, as well as reduce overall stress and anxiety related to serving this population (Leblanc et al., 2009). Without ASD specific training for school personnel, this gap will only continue to grow as the prevalence of autism increases every year.

Professional Competencies for Staff Regarding ASD. Competencies for teaching persons with ASD have been in existence for over 20 years (Dalrymple & Williams, 1983). For the first time in 2009, the Council for Exceptional Children included competencies for professionals teaching students with autism and other developmental disabilities into their comprehensive professional standards. These competencies are used by the National Council for the Accreditation of Teacher Education (NCATE) for the preparation of teachers for the field of special education. The Council for Exceptional Children didn't provide separate competencies for those working with students with ASD, but rather maintained the same competencies as those working with individuals with developmental disabilities. These standards call professionals to

have knowledge of special education foundations, characteristics of exceptionalities, instructional strategies, and ethical practices.

Education and training regarding ASD in Virginia. The majority of schools in Virginia reported that professional development activities and teacher preparation programs were still not preparing personnel to meet the needs of students with ASD (JLARC, 2009). Schools said the greatest training need was preparation for general education teachers. Schools also identified staff with certification in ASD interventions to be a high need. Approximately 50% of schools cited insufficient access to an ASD specialist as a challenge to effectively serving students with ASD.

VDOE has made efforts to increase professional development opportunities related to ASD. In 2008 and 2009, the VDOE's Training and Technical Assistance Center's network utilized a "train-the-trainer" model with 20 school divisions across the state to provide division-level training and consultation regarding ASD (JLARC, 2009). Also in response to JLARC, VDOE established a statewide training, technical assistance, and research center at a large urban university in Virginia that's primary mission was to improve services for individuals with ASD.

To assist with employment and professional development, the Virginia Autism Council (2010) developed the *Skill Competencies for Professionals and Paraprofessionals in Virginia Supporting Individuals with Autism Across the Lifespan*. The competencies covered eight areas: (1) general autism, (2) environmental structure and visual supports, (3) comprehensive instructional programming, (4) communication, (5) social skills, (6) behavior, (7) sensory motor development, and (8) independence and aptitude. The Virginia Autism Council also developed a "professional development tracker" for school personnel to identify their possible weaknesses and training needs. Notwithstanding the availability of these comprehensive standards, school

divisions and staff were not required to abide by these competencies, nor engage in systematic professional development to meet said standards.

Eleven universities across Virginia have provided autism certification programs consisting of at least four courses covering ASD characteristics and instructional methods (Virginia Autism Council, 2012). VDOE has not provided educators with any incentive to complete these programs. At the time of the study, there was no separate licensing requirement to serve as a special educator for students with autism, nor was there any compensation for having this additional certification.

Standards for ASD Staff Related to Paraprofessionals

It has been well documented that the learning characteristics of individuals with ASD differs widely from other learners, which in turn requires teachers to possess specialized skills (Simpson, 2005). One could assume that if training and professional development has been lacking for teachers serving students with ASD, then it is also likely lacking for paraprofessionals. Based on an examination of the paraprofessional literature, there has been no research that has evaluated the quality of paraprofessionals serving students with autism.

There have also been no studies documenting systematic training efforts to prepare paraprofessionals to work with students with ASD, but there have been isolated studies that trained paraprofessionals to implement specific strategies with students with ASD. Previous research has trained paraprofessionals to implement EBPs such as discrete trial training, social narratives, and pivotal response treatment (Bolton & Mayer, 2008; LeBlanc, Ricciardi, & Luiselli, 2005; Quilty, 2007; Robinson, 2011). Other studies trained paraprofessionals to increase peer interactions, increase generalization of skills, increase academic engagement, and reduce problem behaviors (Schepis et al., 2001; Devlin, 2005; Hall, Grundon, Pope, & Romero, 2010;

Schepis et al., 2003; Causton-Theoharis & Malmgren, 2005). When queried, paraprofessionals reported needing more training in specific disability characteristics, especially with regards to ASD (Riggs, 2001). However, more in-depth information is needed to understand what the particular training needs are regarding how to serve students with ASD. Historically, paraprofessionals have received most of their knowledge and skills from on-the-job training by their supervising teachers (French, 2001). If supervising teachers are not knowledgeable regarding EBPs for students with ASD, then it is likely that paraprofessionals are also not receiving information or training regarding effective practices for serving students with ASD.

As indicated earlier, the Virginia Board of Education (2013) recently passed training standards specifically for paraprofessionals supporting students with ASD to fulfill the requirements of the Massie Bill (HB 325, 2012). The training standards fell into eight general categories: (1) general autism, (2) behavior, (3) communication, (4) social skills, (5) comprehensive instructional programming, (6) environmental structure and visual supports, (7) sensory motor development, and (8) independence and aptitude. For example, one training standard stated that paraprofessionals would implement “evidence-based practices to teach receptive and expressive communication outlined in the student’s goals and objectives” (p. 2). Although other states have training standards for special education paraprofessionals, Virginia was the first known state to implement standards specific to working with a particular disability population. These training standards will go into effect in September 2014, therefore, no current data regarding the effectiveness of these standards are known. A statewide training and technical assistance center developed online trainings to meet the VDOE training standards and were made available to all school divisions free of cost.

Summary of ASD Literature

In conclusion, the prevalence of ASD has been steadily increasing and the need for these individuals to receive adequate academic programming has also increased correspondingly. The best educational experiences for students with ASD must have three components: “(1) every students with ASD must have appropriately trained teaching personnel; (2) their education must take place in the most suitable setting, which is decided on a case-by-case basis; and (3) the most effective research-based instructional methods must be employed” (Simpson, Mundschenk, & Helfin, 2011, p. 13). For learners with ASD to receive this kind of high quality education, paraprofessionals also need to be trained to provide research-based instructional methods in a variety of settings.

Conceptual Framework

The essential purpose of training and professional development is to help school staff expand their knowledge and skills, that when applied to work enhances job or organizational performance (Jacobs & Park, 2009). In the context of schools, enhanced job and organizational performance should result in increased student learning outcomes (Guskey, 2000; Joyce & Showers, 2002; Killian, 2002). Providing professional development for paraprofessionals is an important component of a school’s improvement plan because improved student achievement is dependent on the effectiveness and contributions of all staff members (Fullan, 2005). Money placed towards teacher professional development nets improvements in student achievement greater than any other school resource (National Research Council, 1999). To better understand the development of effective professional development and the conceptual framework surrounding this study, we must further investigate the theories of adult learning and the transfer of learning within the context of an organization.

Best Practices of Professional Development

There has been consensus in the field that effective professional development requires much more than the traditional pedagogy used to teach school-age students (Aderinto, 2006; Cranton & King, 2003; Trotter, 2006; Webster-Wright, 2009). Scripted and often irrelevant school in-service trainings have been found lacking in producing long-term change in teachers (Killian, 2002; Lieberman & Mace, 2008). It is only through the development of training based on principles of adult learning that teachers will be truly motivated to elicit change in their classrooms.

There has been a large body of literature identifying best practices for the professional development of teachers (Guskey, 2000; Joyce & Showers, 2002; Smylie & Wenzel, 2006). There has also been evidence to suggest that the same principles of effective professional development for teachers also apply to the professional development for paraprofessionals (Carroll, 2001; French 2001, 2001; Gerlach, 2010). The characteristics of professional development that determine the level of effectiveness have shown to be numerous and highly complex (Guskey, 2003). There are several concepts to keep in mind when creating professional development. Professional development should (1) enhance the paraprofessional's knowledge; (2) be based on research-based content and skills; (3) utilize principles of adult learning; (4) be relevant to their work with students and results focused; (5) be sustained, ongoing and supported by modeling and coaching; (6) be embedded into day-to-day responsibilities; (7) be collaborative, community oriented, and collegial; and (8) provide opportunities for discussion, follow-up, and reflection (Darling-Hammond & McLaughlin, 2011; Foley, 2004; Graham & Salas, 2002; Jurow, 2001; Mertens & Flowers, 2004). Darling-Hammond & McLaughlin (2011) also emphasized that professional development for education personnel must be connected to

other aspects of school change and related to the collective solving of specific problems of practice.

The application of adult learning principles is a key part of effective professional development. Adult learning has been a research field with a long history dating back to the early 1900s. Adult learning theory sought to separate itself from the education of children holding that adults learn differently. Several theories have been established that are applicable to the paraprofessional professional development paradigm: constructivist theory, andragogy, and transfer of learning.

Constructivist theory. Constructivism viewed learning as an active process that is continuously confirmed and re-evaluated as the learner takes in new information that fits or contradicts the learner's knowledge paradigm (Driscoll, 2005). Constructivist theory has continued to work under the assumption that each learner enters the learning experience bringing his or her previous knowledge and experience with him or herself (Staitis & Wilke, 2007). Several theorists have posited that not only do learners bring their experiences with them, but that experiential or "situational learning" is the primary context of learning (Dewey, 1929/2008; Foley, 2004; Putnam & Borko, 2000). In light of paraprofessionals, learning would be the most effective within the school environment because each staff member's learning needs are varied and context specific (Elmore 2004). According to Driscoll (2005, 2007), constructivist theory identified learning as an active process within an authentic context. Brooks and Brooks (1999) recommended using five principles of constructivism to develop learning experiences: (1) pose problems relevant to students, (2) structure learning around overarching concepts, (3) seek and value student perspectives, (4) adapt curriculum to support student needs, and (5) assess student learning using authentic context-based measures.

Andragogy. In 1973, Knowles introduced the learner-focused theory of andragogy. Constructivist theory and andragogy are similar, as they have both placed the learner at the center of the learning process. Both theories have highly valued the experiences and independence of the learner. Andragogy was originally established solely as an adult learning theory and has now been represented on the pedagogy continuum between teacher-directed and student-independent learning (Merriam, 2001). Andragogy has been centered around five main assumptions: (1) adults have a need to be self-directed in their learning (Knowles, 1989), (2) adults draw from their richest resource- their experiences (Merriam & Caffarella, 1999), (3) adults will seek learning relevant to their own personal or social goals (Merriam, 2001; Knowles, 1989), (4) adult learners are practical and solution oriented in their learning (Merriam & Caffarella, 1999), and (5) adult learners are internally motivated (Merriam & Caffarella, 1999).

The five main assumptions of andragogy have altered the format of traditional professional development. According to Terehoff (2002), when applied these principles should guide the development of trainings by (a) creating an environment for adult learning (Knowles, 1980); (b) involving adult learners in planning (Drago-Severson, 2000; Ingalls, 1984); (c) attending to the needs and interests of the adult learners (Knowles, 1980); (d) involving adult learners in setting program goals and objectives (Elmore, 2002); and (e) involving adult learners in designing, implementing, and evaluating the program (Knowles, 1980). This study aims to conduct a needs assessment to alleviate training barriers and lead to the development of trainings that are centered on adult learning principles.

Transfer of Learning

Transfer of learning is the ability to appropriately use newly acquired information and skills to similar or different settings beyond just the point of comprehension (Thomas, 2007).

Transfer of learning, also sometimes referred to as transfer of training, is a theoretical framework most typically applied to professional training or workplace education (Holton & Baldwin, 2003; Noe, 2002). Research regarding training transfer theories has largely focused on organizational levels of business and has been limitedly applied to the context of professional development for educators (Mai, 2004). The true effectiveness of professional development lies in the transfer of learning. Thomas (2007) used this idea to suggest that adult educators should use the framework of transfer of learning to inform their professional development activities such as identifying “how often and in what context transfer is expected” (p. 5).

Several principles of adult learning theory facilitate the transfer of learning. Considering the context of adult learning, Subedi (2004) proposed that actual work settings should be used to test theories, encourage reflection, and change practice. To assist in transfer, training programs should be designed to fulfill measurable goals (Graham & Salas, 2002), utilize prior knowledge, and make connections to work-related skills (Cossette, 2008). As paraprofessionals have often had extensive classroom experience, finding opportunities for them to use their prior knowledge may affect their motivation and willingness to carry the knowledge and skills gained from the training back to the classroom (Cossette, 2008). As paraprofessionals have repeatedly asked for more training, asking for their insight regarding training needs and training development may also increase motivation and likelihood to engage in said training (Riggs & Mueller, 2001).

Although program design and employee motivation are factors in transfer of learning, it is my belief that the educational systems in place have had the largest impact on the transfer of skills for paraprofessionals. The lack of recognition, support, and supervision of paraprofessionals have all stemmed from school systems and cultures, which limit paraprofessionals from accessing and implementing adequate professional development.

Organizational climate. Organizational climate has been conceptualized as the shared perceptions of organizational events, practices and procedures by employees (Patterson et al., 2005). Organizational climate has been identified as having four dimensions that impact an employee's overall perceptions of their work climate: (1) role stress and lack of harmony; (2) job challenge and autonomy; (3) leadership facilitation and support; and (4) work group cooperation, friendliness, and warmth (James & James, 1989; James & McIntyre, 1996; James & Sells, 1981). As the review of paraprofessional literature clearly illuminated, paraprofessionals have (1) undefined roles, (2) are challenged to complete duties with inadequate training, (3) receive little support and supervision, and (4) feel undervalued and under-recognized as a member of the educational community. Considering these factors, paraprofessionals have not perceived their organizational climate as being very positive.

Through the business and organizational literature, climate perceptions have been linked with several important outcomes. These outcomes included leader behavior (Rentsch, 1990), turnover rates (Rentsch, 1990), job satisfaction (Mathieu, Hoffman, & Farr, 1993), employee job performance (Brown & Leigh, 1996) and overall organizational performance (Patterson, Warr, & West, 2004). Positive organizational climate has been associated with better employee performance and customer satisfaction (Day & Bedeian, 1991; Schneider, White, & Paul, 1998). When these outcomes are applied to the educational setting, it is theorized that paraprofessionals would provide better instructional support and consequently student satisfaction and achievement would also be greater.

Impact of supervision on the transfer of learning. The behaviors and attitudes of supervisors have had a large impact on how positively employees view their organizational climate. Hence, supervisors can have a potentially sizable impact on the transfer of learning.

Supervisor support has been shown to have a large effect on job satisfaction and control over work (Hall, 2007). These two factors have been positively related to learning that enhances job performance (Ryan & Deci, 2000). Research has shown that supportive supervisors were more likely to demonstrate behaviors such as showing genuine concern, recognizing others, providing task guidance and assistance, showing trustworthiness, engaging in and facilitating professional development, promoting open communication, displaying reasonableness, and encouraging autonomy (Rooney & Gottlieb, 2007).

Supportive supervisors were seen as engaging in and facilitating professional development (Hall, 2007; Rooney & Gottlieb, 2007). Supervisors have enabled professional development by encouraging goal setting (Payant, 2005), demonstrating committed leadership (Ellinger, 2004), and providing external expectations (Kremer, 2006). Supervisors can set the tone for organization and impact the overall organizational climate. Supervisors who created a positive organizational climate created informal opportunities for learning; emphasized the importance of sharing knowledge and developing others; and served as a role model/coach/mentor (Ellinger, 2004). For paraprofessionals to feel they are in a safe environment that encourages professional development, teachers must embrace their role as supervisor by sharing knowledge and creating opportunities for paraprofessionals to further their own knowledge and skills.

Cromwell and Kolb (2004) found that supervisor support was not only a critical factor in organizational climate, but also in the transfer of learning and the degree to which those skills were implemented in the work environment. Using an experimental design, Cromwell and Kolb (2004) compared those who had received training paired with supervisor support with those who had received training with no support. The group with supervisor support applied the newly

learned skills to a greater extent than the control group. Without an organizational structure that utilizes the leadership skills and abilities of teachers, the transfer of learning for paraprofessionals will continue to be minimal.

Summary of Conceptual Framework

Developing effective professional development for paraprofessionals has continued to be a highly complex task that is dependent on many internal and external factors outside of the professional developer's control. In order to truly understand the barriers preventing paraprofessionals from obtaining professional development, the external factors imposed on paraprofessionals must be considered. One such factor is that of the organizational climate and the extent to which the supervising teacher facilitates or hinders professional development. This study sought to evaluate the theory that many of the barriers to paraprofessional training lay within the construction of the educational system and the organization's climate.

Summary of the Literature Review

Reviewing the literature surrounding paraprofessionals, educational services for students with ASD, and professional development has revealed that there is still much work to be done in the field of education. The professional development of paraprofessionals specifically serving students with ASD has never been studied. This investigation sought to marry these various aspects of educational services to better understand the quality and quantity of professional development for this specific group of paraprofessionals. Serving students with ASD requires unique skills, and adult learning principles suggest trainings should be developed to meet the unique and specific needs of the participants. In order to develop effective professional development for these paraprofessionals, we must ask poignant questions regarding EBPs for working specifically with students with ASD.

Chapter 3

Research Methodology

This chapter includes a description of the methods chosen to identify emerging patterns and themes revealing the perceptions regarding the professional development of paraprofessionals supporting students with ASD in Virginia's education system. This chapter contains a description of (1) previous research methods utilized by other investigators, (2) the population and geographical location, (3) sampling, (4) data collection methods, (4) the instrument, and (5) data analysis procedures.

Research Methods Previously used to Research Paraprofessionals

102 articles were selected for use in the paraprofessional literature review in Chapter 2. Fifty-seven percent ($n = 58$) of the paraprofessional literature was quantitative in design; 41% of those studies were experimental, quasi-experimental, or single subject. The largest portion of studies remained descriptive in nature (qualitative and quantitative descriptive combined = 54%). Of the 102 studies, 30 were qualitative in nature. Mixed methods ($n = 14$) were used most often in program evaluation or large-scale studies. The majority of the methods employed in the research acquired the perceptions of stakeholders involved or evaluated a training method. The field of paraprofessional research has been heading in a positive direction, continuously increasing the sophistication of the methodologies and critically evaluating the benefits and costs

of using paraprofessionals to support students versus other alternatives (Carter et al., 2005; Giangreco & Broer, 2007; Giangreco, Edelman, & Broer, 2003).

Two published studies have employed mixed method design to investigate the perceptions of paraprofessionals regarding their training needs (Moshoyannis, Pickett, & Granick, 1999; Riggs & Mueller, 2001). However, no studies have investigated the training needs of paraprofessionals serving a particular population of students (ASD).

Research Method

This study employed an explanatory, sequential mixed methods design (Creswell & Plano Clark, 2007) to better understand professional development for paraprofessionals supporting students with ASD. The literature was saturated with descriptive studies of paraprofessional training needs, but few offered an explanatory theory regarding how paraprofessionals experience training. This design was selected because the qualitative data helped explain the quantitative results (Creswell, Plano Clark, Gutmann, & Hanson, 2003). It has been considered the most straightforward of all mixed methods design as the two methods are conducted in separate phases (Creswell & Plano Clark, 2007). These phases clearly delineated the data allowing for easier digestion of the results for the reader.

The quantitative process employed for this study was a non-experimental, descriptive design. According to McMillan (2008), non-experimental research is when “the investigator has no direct influence on what has been selected to be studied... the investigator is unable to manipulate or control any factors or phenomena that may influence the subjects’ behavior or performance” (p. 11). A sub-section of non-experimental research is descriptive design, which provides basic information such as frequency or totals, but doesn’t conclude relationships or causes. Descriptive statistics was used to evaluate information of actual previous events such as

number and type of training that occurred within the past year.

Qualitative processes are descriptive in nature and investigate issues in order to bring understanding to “complex social phenomena that cannot be reduced to precise, statistical relationships” (Hatch, 2002, p.224). As there are several external factors influencing professional development for paraprofessionals, this methodology enabled an explanatory theory to be drawn from the experiences of paraprofessionals. At the same time, the literature regarding professional development for paraprofessionals supporting particular populations has not been established, and the use of qualitative methods helped establish the information needed to embark on additional research regarding this topic (Bogdan & Biklen, 2007; Cresswell, 2006).

After careful consideration, systematic grounded theory was selected to frame the qualitative portion of the study as it provides an explanatory, theoretical model of a phenomenon (Marcellus, 2005). Strauss and Corbin (1990) stated that grounded theory can be “used to gain novel and fresh slants on things about which quite a bit is already known” (p. 19). This framework fit this study as a great deal is known about the training experiences of paraprofessionals, but this study investigated the phenomenon anew through the lens of disability population. Grounded theory design was used in order to describe, explain, and predict the professional development of paraprofessionals supporting students with ASD.

This study followed the systematic methods outlined by Strauss (1987) and Strauss and Corbin (1990,1998), which built upon methods originally introduced by Glaser and Strauss (1967). Systematic grounded theory follows a specific methodological process that includes (a) the use of theoretical sampling, (b) systematic data analysis, and (c) the development of a substantive theory. Through this process a theory was built based on the experiences of the key stakeholders: directors of special education, teachers of students with ASD, and

paraprofessionals supporting students with ASD. This multi-method approach helped direct future research and informed the complicated practice of providing professional development to paraprofessionals.

Research Questions

This study was designed to understand the various external factors that impact the professional development of paraprofessionals supporting students with ASD. A mixed-methods design was used to answer the following questions:

1. What are the current professional development practices of paraprofessionals supporting students with ASD? (RQ1)
2. What are the barriers to professional development for paraprofessionals supporting students with ASD? (RQ2)
3. What are the professional development needs for paraprofessionals supporting students with ASD? (RQ3)

Validity

Validity has often been conceptualized as a threat or a way you might be wrong about the conclusions you have drawn about the particular experience (Maxwell, 2005). Researcher bias has often been identified as a potential threat to qualitative research. In order to minimize researcher bias, I identified and articulated my beliefs and perceptions related to professional development for paraprofessionals prior to engaging in research.

Mixed methods design was employed to increase validity. As research in this particular area of paraprofessional literature has not been explored, I sought to not only understand and identify factors that support or impede professional development for paraprofessionals, but also to provide an explanatory theory regarding the various responses on the survey. The quantitative

and qualitative data triangulated the findings, therefore, increasing the validity of this study. Becker (1970) referred to the use of quantitative statistics to support themes or theories developed in qualitative research as “quasi-statistics.” Maxwell (2005) identified the use of quasi-statistics as a method to enhancing the validity of a study.

Validity was most enhanced in this study through the triangulation of various perspectives (Brantlinger, Jimenez, Klinger, Pugach, & Richardson, 2005). Perceptions regarding professional development of paraprofessionals supporting students with ASD was collected and analyzed from paraprofessionals supporting students with ASD, teachers of students with ASD, and directors of special education.

To further reduce threats to validity, steps were taken to address missing data values. Less than 20% of the cases were missing from each analysis, therefore listwise and pairwise deletions were used to account for missing values to maximize efficiency (Arbuckle, 1996; Peng, Harwell, Liou, & Ehman, 2006). For validity and reliability of the instrument please refer to the section titled *Instrumentation*.

Trustworthiness

In the field of qualitative inquiry, the concepts of validity and reliability are replaced with the belief that research should demonstrate a high degree of trustworthiness. Guba (1981) posited four criteria for trustworthiness that have been generally accepted by the field: (a) credibility, (b) transferability, (c) dependability, and (d) confirmability. Several steps were taken to increase the trustworthiness of the qualitative results. Credibility was increased by the use of well recognized research methods, triangulation of participants, the use of purposeful sampling to include negative case analysis, member checks, thick description, and examination of previous research to frame findings. Transferability and dependability were increased through a detailed

description of the phenomenon in question and the methods used. Confirmability was increased through triangulation of participants and an in-depth methodological description.

It is assumed in grounded theory that the researcher plays an active role in developing the theory through his or her choices in interview participants and selected questions (Creswell & Miller, 2000). Given that, it was important for me to disclose my assumptions, beliefs, and biases regarding paraprofessional training. I began my career in education as a paraprofessional. I worked in an environment that provided extensive structured training regarding applied behavior analysis techniques, and yet was given little teacher supervision on a daily basis. I was also formally employed as a special educator teaching students with ASD. Then, I became a supervisor of paraprofessionals, averaging five to six paraprofessionals under my supervision each year. I was personally unprepared for the role of supervising teacher and struggled to supervise some of my paraprofessionals. As this was something with which I continued to struggle, I focused my professional growth on improving my supervision skills. For my Master's degree project I created a paraprofessional training manual that was implemented throughout my building. I also implemented systematic training for my paraprofessionals at the classroom level. Through my personal experiences as a teacher, I felt I was provided little guidance from my administration at all levels regarding how to train, support, and supervise my paraprofessionals.

These personal experiences motivated the development of this study. Prior to beginning the study I strongly felt that paraprofessionals were not consistently receiving adequate training, yet I did not maintain any biases about the barriers or facilitators of training. As I began the data collection process I bracketed my biases to consider all possibilities, including the idea that perhaps training was not the foundational need of paraprofessionals supporting students with ASD. I believe my own experiences enhanced the interviews and my ability to relate to

participants. Furthermore, a second reviewer evaluated the transcripts, coding, and themes to enhance trustworthiness. This reviewer had no biases or experiences related to paraprofessionals but had expertise in the area of qualitative research.

Participants

Population and geographic location. This study focused on the perceived professional development phenomena of paraprofessionals by stakeholders located in Virginia. Virginia maintained 2,095 schools in the 2010-2011 school year (VDOE, 2011a). Of the 1,258,521 students enrolled in Virginia public schools 491,946 (39%) were eligible for free or reduced lunch (VDOE, 2012c). The demographic profile of Virginia was primarily Caucasian (53.56%) and Black (23.74%) (VDOE, 2012a). In Virginia, 163,500 (13% of total student population) students received special education services in 2010 (VDOE, 2011c). Of the students receiving special education services, 11,703 (1% of total student population) of the students receiving services were identified as having ASD (VDOE, 2011c).

Sampling. This study used two different types of sampling for the survey and interview portions of the study. The survey sought to randomly sample the entire populations of directors of special education, teachers of students with ASD, and paraprofessionals supporting students with ASD. The interview portion of the study used theoretical sampling from participants who completed the online survey and indicated an interest in participating further in the study.

Theoretical sampling is where participants are purposefully selected for their involvement in the experience and their ability to inform the theory (Strauss & Corbin, 1990). There was little known demographic data for these populations. This study compiled demographic data through the study to inform the results.

Response rate. The survey was distributed across the state using two primary means an email to directors of special education and an online link promoted through state education agencies. No emails bounced back from directors of special education; therefore, all were contacted and eligible for participation in the study resulting in a response rate of 42%. Participation criteria required teacher and paraprofessional participants to have worked with a student identified with ASD on a daily basis within the past year. However, state data were not available regarding the population totals of special educators of students with ASD or paraprofessionals supporting students with ASD in Virginia. Table 1 reflects the total number of all special education teachers and all special education paraprofessionals and as a result, a response rate cannot be determined. However, minimum sample sizes were calculated for a confidence level at 95%. Sample size minimums were as follows: special education paraprofessionals $n = 372$, special education teachers $n = 371$, and directors of special education $n = 98$. As shown in Table 1 sample size minimums were reached for paraprofessionals and teachers.

Table 1

Stakeholder Populations and Response Rates

Stakeholder group	Population total (N)	Accessed surveys (n)	Completed surveys (n)	Partial surveys (n)	Total surveys (n)	Missing data (%)
Para. in SPED	12,236 ^a	1,018	691	110	801	14%
Teachers in SPED	11,234 ^b	837	584	90	674	13%
Directors of SPED	131 ^a	74	50	5	55	9%
Total	23,601	1,929	1,325	205	1,530	

Note. Para. = paraprofessionals; SPED = special education ^a(VDOE, 2010c); ^b(A. Phenicie, personal communication, February 6, 2013).

Although exact response rates could not be calculated, the percentages of paraprofessionals and teachers from the special education population could be calculated and compared. The samples accounted for 6.5% of special education paraprofessionals and 6% of special education teachers. During the 2011-2012 school year 13,141 students received special education services under the identification of ASD, accounting for 8% of the special education population in Virginia (VDOE 2011b). These statistics make a strong case that the sample was representative of the teachers and paraprofessionals who support students with ASD in Virginia.

Demographics of survey participant groups. Several demographic questions were asked on the survey. Demographic information for teachers and paraprofessionals included years of experience with students with ASD, grade level, assigned location, and educational level. Administrators were only asked to provide demographic information regarding their total number of years experience in education and educational level.

Table 2

Teachers and Paraprofessionals' Years of Experience with Students with Autism Spectrum Disorders

Years experience	Paraprofessional sample (<i>n</i>)	Paraprofessional sample (%)	Teacher sample (<i>n</i>)	Teacher sample (%)
0-5	349	43.6	207	30.7
6-10	167	20.8	184	27.3
11-15	81	10.1	103	15.3
16-20	43	5.4	44	6.5
21-25	17	2.1	15	2.2
25+	11	1.4	26	3.9
Total	668	83.4	579	85.9

Years of experience. The “years of experience with students with ASD” question was a fill-in-the-blank question. Many paraprofessionals and teachers provided answers that included months and partial intervals of years. These data were converted to whole years with any value less than a year was rounded to a whole year. Years that were presented with decimals or months were rounded to the nearest whole or half year. For example if a participant wrote one year and six months, it was converted to 1.5 years. Descriptive statistics were then analyzed for each sample. Paraprofessionals’ experience ranged from 0 to 40 years. Paraprofessionals reported an average of 7.38 years experience (SD = 6.27).

Teachers’ experience ranged from 0 to 33 years. Teachers reported a slightly higher average of 9.26 years experience (SD = 7.02). Directors’ experience ranged from 0 to 46 years. Directors averaged the highest years of experience (M = 23.32, SD = 10.96). To better analyze the data of teachers and paraprofessionals, they were collapsed into six major groupings. Group sizes and percentages for paraprofessionals and teachers are described in Table 2. Directors’ years of experience were collapsed into four groupings (0-10, 11-20, 21-30, and 30+). The majority of directors (32.1%) fell into the group of 30+ years of experience.

Table 3

Teachers and Paraprofessionals’ Assigned Grade level

Grade level	Paraprofessional sample (<i>n</i>)	Paraprofessional sample (%)	Teacher sample (<i>n</i>)	Teacher sample (%)
Early childhood	78	9.7	82	12.1
Elementary	328	40.9	234	34.7
Middle	144	18.0	130	10.3
High	147	18.4	135	20.0
Total	697	87	581	77.1

Grade level. Teachers and paraprofessionals were asked to describe the grade level of the students with whom they work. Table 3 displays the frequencies and percentages of each grade level. The majority of both paraprofessionals (40.9%) and teachers (34.7%) reported working with elementary students. Only 77.1% of teachers reported their assigned grade level, which exceeded the recommended maximum of missing values (20%).

Assigned location. Paraprofessionals and teachers were asked to select the setting where they are assigned the majority of the day. As shown in Table 4, the bulk of both paraprofessionals (37.0%) and teachers (44.1%) indicated that they provided instruction in the self-contained special education classroom. Following closely behind teachers (23.7%) and paraprofessionals (33.3%) reported working in the general education classroom. The “other” selection choice included a write-in feature. The majority of participants who selected “other” were evenly split between special education and general education ($n = 12$, 19%).

Table 4

Teachers and Paraprofessionals’ Assigned Location

Assigned location	Paraprofessional sample (n)	Paraprofessional sample (%)	Teacher sample (n)	Teacher sample (%)
Self-contained SPED	296	37.0	298	44.1
SPED resource	72	9.0	81	12.0
General education	267	33.3	160	23.7
Other	63	7.9	47	7.0
Total	698	87.2	586	86.8

Note. SPED = special education.

Education level. All stakeholder groups were asked to report their highest education level. For each group, education levels were individualized to break down the most anticipated levels of education. For example, paraprofessionals were not given the selection choice of doctorate, but doctorate was encompassed under the choice of bachelor’s degree or greater. All paraprofessionals who took the survey reported they met the minimum state requirement of a high school degree or greater (see Table 5). The majority (28.2%) of paraprofessionals reported having a 4-year college degree or greater. The next largest group of paraprofessionals was those with some college experience (24.6%).

Table 5

Educational Level of Paraprofessionals

Education level	Paraprofessional (<i>n</i>)	Paraprofessional (%)
Some high school	0	0
High school/GED	129	16.1
Some college	197	24.6
2-year degree	142	17.7
4-year degree +	226	28.2
Total	694	86.6

Note. GED = General educational development.

As shown in Table 6, the majority of teachers (57.2%) reported holding a Master’s degree. Two teachers reported only having a high school degree or equivalent. Upon further investigation of these particular participants and their responses, it is probable that one of the respondents was a paraprofessional who accessed the wrong survey. The other respondent indicated they supervised two paraprofessionals and had worked with students with ASD for four

years. This profile suggested they were indeed a teacher. In Virginia, teachers were only allowed to possess an emergency license for three years; therefore, emergency license did not provide explanation for why this respondent indicated they only held a high school degree. Although directors of special education were given five response categories (some college, 2-year degree, 4-year degree, Master’s degree, or Doctoral degree), their responses only fell into two groups: Master’s Degree (64.3%) or Doctoral Degree (23.2%).

Table 6

Educational Level of Teachers

Education level	Teacher (<i>n</i>)	Teacher (%)
High school/GED	2.0	0.3
2-year degree	0	0
4-year degree	192	28.4
Master's degree	386	57.2
Doctoral degree	7	1.0
Total	587	86.9

Note. GED = General educational development.

Demographics of interviewees. Descriptive statistics were also compiled regarding the paraprofessionals who completed interviews. A variety of paraprofessionals were purposefully selected to participate in follow-up interviews. Paraprofessionals were selected for variety and their alignment with the average paraprofessional who participated in the survey. For example, the average paraprofessional from the survey had 7.38 years experience. The average years of experience for interviewees were six. As shown in Table 7, 50% of interviewees worked at the elementary level, which was relatively close to the sample population of 40.9%. Interviewees

slightly over-represented paraprofessionals at the middle and high school levels as no paraprofessionals in the early childhood setting responded to requests for an interview. The interviewees were representative of the 37% of paraprofessionals placed in self-contained special education settings and general education settings, but over-representative of paraprofessionals in both settings. The interviewees were also more educated than the survey sample. Only 28.2% of survey participants had a 4-year degree or higher, as compared to 62.5% of interviewees.

Table 7

Demographics of Paraprofessional Interviewees

Name ^a	Qualified level	Grade level	Setting	1:1 assistant	Years experience	Education level
Kim	1	Elementary	Self-contained SPED	No	4	Some college
Tina	1	Elementary	Both gen. ed & SPED	No	2	4-year ^c
Diane	2	Elementary	General ed.	Yes	7	4-year
Lisa	2	Middle	Both gen. ed & SPED	No	4	4-year
Jackie	3	Elementary	General ed.	Yes	16	2-year ^d
Courtney	3	Middle	Self-contained SPED	No	2	4-year
Mary	4	High	Private day school ^b	Yes	2	4-year
Betty	4	High	Both gen. ed & SPED	No	11	High school ^e

Note. SPED = special education; Gen. ed. = general education; ^aNames have been changed to protect the identity and maintain confidentiality of all participants in the study, ^bPrivate day school for students with disabilities, ^c4-year college degree or higher, ^d2-year college degree or Associate's, ^eHigh school or GED completion

Interviewees also reported supporting a variety of students with disabilities and not working exclusively with students with ASD. Interviewees disclosed working with students with

emotional disabilities, visual impairment, multiple disabilities, traumatic brain injury, learning disabilities, and intellectual disabilities. 37.5% of interviewees were assigned as a one-on-one support for a student. This percentage of paraprofessionals was most likely over-representative of paraprofessionals serving in this capacity as the majority of directors of special education (84.3%) indicated only 0-25% of their students with ASD received this level of support.

Interviewees also represented a variety of school divisions across the state, which included both large and small divisions located in urban, suburban, and rural localities. The following presents a more detailed description of each interviewee and their experience as a paraprofessional.

Kim: A Level 1 paraprofessional. She was located in a K-5 self-contained multi-categorical special education classroom. Kim brought a variety of experiences into her current placement including serving as a special education substitute and a general education paraprofessional in a kindergarten class. She described her relationship with her supervising teacher as having strong teamwork qualities.

Tina: A Level 1 paraprofessional. She served as a floating paraprofessional who supported students with ASD and other health impairments in both general education and special education environments. Tina also served as a substitute prior to being hired as a paraprofessional. She described her relationship with her supervising teacher as possessing established communication practices.

Diane: A Level 2 paraprofessional. Diane served as a one-to-one paraprofessional in the general education environment. She had worked with three different boys with ASD across grade levels at the elementary school. She reported having limited access to her special education teacher.

Lisa: A Level 2 paraprofessional. She reported being assigned to particular classes in both the general education and special education settings in a middle school. She supported an entire “team” of students in general education history and science and worked specifically with one teacher for self-contained math. Lisa recalled receiving frequent feedback from her self-contained teacher.

Jackie: A Level 3 paraprofessional. As a veteran paraprofessional, Jackie had previously worked with students with ASD. At the time of the interview she was assigned as a one-on-one support for a student who was blind. Jackie indicated she had received significant support and training from her teacher for the blind and visually impaired, but minimal support from her special education and general education teachers.

Courtney: A Level 3 paraprofessional. Like other interviewees, Courtney had started as a substitute paraprofessional before being hired full time by her division. She had previously worked in a classroom with students with moderate support needs and had since moved to a classroom for students with significant or multiple disabilities. She stated she had switched classes due to a “personnel conflict” and as a result, her current teacher was much more supportive.

Mary: A Level 4 paraprofessional. Mary’s experiences as a paraprofessional were unique to the interview sample in that she worked in a private day school specifically for students with disabilities. She indicated that she worked in a program for students with emotional challenges and she was assigned as a one-on-one support for a 17-year-old girl. She reported receiving a high level of formal group training through the school, but minimal individualized support.

Betty: A Level 4 paraprofessional. She had served at both the middle school and high school level in a variety of capacities, including serving for a time as a one-on-one support for a student who was blind. She indicated she had also worked as a “bus aide” where she had supervised a variety of students with disabilities. At the time of the interview she was serving as an assistant at a high school in general education classes and one self-contained special education class. She revealed receiving little support and supervision from teachers in either environment.

Instrumentation

Two instruments were developed for this study: a survey titled *Survey of Professional Development for Paraprofessionals Supporting ASD* and semi-structured interview questions (Appendix B-E). First, the development and use of the survey will be discussed, and then the development and use of the semi-structured interviews will be discussed.

Surveys. According to Fink (2003), “a survey is a system for collecting information from or about people to describe, compare, or explain their knowledge, attitudes and behavior” (p. 1). The instruments developed provided considerable data from three groups of stakeholders: paraprofessionals supporting students with ASD, teachers of students with ASD, and directors of special education. Self-assessments have been shown to be very helpful in clarifying and verifying individuals’ skills, competencies, and training needs (Wolfe & Snyder, 1997). Self-assessments have shown to be an accurate and reliable measure of teacher practices (Smithson & Porter, 1994; Blank, 2002). A thorough review of the literature assisted in the development of the surveys. Several surveys and instrument items were adapted from the literature for use in this study (Chung, 2006; Moshoyannis et al., 1999; Peterson, 2009; Young, 2006). It is particularly noteworthy that the items used to assess the need for training in EBPs had been analyzed by previous researchers and demonstrated “excellent reliability and good construct validity”

(Williams, Fan, & Goodman, 2011, p. 113). The survey instrument was developed using the following steps: (1) survey items based on the literature were generated and selected, (2) experts reviewed the measure to ensure clarity and validity, and (3) a pilot test was conducted to determine split-half reliability and clarity.

This study used two different methods to pilot the instrument: expert review and pilot study. The instrument was developed and reviewed by three researchers considered experts in the field of paraprofessional and autism research. Dr. Michael Giangreco, Dr. Dawn Hendricks, and Dr. Maureen Conroy provided feedback regarding the clarity of survey items, checked for ambiguity, and evaluated the perceived validity of the instrument (Appendix F). The survey was piloted with a cohort of participants in an online paraprofessional training course. The pilot survey was emailed to 200 cohort members of whom 46 participants responded to the survey (response rate = 23%). Participants in the pilot included special education paraprofessionals, directors of special education and special education teachers. Participants in the pilot study were also asked questions regarding the clarity of the survey. A split-half reliability analysis produced $\alpha = .672$ for part 1 and $\alpha = .905$ for part two with a spearman-brown's coefficient of $-.770$ for the pilot. The negative relationship demonstrated that if participants felt they had a low level of need for training, then they also felt they had higher levels of competency in the EBPs. The field generally accepts an alpha of this level to be interpreted as an acceptable to good level of internal validity (George & Mallery, 2003). Feedback from both the experts and pilot participants were used to create a user-friendly instrument to address the research questions of the study.

The survey was developed with three different versions, each version being tailored to the participant group of paraprofessionals supporting students with ASD (Appendix B), teachers of students with ASD (Appendix C), or directors of special education (Appendix D). For example,

item #2 presented to paraprofessionals was stated as, “Review the following list of training opportunities. Select three (3) from the list that you used the most to learn how to do your job.” This statement was modified for the teacher survey to say, “Select three (3) from the list that you believe your paraprofessionals used the most to learn how to do their job.” This same statement was posed as “Select three (3) from the list that the paraprofessionals in your division used the most to learn how to do their job” to directors of special education. Some items were omitted or added based on the participant group. The most notable additions include the question posed to teachers regarding where their knowledge and ability to supervise paraprofessionals originated and the questions of paraprofessional quality and associated risk to directors of special education.

Survey items were categorized into three sections: training, ASD, and demographics. The structure of the survey and the sequence of questions were based on best practices of survey design such as grouping similar questions together and placing demographic questions last (Krosnick & Shuman, 1988; Schwarz & Oyserman, 2001). A variety of question structures were utilized throughout the survey.

The training section used checklists and Likert scales. Likert scales have been commonly used as response ranges for surveys, testing, and other instruments (Gall, Borg, & Gall, 2007). For example, participants were asked to identify to what extent they agreed with the statements using a 4-point scale of (1) strongly disagree, (2) disagree, (3) agree, (4) strongly agree. The autism section asked participants two different types of questions, one indicating their level of training need in a particular area and another asking them to select the specific EBP in which they felt they needed the most training. The final section of the survey asked basic demographic information such as years of experience, educational level, and type of assignment (e.g., self-contained, special education resource, or general education).

Interviews. To better enhance the findings of the quantitative survey, qualitative semi-structured interviews were also used. According to Cohen and Crabtree (2006), semi-structured interviews are where an interviewer and respondent engage in a formal interview facilitated by an “interview guide” or set list of questions. The interviewer follows this guide but has the flexibility to ask follow-up questions or follow conversation trajectories as appropriate. A review of the literature and analysis of survey results were used to develop semi-structured questions (Burtch, 2009; Macione, 2009; Nemerowicz, 2009). After the analysis of the quantitative data, the interview questions were revisited and altered to better reflect the interviewee sample and emerging themes (Strauss & Corbin, 1990). Grounded theory places emphasis on the theory being built throughout the data collection process and theoretically sampling participants to gather the necessary information to build the theory (Glaser & Strauss, 1967). I remained flexible throughout the interviewing process and was able to individualize follow-up questions at the time of the interview.

Procedures

After obtaining the appropriate approvals and permissions from the dissertation committee and the Institutional Review Board at VCU, the subsequent procedures were followed. Institutional Review Board approval was given November 8, 2012. The survey was created on a web-based platform administered through REDCap (Research Electronic Data Capture). REDCap provides a “secure, web-based application designed to support data capture” and “has been approved for storage of sensitive data” (VCU, 2012, para. 4). There were several advantages to using a web-based survey including: (a) less social desirability bias as participants were anonymous (Gosling, Vazire, Srivastava, & John, 2004), (b) less researcher influence over participants (Nosek, Banaji, & Greenwald, 2002), (c) geography was not a boundary (Gosling et

al., 2004), and (d) large samples were possible anyone with a computer could participate in the survey (Gosling et al., 2004). Other advantages of using a web-based survey included: they were often found to be more representative than laboratory research sampling (Gosling et al., 2004), were found to be just as reliable as paper and pencil measures (Miller et al., 2002), have shown to have higher response rates than paper mailings (Cook, Heath, & Thompson, 2000), and were much more cost effective (Mitchell & Jolley, 2010).

An active email list of all 131 directors of special education in the Commonwealth was obtained as public information on the VDOE website. On November 26, 2012 a pre-notice email was sent to all directors of special education informing them that they would shortly receive an email asking them and their division to participate in a short survey for research purposes (Appendix G). Cook, Heath, & Thompson (2000) found that pre-notices increased response rates. The pre-notice sparked several directors of special education to respond with a request to follow their school division's procedures for conducting research. All requests were obliged and all individualized division processes were followed. One week later (December 3, 2012) the survey was sent in two different email correspondences to the same directors of special education. The first email provided information regarding the study, encouraged the directors to take the survey themselves through a unique web-link within the email, and encouraged them to forward the second email on to special education teachers and paraprofessionals within their divisions (Appendix H). The second email was to be forwarded to special education teachers and paraprofessionals and provided information regarding the study and two different web-links for staff to access the appropriate surveys (Appendix I). All emails provided my contact information so potential participants could contact me if they had any questions. All contacts and contact attempts were archived in a secure location.

Additional recruitment strategies were used to increase participation rates. Recruitment took three forms: email, website, and paper flyer. The email was sent to directors of special education as previously described. Emails were also sent to listserv members at state education agencies. The survey was also advertised on a variety of state education agency websites. To include participants who may not have had direct Internet access, a paper flyer was also distributed through the aforementioned agencies. The website and paper flyer announcements provided participants with general information regarding the survey and encouraged participants to contact me if interested in participating. The website text was the same text as the paper flyer.

The email correspondences included three different links within the emails for participants to select the survey directed towards their personnel position (paraprofessional, teacher, director). By clicking on the appropriate link participants were taken directly to the web-based survey and provided the informed consent prior to completing the study (Appendix J). Once participants read the informed consent statement, they clicked on an acceptance box to proceed to the survey questions.

Two deployment dates were used: December 3, 2012 and December 14, 2012. The second deployment was identical to the first and sent to the same email contact list to provide a reminder and increase response rate. An incentive was also provided to increase participation in the study. At the end of the survey, teacher and paraprofessional participants were given the option to provide their name and at least one piece of contact information, either a phone number or email address. This information entered them into a random drawing. Ten-dollar gift cards were awarded to one hundred drawing winners selected at random. The drawing was held two weeks after the closing of the survey. The survey closed January 30, 2013.

The quantitative survey was conducted and analyzed prior to moving to the qualitative portion of the study. After the survey had closed, I reviewed preliminary quantitative results and performed an initial read-through of the open-ended comments from the surveys. Potential interview questions were composed to provide further insight into emerging themes and items in need of clarity. Questions were then submitted to a panel of experts for review. Discussion with the expert panel brought about methodological changes in the study. I had initially proposed to interview two or three participants from each stakeholder group. One question from the survey produced unexpected differences amongst paraprofessionals and provided a new framework for the paraprofessional training paradigm. This question asked paraprofessionals to self-identify the level of training they had received and to what level they felt qualified to complete their job. As demonstrated in Chapter 4, this question resulted in leveling survey participants into four categories:

1. My school division provides training and I feel well qualified to complete my job.
2. My school division does not provide training however I feel well qualified to complete my job.
3. My school division provides training however I still feel unprepared to complete my job.
4. My school division does not provide training and I feel unprepared to complete my job.

In light of the results related to this question, the interview population was limited to only paraprofessionals who participated in the survey. Instead of using interviews to illuminate deeper similarities and differences between the stakeholder groups, the interviews were used to dig deeper into the similarities and differences between the paraprofessional levels.

Paraprofessionals were sampled across the four paraprofessional levels and purposefully selected

for variety and their alignment with the average paraprofessional who participated in the survey. Interview questions were again revisited and revised for this new population (Appendix E).

As aptly put by Creswell (2003), “qualitative data can be quantified and quantitative data can be qualified” (p. 221). To inform and provide insight into the survey responses, eight individual interviews were also conducted. Participants for interviews were purposefully sampled from those who indicated interest in continued participation in the study after completing the survey. The end of the survey provided an item for participants to agree to be contacted for further involvement and a place to put their preferred mode of contact, either an email address or phone number. After the survey closed a list of potential participants for interview was compiled. Lee, Woo, & Mackenzie (2002) suggested that studies that used mixed methods required fewer interviewees. The literature suggested at least six interviews should be conducted to reach a point of saturation where meaningful themes and useful interpretations could be developed (Guest, Bunce & Johnson, 2006; Morse 1994). Saturation occurred after eight interviews, two at each level.

Participants were purposefully selected from the compiled list and then contacted to determine a mutually beneficial time to conduct the interview. All interviews were conducted over the phone. During the interview process I first attempted to establish rapport and put the participant at ease. An atmosphere of trust, openness, and neutrality was established to elicit truthful and comprehensive disclosures (Leedy & Ormrod, 2005; Patton, 2002). Questions were slowly introduced and the flow of conversation directed the order and structure of the questions.

Data were recorded using a digital audio recorder. A new digital file was created for each participant to ensure confidentiality. An independent transcriber reproduced each audio file into a Microsoft Word document. The transcriber signed a confidentiality statement prior to receiving

the audio files. Transcripts were then submitted to interviewees for member checking. Finally, interviews were coded and analyzed simultaneously with the comments from the surveys.

Data Analysis

Quantitative. This study employed mixed methods of data collection and analysis. Data from the survey were primarily nonparametric categorical data. For data analysis, REDCap provided a variety of options such as creating reports related to specific questions or exporting data to The Statistical Package for the Social Sciences 20 (IBM SPSS, 2011). SPSS was used to conduct the statistical analysis. Once all data were exported, they were reviewed for accuracy, completion, and presence of outliers. Reliability was calculated using the Cronbach alpha coefficient. Descriptive statistics of distribution, central tendency, and dispersion were used to analyze the data from the survey. Data analysis methods to understand the professional development of paraprofessionals supporting students with ASD were described in relation to each research question as follows.

RQ1. What are the current professional development practices of paraprofessionals supporting students with ASD? Responses from the first question in the training section of the survey were analyzed to determine the frequency, mode, median, mean, standard deviation and variance of the forms of professional development perceived to be accessed by paraprofessionals. A chi-square test was used to determine if there were differences in frequencies reported by various stakeholders. Open-ended comments were coded using grounded theory methods and categories were counted and totaled regarding the theme of current practices.

RQ2. What are the barriers to professional development for paraprofessionals supporting students with ASD? Question #3 in the training section of the survey was analyzed to provide information regarding the professional development of paraprofessionals. Descriptive

statistics and a chi-square test were used to determine differences in frequencies of group responses. Barriers to training were also analyzed through the open-ended comments at the end of the survey. Comments were coded into categories that were counted and totaled.

RQ3. What are the professional development needs for paraprofessionals supporting students with ASD? Responses from the second question in the training section (“Which of these training experiences would you find the most helpful to learn new skills?”) and all questions from the ASD section were analyzed to answer this question. Descriptive statistics and a chi-square test were used to determine if there were differences in the perceived training needs between paraprofessionals, special education teachers, and directors of special education. Open-ended comments regarding training needs were coded into categories, counted, and totaled.

Qualitative Analysis. Qualitative data analysis is an inductive process where data is analyzed throughout the data collection process (Creswell, 2006; Leedy & Ormrod, 2005). This analysis was primarily achieved through the use of the constant comparative method where existing data were continuously compared with new data to look for common perspectives shared by all the stakeholder groups (Glaser & Strauss, 1967). Within this study data were coded sequentially: (1) paraprofessional survey comments, (2) teacher survey comments, (3) director survey comments, and (4) interviews. Meaning, open coding and categories were initially created through analyzing the paraprofessional survey comments. Then, using constant comparison, the teacher survey comments were compared to the paraprofessional developed categories and revised as appropriate.

Data were coded using the prescribed analytic coding procedures of Strauss and Corbin (1990,1998). This coding process consisted of four steps: (1) open coding, (2) axial coding, (3) selective coding, and (4) memoing. Open coding involved the examination of the written data

line-by-line and sentence-by-sentence to abstract codes. The purpose of open coding was to code for anything and everything that fits, for as many categories as possible, yielding concepts and their properties and dimensions (Strauss & Corbin, 1990). This phase involved the dismantling of data into pieces and parts. Sentences, phrases, and words, were coded into key concepts, actions, and perceptions of stakeholders. These concepts were then color-coded and separated into various categories for further analysis. After categories and subcategories were identified I moved to the next phase of coding: axial coding.

The purpose of axial coding was to identify relationships between the created categories. Axial coding analyzed the categories for relationships such as necessary context or conditions for the phenomenon to occur; actions, interactions, and reactions of participants with the phenomenon; and consequences of actions or inactions. The color-coded categories were reviewed and compared to other categories for consistency of concepts. Axial coding put the data back together in new ways. For example, staff support, staff respect, and staff communication were combined into a new concept of “relationships.” Established categories were validated through the use of constant comparison across all phases. This phase facilitated the creation of a theory to explain the phenomenon.

The final phase of coding was selective coding. Selective coding integrated and refined the theory (Strauss & Corbin, 1998). All categories were related back to the central theme. At this point, some sub-categories were not relevant to the theory and were not included in the theoretical framework (Strauss & Corbin, 1998). For example, comments about “the importance of paraprofessionals in schools” was not directly identified in the theory but addressed through other concepts presented within the theory.

Memos were used throughout the data analysis process. *Memoing* is a technique where I wrote notes to myself regarding the study. The memos allowed me to process and reflect upon the data. Strauss and Corbin (1998) described three kinds of memos: code notes, theoretical notes, and operational notes. Code notes were used to ascribe meaning and definitions to codes and labels throughout the analysis process. For example, code notes were used to differentiate between positive and negative relationship comments. Theoretical notes were used to reflect on concepts and relationships to make deeper meaning out of the theory. These were also used to help guide further analysis. Theoretical notes were written throughout the coding process and were used as a form of reflection. These were often used to formulate emerging theories and provide cues to further compare, contrast, or revise categories or themes. Finally, operational notes related to the methodological processes used, such as changes in data collection. As stakeholder data were analyzed in waves, if a new theme emerged within the administration data, an operational note was used to prompt me to analyze the data in the same manner in the teacher and paraprofessional data.

To further increase credibility, all transcripts, coding, themes, and sub-categories were supplied to a second reviewer for validation. As mentioned previously, the second reviewer analyzed the data through the lens of an expert qualitative researcher without bias regarding paraprofessionals to increase trustworthiness. The codes, themes, and sub-categories were reread while reflecting on the developed theory. Feedback was provided from the second reviewer and the theory was revised again to incorporate newly identified perspectives. As a result, a final theory was developed and presented as a narrative.

Ethical Assurances

This study relied on the participation of human subjects. Participation was voluntary and compensation minimal. The Institutional Review Board at VCU approved the study design and implementation. Study communications were limited to those who agreed to participate in the study or those requesting additional information regarding the study. Prior to the study, each participant was informed of the confidentiality and privacy measures that were to be taken throughout the study. By clicking on the acceptance box in the web-based survey, participants provided consent to participate in the study. Prior to conducting the interviews, an additional verbal consent was obtained to confirm permission to record the interview.

To ensure confidentiality, steps were taken to ensure secure data management. Interview and prize drawing contact information were removed from the original data and replaced with an identification code. A separate data file was created to archive any identifying information of participants such as contact information. All information regarding the study was housed on a password-protected computer and REDCap, which is a secure web server, managed by the VCU Office of Technology Services. At the completion of the study, the data file containing contact information was destroyed using an industry standard security process.

Summary

The purpose of this study was to understand professional development for paraprofessionals supporting students with ASD. This understanding was reached through both quantitative and qualitative data collection and analysis methods. Surveys and interviews provided insight into training practices, training needs, and training barriers for paraprofessionals supporting students with ASD. An interpretation of professional development was developed through considering the perceptions of paraprofessionals supporting students with ASD, teachers of students with ASD, and directors of special education in Virginia.

Chapter 4

Quantitative Results

The purpose of this study was to examine professional development for paraprofessionals supporting students with ASD through quantitative and qualitative approaches. Specifically, this study attempted to answer the following research questions:

1. What are the current professional development practices of paraprofessionals supporting students with ASD? (RQ1)
2. What are the barriers to professional development for paraprofessionals supporting students with ASD? (RQ2)
3. What are the professional development needs for paraprofessionals supporting students with ASD? (RQ3)

This chapter describes the quantitative results of a survey distributed to directors of special education, teachers, and paraprofessionals. The following topics are addressed in this chapter: (1) data screening process, (2) survey results through the analysis of each research question, (3) numerical count of categories from the survey open-ended comments, and (4) a summary.

Chapter 5 discusses the qualitative results.

Data Screening Process

All data were screened for accuracy and completion prior to analyses. Items that allowed participants to fill-in-the-blank were manually screened for outliers such as impossible numbers in years of experience or number of paraprofessionals (e.g., a negative number). Partial surveys were included in all analyses if the participants answered more than the first four questions. Cases where participants did not answer beyond the first four questions were deleted from analysis and were reflected in the total number of participants who accessed the survey. Thus, 217 paraprofessional cases were deleted, 163 teacher cases were deleted, and 19 director cases were deleted (see Table 1). The remaining cases were counted for the total number of surveys and accordingly considered the “paraprofessional sample,” the “teacher sample,” and the “director sample.”

Missing data were managed using listwise and pairwise deletion for each computation. Pairwise deletions were used with correlation statistics. Although many researchers have presented concerns related to using listwise and pairwise deletion to handle missing values (Acock, 2005; King, Hopnaker, Joseph, & Scheve, 2001, von Hippel, 2004), others have estimated that if less than 20% of cases are excluded by listwise deletion then the biases are minimized (Arbuckle, 1996; Peng, Harwell, Liou, & Ehman, 2006). As shown in Table 1, missing data did not exceed 15% for any stakeholder groups.

Analysis of Research Questions

Table 8 describes the research questions for the study and the analyses process for each. As previously described, three different survey versions were created for each key stakeholder group and Table 8 reflects some questions that were asked only of teachers and directors.

Table 8

Survey Item Correspondence to Research Questions

Research question	Survey instrument items	Statistical analysis
RQ1. What are the current professional development practices of paraprofessionals supporting students with ASD?	<ul style="list-style-type: none"> • Which statement best describes you? Qualified to complete job (select 1) • Previous Training Experience (Select up to 3) • For Teachers only: Learned supervision of paraprofessionals (check all that apply) • For Teachers only: Frequency of paraprofessional supervision (Likert scale) • For Teachers only: Number of paraprofessionals supervised • For Directors only: Paraprofessional support and quality within the division (Likert scale) • For Directors only: Number of one-on-one paraprofessional support within their division 	<p>Frequencies, percentages, chi-square</p> <p>Frequencies, chi-square</p> <p>Frequencies, percentages</p> <p>Frequencies, percentages</p> <p>Frequencies, percentages</p> <p>Mean, SD, frequencies, percentages</p> <p>Frequencies, percentages</p>
RQ2. What are the barriers to professional development for paraprofessionals supporting students with ASD?	<ul style="list-style-type: none"> • Training barriers (Likert scale) 	<p>Mean, SD, chi-square</p>
RQ3. What are the professional development needs for paraprofessionals supporting students with ASD?	<ul style="list-style-type: none"> • Training format (Likert scale) • Level of need in ASD area (Likert scale) • Top ASD strategy (select one) 	<p>Mean, SD, chi-square</p> <p>Mean, SD, chi-square</p> <p>Frequencies, percentages, chi-square</p>

RQ1. What are the current professional development practices of paraprofessionals supporting students with ASD?

Research question 1 was analyzed using five questions from the survey across all stakeholder groups. Data were analyzed within and between paraprofessional, teacher, and director samples. What follows is a description of the results from each survey question.

Qualified to complete job. All stakeholders were asked to select a statement that best described paraprofessionals within their division. Based off their answer selection, paraprofessionals were leveled on training received and qualifications (Table 9). For complete statements see Appendix B.

Table 9

Paraprofessional Level Descriptions

Level	Perception of training received	Perception of qualified to complete job
Level 1	Trained	Qualified
Level 2	Not trained	Qualified
Level 3	Trained	Not qualified
Level 4	Not trained	Not qualified

Both paraprofessionals (45.9%) and directors (45.8%) identified the majority of the paraprofessionals in their division as being a Level 1 paraprofessional (both trained and qualified). Teachers differed as the majority (26.1%) felt paraprofessionals fell into the Level 2 (not trained and yet qualified). As shown in Table 10, both paraprofessional and director responses were clustered near Level 1 and dissipated as the responses reached Level 4. However, with teachers the responses were much more evenly spread across all four levels. The relation between stakeholders was significant for paraprofessional levels, $X^2(14, N = 1364) = 1390.40, p$

< .00. Paraprofessionals selected all levels higher than expected with the most significant difference for Level 1.

Table 10

Perceptions of Paraprofessionals Qualified for Job by Stakeholder Groups

Level	Para. (<i>n</i>)	Para. (%)	Teachers (<i>n</i>)	Teachers (%)	Directors (<i>n</i>)	Directors (%)
Level 1	368	45.9	157	23.3	22	45.8
Level 2	243	30.3	176	26.1	14	29.2
Level 3	58	7.2	151	22.4	10	20.8
Level 4	42	5.2	121	17.9	2	4.2
Total	711	88.6	605	89.7	48	100

Note. Para. = paraprofessionals.

After initial analyses, it appeared that the responses to this question helped classify significant differences between results in other questions. As a result, in further sections the differences and similarities were calculated between stakeholder groups and within the paraprofessional sample based on the four levels. For example, Level 1 paraprofessional responses were compared to Level 4 paraprofessional responses.

Using these levels, there were no significant differences between the levels of paraprofessionals and their assigned location, $X^2(9, N = 670) = 9.74, p < .37$. Nor were there significant differences between the levels of paraprofessionals and their years of experience, $X^2(15, N = 641) = 24.32, p < .06$. There were also no significant differences between the levels of paraprofessionals and their educational level, $X^2(9, N = 667) = 16.20, p < .06$. There were, however, significant differences between the levels of paraprofessionals and the grade level of students they serve, $X^2(9, N = 669) = 20.82, p < .01$. Paraprofessionals assigned to high schools

were less likely to select Level 3 and Level 4, indicating they were more likely to feel qualified to complete their jobs. Early childhood paraprofessionals were less likely to select Level 4, signaling that on a whole they felt qualified to complete their responsibilities. Elementary paraprofessionals were more likely to select Level 4 than other groups.

Previous training experience. Previous training experience provided participants a list of potential training options and asked them to select up to three choices. As participants could select more than one choice, percentages were not calculated. Table 11 displays the results across all stakeholder groups.

Table 11

Previous Training Experiences Across Stakeholder Groups

Training Experience	Paraprofessionals (<i>n</i>)	Teachers (<i>n</i>)	Directors (<i>n</i>)
University course	120	57	2
Online course	282	111	20
Observe others	443	506	33
Coaching	309	--	42
Workshop	336	361	37
Self-study materials	183	108	5
Prior job experience	255	305	9
Comprehensive training	58	57	5
Trial and error	206	294	9
Initial job training	155	167	7
Other	25	18	1

Note. Teacher survey inadvertently failed to collect data on coaching as a form of previous training experience.

Chi-square tests of independence were performed for each variable to examine the relations between each stakeholder group. The relation between stakeholders was significant for the variable “university for credit course”, $X^2(2, N = 1530) = 18.67, p < .00$. Paraprofessionals were more likely to select this as a form of previous training than teachers or directors. There was also a significant relation between stakeholders for the variable “online course not for college credit,” $X^2(2, N = 1530) = 67.75, p < .00$. Paraprofessionals were also more likely to select this form of previous training than teachers or directors. Stakeholders also significantly differed on the variable “observation of teacher or other staff members,” $X^2(2, N = 1530) = 62.65, p < .00$. Although paraprofessionals selected this variable with the highest frequency, they still selected this choice much lower than expected.

With regards to the variable “coaching/ training from teachers or staff members,” there was also a significant relation between stakeholders, $X^2(1, N = 856) = 30.38, p < .00$. Directors selected this variable much higher than expected. It should also be noted that coaching was accidentally omitted from the teacher version of the survey, therefore, no totals were reported. The relation between stakeholders was also significant for “workshop/ in-service,” $X^2(2, N = 1530) = 28.29, p < .00$. Although this was the second most frequently chosen variable for paraprofessionals, they were still less likely than teachers or directors to choose workshop.

For the variable “reading self-study materials such as a handbook, procedures guide, or workbook” there was a significant relation between stakeholders, $X^2(2, N = 1530) = 14.77, p < .001$. Paraprofessionals were more likely to select this choice than teachers or directors. There was also a significant relation between stakeholders for the variable “prior job experience,” $X^2(2, N = 1530) = 38.80, p < .00$. Teachers selected this choice much higher than expected. There was no relation between stakeholders for the variable “comprehensive training program,” $X^2(2, N =$

1530) = .872, $p < .647$. Stakeholders significantly differed in relation to the variable “trial and error,” $X^2(2, N = 1530) = 60.18, p < .00$. Teachers were more likely to select trial and error as a form of previous training experience than paraprofessionals and directors. The relation between stakeholders was also significant for “initial job training,” $X^2(2, N = 1530) = 8.99, p < .01$. Teachers selected initial job training higher than expected. There was no significant relation between stakeholders for the variable “other,” $X^2(2, N = 1530) = .494, p < .781$.

Out of the eleven selection choices for previous training experiences, six displayed significant differences between the levels of paraprofessionals (1-4). There was a significant difference between the levels of paraprofessionals and their selection of university for credit courses as a form of previous training, $X^2(3, N = 711) = 9.64, p < .02$. Level 3 paraprofessionals were less likely to select university courses than other stakeholders. There were also differences between levels and the variable “online course not for college credit,” $X^2(3, N = 711) = 11.01, p < .01$. Level 2 paraprofessionals selected this variable lower than expected. Within the levels of paraprofessionals there was a significant difference for the variable “workshop/ in-service,” $X^2(3, N = 711) = 27.38, p < .00$. Although Level 3 paraprofessionals selected this choice higher than expected, Level 4 paraprofessionals selected this choice lower than expected.

The variable “prior job experience” was significantly different across levels of paraprofessionals, $X^2(3, N = 711) = 10.22, p < .02$. Level 4 paraprofessionals were less likely than other levels to select this form of previous experience. Differences were also observed between levels of paraprofessionals and their selection of “initial job training,” $X^2(3, N = 711) = 10.15, p < .02$. Level 1 paraprofessionals checked this variable higher than expected, in contrast to Level 2 paraprofessionals who checked it lower than expected.

Table 12

Top Previous Training Experiences Ranked by Stakeholder Groups

Rank	Level 1 Para.	Level 2 Para.	Level 3 Para.	Level 4 Para.	Teachers	Directors
#1	Observe others	Observe others	Workshop	Observe others	Observe others	Coaching
#2	Workshop	Prior job	Observe others	Trial-&-error	Workshop	Workshop
#3	Online course	Coaching	Coaching	Online course	Prior job	Observe others

Note. Para. = paraprofessionals.

To make further sense of the data, frequencies of comments were rank ordered across paraprofessional levels and stakeholder groups. The top three selected previous learning experiences were compared across groups (Table 12). This revealed that stakeholders were primarily in agreement that paraprofessionals had learned to complete their duties through observing other staff. Workshops were also highly selected.

Table 13

Rank Order of Trial and Error by Paraprofessional Levels

	Level 1 Para.	Level 2 Para.	Level 3 Para.	Level 4 Para.
Selected rank (out of 11)	8th	5th	4th	2nd

Note. Para. = paraprofessionals.

There were significant differences amongst groups for the variable “trial and error,” $\chi^2(2, N = 711) = 33.32, p < .00$. Level 1 paraprofessionals were much less likely to select this choice, and Level 4 paraprofessionals were much more likely to select this choice. The rank ordering of previous training experiences showed that the selection of trial and error dramatically increased

as the paraprofessionals' perceptions of being qualified decreased (i.e., as the levels decreased) as seen in Table 13.

Teachers' formats for learning supervision. The teacher survey contained a unique section asking them to provide more information about their own previous training experience regarding how to supervise paraprofessionals. 674 teachers responded to this question and were asked to select all experiences that applied to them. As shown in Table 14, the majority of teachers (85.3%) selected real-life experience as how they learned to support and train paraprofessionals, with other resource materials such as books and the Internet following second (26.5%). The least frequently selected choice was an entire university course dedicated to the supervision of paraprofessionals (1.6%).

Table 14

Training Experiences of Teachers to Supervise Paraprofessionals

Training format	Teachers (<i>n</i>)	Teachers (%)
Real-life experience	576	85.3
School or division training	146	21.6
Part of a college course	128	19
Entire college course	11	1.6
VDOE ^a materials	56	8.3
Other	179	26.5

^a Virginia Department of Education

Frequency of teacher supervision. Teachers were asked to report how frequently they provided support and training to paraprofessionals. The majority of teachers (33.5%) indicated they provided support and training on a daily basis (see Table 15). Of the 96 teachers that

indicated they don't provide any sort of supervision to paraprofessionals, only 33 also reported having zero paraprofessionals under their supervision. This concludes that 66 teachers (10.8%) have paraprofessionals under their supervision, but they don't see themselves as providing support or training.

Table 15

Frequency of Teacher Supervision of Paraprofessionals

Frequency	Teachers (<i>n</i>)	Teachers (%)
Daily	226	33.5
Weekly	111	16.4
Monthly	73	10.8
Less than monthly	105	15.6
I don't provide support or training to paraprofessionals	96	14.2
Total	611	90.5

Number of paraprofessionals under supervision. Teachers reported supervising an average of 2.14 paraprofessionals ($SD = 2.19$). The majority of teachers reported only having one (30.8%) or two (22.4%) paraprofessionals. Only 2.5% of teachers reported having more than six paraprofessionals under their supervision. The maximum number of a paraprofessionals reported under one teacher's supervision was 20.

Directors' perceptions of paraprofessional quality and support. Directors were asked a series of questions where they were asked to select the statement that best described the paraprofessionals in their division. The first question asked directors to select a statement classifying the frequency of coaching and training teachers provide to paraprofessionals. The majority of directors (62.8%) felt paraprofessionals were provided some coaching and direction

(M = 3.12, SD = .65). 68.75% of directors reported paraprofessionals cost a lot but with good return (M = 2.29, SD = .89). The majority of directors (58.8%) felt some of the services paraprofessionals provided were quality services. Only 4% of directors of special education felt paraprofessionals were a high risk to their division. The majority of directors (50.0%) felt there was some risk associated with having paraprofessionals provide services to students with ASD.

Table 16

One-on-One Paraprofessional Supports Within Division

Percentage	Directors (n)	Directors (%)
0-25%	43	84.3
26-50%	6	11.8
51-75%	2	3.9
76-100%	0	0
Total	51	100

One-on-One paraprofessional support. Directors of special education were asked to approximate how many students with ASD have one-on-one paraprofessional support within their division. As shown in Table 16, the majority of directors (84.3%) reported only 0-25% of their students receiving one-on-one support.

RQ2. What are the barriers to professional development for paraprofessionals supporting students with ASD?

One section of questions was used to analyze the barriers to training that paraprofessionals encountered. All stakeholders were asked to rank a series of statements using a 5-point Likert Scale with 1 being *strongly disagree* and 5 being *strongly agree*. The comments at the end of the survey also provided extensive feedback regarding the barriers paraprofessionals face. Means and Standard Deviations of all stakeholders for each variable are shown in Table 17.

See Appendix B for survey statements in their entirety. Statements in Table 17 were condensed for brevity. When means were rank ordered, there was no agreement amongst stakeholders regarding the top barrier. However, all stakeholders agreed the lack of Internet access was the least likely barrier to receiving training. Chi-square tests of independence revealed significant differences across all stakeholders for all variables.

Table 17

Training Barriers Across Stakeholders

Barrier	Para. (M)	Para. (SD)	Teachers (M)	Teachers (SD)	Directors (M)	Directors (SD)
Training doesn't pertain to job	3.26	1.19	3.52	1.06	3.23	1.23
Number of extra hours	3.18	1.15	4.13	0.94	4.08	1.11
Times conflict with other responsibilities	3.63	1.07	4.04	0.94	3.82	1.11
No incentives	4.00	1.17	4.47	0.82	4.18	1.04
Not paid for extra hours	3.82	1.21	4.31	0.95	3.62	1.34
Trainings aren't regularly scheduled	3.71	1.13	3.63	1.17	3.18	1.28
No internet at home	2.07	1.29	2.61	1.08	3.22	0.94
No time during school day	3.96	1.11	4.13	0.98	3.94	0.98

Note. Para. = paraprofessionals.

With regards to “the subjects covered in trainings rarely pertain to my job,” paraprofessionals selected *strongly disagree* much higher than expected, but teachers selected this option much lower than expected, $X^2(8, N = 1349) = 25.41, p < .00$. There were significant differences amongst all stakeholder groups for the variable “the number of hours of extra work involved,” $X^2(8, N = 1359) = 248.31, p < .00$. Paraprofessionals were much less likely to select

strongly agree, but teachers and directors were much more likely to select *strongly agree* that the number of hours was a barrier. Teachers were more likely to *strongly agree* that training times were a barrier, but paraprofessionals were less likely to *strongly agree*, $X^2(8, N = 1359) = 54.39, p < .00$.

With regards to the variable “there are no incentives for me to attend trainings, e.g. pay raises, compensation time, bonus money, etc.” paraprofessionals selected *strongly agree* much lower than expected and teachers selected it higher than expected, $X^2(8, N = 1384) = 70.48, p < .00$. Again, paraprofessionals and teachers significantly differed with regards to “I am not paid for the hours that I attend training outside of the school day,” $X^2(8, N = 1360) = 76.64, p < .00$. Paraprofessionals were less likely to select *strongly agree*, but teachers were more likely.

Directors selected “disagree regarding the variable there are not regularly scheduled trainings for paraprofessionals in my division” higher than other stakeholder groups, $X^2(8, N = 1357) = 22.22, p < .00$. When given the statement “I do not have Internet access at home,” all stakeholders displayed significant differences, $X^2(8, N = 1339) = 225.75, p < .00$.

Paraprofessionals selected *no opinion* much lower than expected. They selected both *strongly disagree* and *strongly agree* much higher than expected with the standard residual being much higher for *strongly disagree* (SR = 6.8). Teachers were the inverse with a high level of *no opinion* and much lower than expected *strongly disagree* and *strongly agree* selections. Directors were also more likely to select *agree* than other stakeholders. The paraprofessional results should be viewed with caution as the survey had to be accessed using the Internet.

Teachers and paraprofessionals also had significant differences related to the variable “there is no time during the school day for me to receive training,” $X^2(8, N = 1366) = 21.00, p < .00$.

.01. Paraprofessionals were more likely to *strongly disagree* with this statement and teachers were less likely to *strongly disagree* with no time during the school day as a barrier.

Training barriers were also analyzed through the lens of paraprofessional levels (1-4). Of the eight statements, five showed significant differences between paraprofessional levels when analyzed using a chi-square test of independence. Level 1 and Level 2 paraprofessionals significantly differed regarding “training rarely pertain to my job,” $X^2(12, N = 674) = 30.24, p < .00$. Level 1 paraprofessionals were more likely to select *disagree*, but Level 2 paraprofessionals were less likely. Level 1 and Level 2 paraprofessionals also showed significant differences for the variable “there are no incentives for me to attend trainings,” $X^2(12, N = 682) = 39.47, p < .00$. Level 1 paraprofessionals selected *strongly agree* lower than expected and Level 2 paraprofessionals selected *strongly agree* higher than expected. When queried regarding “I am not paid for the hours that I attend training outside of the school day,” Level 1 paraprofessionals *strongly agreed* lower than expected in contrast to Level 2 paraprofessionals selected it higher than expected, $X^2(12, N = 674) = 37.79, p < .00$. Level 3 paraprofessionals were more likely to select *strongly disagree* for not being paid as a barrier than other stakeholders.

Both Level 2 and Level 4 paraprofessionals who report their divisions do not provide training were more likely to *strongly agree* with the statement “there are no regularly scheduled trainings for paraprofessionals in my division,” $X^2(12, N = 673) = 131.65, p < .00$. Level 1 paraprofessionals who do receive training selected *strongly agree* lower than expected. Lastly, Level 1 paraprofessionals selected *strongly disagree* regarding not having Internet as a barrier much lower than expected, $X^2(12, N = 668) = 26.35, p < .01$. Level 2 paraprofessionals selected *strongly disagree* for this variable higher than expected.

The barriers were rank ordered by their means and compared across paraprofessional levels and stakeholder groups (Table 18). All paraprofessionals and teacher agreed that the lack of compensation and incentives to attend training was the top barrier. Directors perceived the “extra hours involved” in attending trainings as being the top barrier for paraprofessionals, which was not one of the top three choices by either teachers or paraprofessionals. “No scheduled training” within their division was highly selected by Level 2 and Level 4 paraprofessionals. This further reflected their selection of having received no training. “No time during the school day” and “not paid for the extra hours” were also highly ranked.

Table 18

Top Barriers as Ranked by Stakeholder Groups

Rank	Level 1 Para.	Level 2 Para.	Level 3 Para.	Level 4 Para.	Teachers	Directors
#1	No incentives	No incentives	No incentives	No incentives	No incentives	Extra hours involved
#2	No time during day	Not paid for extra hours	No time during day	No scheduled training	Not paid for extra hours	No incentives
#3	Not paid for extra hours	No scheduled training	Not paid for extra hours	Not paid for extra hours	No time during day	Not paid for extra hours

Note. Para. = paraprofessionals.

Stakeholders were also able to provide other comments regarding perceived barriers. Thirty-two paraprofessionals provided additional feedback. Four major concepts emerged: (a) they aren’t paid enough to justify the extra time and effort training requires, (b) they are not compensated for training outside of the school day, (c) their position is not respected and administration and other personnel do not place an importance on providing them training, and (d) the training they are provided is very basic and repetitive. Twenty teachers also provided

feedback regarding perceived barriers. Teachers echoed two of the barriers identified by paraprofessionals: (a) paraprofessionals aren't adequately paid, and (b) training opportunities are not offered to paraprofessionals and may, in part, be due to lack of administration respect. Teachers identified a potential barrier of the paraprofessional's disposition. Several teachers indicated that some paraprofessionals felt they didn't need training when they actually do, or those who need training the most are the least likely to attend training. Only two directors provided additional comments. One indicated his division paid for training time outside of the school day and the other director mentioned the need for training, specifically for early childhood special education paraprofessionals.

RQ3. What are the professional development needs for paraprofessionals supporting students with ASD?

Training format. All stakeholders were asked to rate training formats on a Likert Scale of 1 to 5, with 1 being *not helpful* and 5 being *most helpful*. The means and standard deviations of the different stakeholders across the training formats were calculated (see Table 19). Chi-square tests of independence were performed on each variable. All variables showed a significant difference between stakeholders except for "observing other effective teachers or staff members," $\chi^2(8, N = 1362) = 3.36, p < .91$. Paraprofessionals were more likely to select college coursework as being most helpful than teachers or directors, $\chi^2(8, N = 1341) = 39.68, p < .00$. In fact, teachers selected college coursework as *most helpful* much lower than expected. The same held true for online training. Paraprofessionals selected this as *most helpful* more than expected, but teachers selected *most helpful* lower than expected, $\chi^2(8, N = 1339) = 24.13, p < .00$.

When asked to rank "monthly meetings with my teacher about specific topics," paraprofessionals were more likely chose *not helpful* and *no opinion* than other stakeholders, χ^2

(8, $N = 1331$) = 34.46, $p < .00$. Teachers and paraprofessionals differed significantly when ranking workshops, X^2 (8, $N = 1366$) = 30.49, $p < .00$. Teachers ranked workshops as *most helpful* much higher than expected, but paraprofessionals ranked workshops as *not helpful* and *somewhat helpful* much higher than expected.

Table 19

Preferred Training Format for Paraprofessionals

Format	Para. (<i>M</i>)	Para. (<i>SD</i>)	Teachers (<i>M</i>)	Teachers (<i>SD</i>)	Directors (<i>M</i>)	Directors (<i>SD</i>)
College coursework paid for by division	3.81	1.15	3.47	1.23	3.26	1.28
Online training not for credit	3.46	1.22	3.17	1.21	3.28	1.33
Observing other staff	4.14	0.95	4.18	0.89	4.16	0.82
Monthly meeting with teacher	3.61	1.17	3.84	1.08	3.86	1.11
Workshops	3.87	1.07	4.12	0.92	4.23	0.66
Immersion sessions	3.37	1.19	3.33	1.22	2.98	1.31
Small group training	3.48	1.20	3.63	1.14	4.00	1.02
Self-study materials	3.3	1.24	2.66	1.19	2.39	1.09
Problem solving with other staff	4.2	0.98	4.17	0.87	4.30	0.86
Comprehensive training program	3.68	1.19	3.61	1.19	3.94	1.08

Note. Para. = paraprofessionals.

There were several significant differences between stakeholders when asked about “immersion sessions- intensive study on one topic (such as 1-2 days),” X^2 (8, $N = 1316$) = 40.24, $p < .00$. Paraprofessionals were more likely to select *no opinion* and less likely to select *somewhat helpful*. Teachers selected *no opinion* lower than expected. Directors selected *not*

helpful much higher than expected. Paraprofessionals indicated that “small group training meeting many times over the year” was *not helpful* or had *no opinion* much higher than expected, $X^2(28, N = 1337) = 26.06, p < .00$. Paraprofessionals and teachers also significantly differed on the variable “self-study materials such as a handbook, procedure guide, or workbook,” $X^2(8, N = 1320) = 98.98, p < .00$. Paraprofessionals were more likely to select *helpful* or *most helpful*, but teachers were less likely to select these choices.

There were also significant differences between paraprofessionals and teachers regarding “problem solving with my teacher(s) or other staff around a specific student, situation, or activity,” $X^2(8, N = 1372) = 26.21, p < .00$. Teachers were less likely to indicate this form of training to be *not helpful*, but paraprofessionals were more likely to select *not helpful*. Lastly, the variable “comprehensive training program covering many areas of being a paraprofessional” displayed significant differences between teachers and paraprofessionals, $X^2(8, N = 1355) = 18.89, p < .01$. Paraprofessionals selected *somewhat helpful* lower than expected and teachers selected it higher than expected.

Table 20

Top Preferred Training Formats as Ranked by Stakeholder Groups

Rank	Level 1 Para.	Level 2 Para.	Level 3 Para.	Level 4 Para.	Teachers	Directors
#1	Problem solving	Problem solving	Problem solving	Comprehensive training	Observe others	Problem solving
#2	Observe others	Observe others	Workshop	Problem solving	Problem solving	Observe others
#3	University coursework	University coursework	Observe others	Workshop	Workshop	Monthly meeting

Note. Para. = paraprofessionals.

The means of training formats were rank ordered for each stakeholder group. Paraprofessionals were further delineated into their Levels (1-4) as seen in Table 20. Stakeholders were primarily in agreement that problem solving with others and observing others were the most desired training formats. All stakeholders ranked self-study materials last. Level 4 paraprofessionals selected comprehensive training as their most desired training format. This was in agreement with their perceptions that they were not trained or qualified, and therefore needed training in a wide variety of topics.

There were no significant differences between paraprofessional levels and their rank ordering of training formats. Chi-square tests of independence indicated there were significant differences between the paraprofessional levels on 3 variables: comprehensive training, online training, and immersion sessions. Level 3 paraprofessionals were less likely than other paraprofessionals to select online training as being *not helpful*. However, they were more likely to have *no opinion* regarding online training, $\chi^2(12, N = 660) = 22.46, p < .03$. Level 2 paraprofessionals selected *not helpful* with regards to immersion sessions higher than expected, $\chi^2(12, N = 641) = 22.00, p < .04$. Level 4 paraprofessionals were much more likely to select comprehensive training as helpful than other paraprofessional levels, $\chi^2(12, N = 667) = 24.09, p < .02$.

Training needs in ASD areas. All stakeholder groups were asked to rate the level of need for training in four key areas of ASD: communication supports, social skills strategies, behavior strategies, and instructional strategies. Stakeholders were asked to rank their level of training need in the particular area using a Likert Scale of 1-5, with 1 being *no need* to 4 being *high need*. Participants could also select *I don't know* that was coded as a 5. Means and standard

deviations for all three groups are displayed in Table 21. Chi-square tests of independence revealed significant differences between groups across all variables.

Paraprofessionals selected *high need* much lower than expected for the area of communication, $X^2(8, N = 1378) = 147.38, p < .00$. Teachers, on the other hand, selected *high need* for paraprofessionals to receive training in communication much higher than expected. The same held true for training in social skills, $X^2(8, N = 1370) = 234.53, p < .00$. Teachers were more likely to select *high need* for social skills, but paraprofessionals were less likely. This same pattern was maintained for the behavior variable, $X^2(8, N = 1366) = 208.17, p < .00$. Both teachers and directors selected *high need* higher than expected, but paraprofessionals selected it lower than expected. Paraprofessionals also selected *high need* much lower than expected with regards to instructional training needs, $X^2(8, N = 1363) = 181.00, p < .00$. Again teachers selected instruction as *high need* higher than expected. Paraprofessionals consistently identified their need for training across all ASD areas lower than teachers and directors. Means for training areas were also rank ordered within the stakeholder groups. All groups ranked behavior as the top ASD training need and instruction as the bottom ASD training need.

Table 21

Training Needs for Autism Spectrum Disorder Areas by Stakeholder Groups

Area	Para. (M)	Para. (SD)	Teachers (M)	Teachers (SD)	Directors (M)	Directors (SD)
Communication	2.69	0.96	3.27	0.87	3.12	0.82
Social skills	2.58	0.96	3.35	0.82	3.22	0.90
Behavior	2.71	0.95	3.42	0.82	3.45	0.83
Instruction	2.57	0.92	3.21	0.85	3.10	0.86

Note. Para. = paraprofessionals.

To further investigate paraprofessionals' low identification of need for training, their results were broken down into the different paraprofessional levels. Significant differences were found amongst the paraprofessional levels for all four areas of ASD training needs. Level 3 and Level 4 paraprofessionals selected *high need* in the area of communication more than the other levels, $X^2(12, N = 696) = 69.95, p < .00$. Level 1 paraprofessionals selected *high need* in communication much lower than expected. A similar distribution was observed for training in the area of social skills, $X^2(12, N = 692) = 85.26, p < .00$. Level 3 and 4 paraprofessionals selected *high need* higher than expected, but Level 1 paraprofessionals selected it lower than expected. Again, significant differences were observed in the responses of Level 3 and 4 paraprofessionals as compared to Level 1 paraprofessionals with regards to behavior training, $X^2(12, N = 688) = 102.19, p < .00$. Level 3 and 4 paraprofessionals were more likely to select *high need*, but Level 1 paraprofessionals were less likely. Level 3 and 4 paraprofessionals also demonstrated a higher than expected selection of *high need* for the area of instruction, $X^2(12, N = 685) = 86.22, p < .00$. For instruction, Level 1 paraprofessionals selected *no need* higher than expected. It is logical that paraprofessionals who feel unqualified to complete their jobs (Levels 3 and 4) would be more likely to identify their need for training to be greater. Paraprofessionals who felt they had received training and were qualified (Level 1) were more likely to identify their need for training to be lower.

Selection of particular ASD strategies. All stakeholders were also asked the question, "If you could only pick one _____ strategy, which one do you(r paraprofessionals) need the most training in?" Strategies were grouped according to the four ASD areas of communication, social skills, behavior, and instruction. The strategies were selected from the 24 NPDC on ASD EBPs (Appendix A). Only 12 of the 24 EBPs were queried in the survey. Some strategies were

purposefully not asked, as they are not appropriate for paraprofessionals to implement. For example, parent implemented interventions. Two foundational principles were also assessed through these questions: “facilitation of communication opportunities throughout the day” and “behavior as communication.” These principles were frequently referenced in the NPDC on ASD literature (Collet-Klingenberg, 2008; Franzone, 2009; Franzone & Collet-Klingenberg, 2008). The following tables (Tables 22-25) display the frequencies and percentages of selected strategies by the various stakeholders.

Table 22

Top Communication Strategy Across Stakeholder Groups

Strategy	Para. (n)	Para. (%)	Teachers (n)	Teachers (%)	Directors (n)	Directors (%)
VOCA	130	16.2	32	4.7	2	3.6
Comm. opportunities	252	31.4	309	45.8	22	39.3
FCT	219	27.3	131	19.4	15	26.8
PECS	79	9.9	85	12.6	10	17.9
Other	37	4.6	29	4.3	1	1.8
Total	717	89.4	586	86.8	50	89.4

Note. VOCA = Voice Output Communication Aid, Comm. opportunities = Facilitating communication opportunities throughout the day, FCT = Functional Communication Training, PECS = Picture Exchange Communication System, Para. = Paraprofessionals

Top communication strategy. With regards to communication, all stakeholders agreed the top two strategies that needed more training were “Facilitating communication opportunities throughout the day” and “Functional Communication Training” (see Table 22). Using a chi-square test of independence, significant differences in the strategies selected by teachers and paraprofessionals were found, $X^2(8, N = 1353) = 82.92, p < .00$. Paraprofessionals selected

“Voice Output Communication Aid” higher than expected and “Communication opportunities” lower than expected. On the other hand, teachers selected “Voice Output Communication Aid” and “Functional Communication Training” lower than expected and “Communication Opportunities” higher than expected.

Of the 37 paraprofessionals to select “other,” 28 provided additional comments. Seven paraprofessionals indicated they would like to receive more training in American Sign Language, however, neither teachers nor directors mentioned this as a strategy paraprofessionals may need. Five paraprofessionals also commented they needed additional assistance in learning how to use technology related to communication. Twenty-five of the 29 teachers who selected “other” provided additional comments. Nine comments were related to a need for more behavior training instead of relating to the topic of communication. Perhaps these participants did not realize another question directly addressed behavioral training needs. Only one director provided the additional comment that all of the strategies were important. When analyzed by paraprofessional levels, there were no significant differences, $X^2(12, N = 686) = 19.02, p < .09$.

Top social skills strategy. When the frequencies of the social skills strategies were ranked, all stakeholders agreed social narratives were the top training need (see Table 23). Although administrators ranked video modeling (16.1%) second, teachers (17.5%) and paraprofessionals (26.6%) ranked peer tutoring second. Chi-square test of independence revealed significant differences between the strategy selections of teachers and paraprofessionals, $X^2(6, N = 1346) = 76.253, p < .00$. Paraprofessionals were more likely to select “peer tutoring” and “video modeling,” and less likely to select “social narratives” than other stakeholder groups. The inverse was true for teachers. Nineteen of the 34 paraprofessionals who selected other provided additional comments. However, there was no clear theme regarding social skills. Two reported

needing additional training in how to teach acceptable public behaviors. Three paraprofessionals reiterated the need for more training in behavior strategies.

Twenty teachers elaborated on their selection of “other.” Six teachers reported paraprofessionals needed more training in facilitating peer relationships and interactions with others. Four teachers commented that paraprofessionals need training in recognizing the importance of social skills training and how to identify natural opportunities throughout the day. The one director to select “other” identified a need to teach behavior strategies. Upon further analysis, there were no significant differences between the levels of paraprofessionals and their strategy selections, $X^2(9, N = 678) = 9.45, p < .39$.

Table 23

Top Social Skills Strategy Across Stakeholder Groups

Strategy	Para. ^a (n)	Para. (%)	Teachers (n)	Teachers (%)	Directors (n)	Directors (%)
Peer tutoring	213	26.6	118	17.5	8	14.3
Video modeling	170	21.2	70	10.4	9	16.1
Social narratives	290	36.2	378	56.0	32	57.1
Other	34	4.2	23	3.4	1	1.8
Total	707	88.2	589	87.3	50	89.3

Note. Para. = paraprofessionals.

Top behavior strategy. Stakeholders were also asked to select their top behavior strategy. There was not agreement amongst stakeholders as to the top strategy. As shown in Table 24, paraprofessionals (36.9%) selected “Functional Behavior Assessment” as their top strategy, but teachers (36.4%) and directors (51.8%) selected “Positive Reinforcement” as the top strategy. Chi-square test of independence revealed significant differences amongst all groups, $X^2(6, N =$

1353) = 69.68, $p < .00$. Paraprofessionals were much less likely to select “positive reinforcement” and much more likely to select “Functional Behavior Assessment” than other groups. The inverse was true for teachers and directors. No significant differences were found between paraprofessional levels regarding behavior strategies, $X^2(9, N = 682) = 10.76, p < .29$.

Table 24

Top Behavior Management Strategy Across Stakeholder Groups

Strategy	Para. (n)	Para. (%)	Teachers (n)	Teachers (%)	Directors (n)	Directors (%)
Positive reinforcement	172	21.4	246	36.4	29	51.8
Behavior as communication	225	28.1	175	25.9	16	28.6
FBA	296	36.9	163	24.1	5	8.9
Other	17	2.1	9	1.3	0	0
Total	710	88.5	593	87.7	50	89.3

Note. FBA = Functional behavior assessment; Para. = paraprofessionals.

The comments related to the selection of “other” were also analyzed. Thirteen of the 17 paraprofessionals to select “other” provided additional comments. Four indicated they felt competent in behavior strategies. Another four indicated they were not familiar with any of the strategies mentioned or were unsure of another strategy they needed training in. Seven teachers provided additional comments, three of which indicated paraprofessionals needed training in all of the behavior strategies.

Top instructional strategy. In the area of instruction, stakeholders agreed “structured work systems” was the top strategy in need of training (see Table 25). With additional analysis using the chi-square test of independence, significant differences were found amongst all stakeholder groups, $X^2(8, N = 1357) = 43.16, p < .00$. Paraprofessionals were less likely to select

“visual supports” and “prompting,” and more likely to select “structured work systems” than other stakeholder groups. Teachers selected “visual supports” higher than expected and “structured work systems” lower than expected. Directors chose “task analysis” lower than expected. A chi-square test of independence found no significant differences between the levels of paraprofessionals and their selection of instructional strategies, $X^2(12, N = 680) = 14.52, p < .27$.

Table 25

Top Instructional Strategy Across Stakeholder Groups

Strategy	Para. (n)	Para. (%)	Teachers (n)	Teachers (%)	Directors (n)	Directors (%)
Visual supports	74	9.2	101	15	7	12.5
Task analysis	168	20.9	147	21.8	4	7.1
Prompting	139	17.3	160	23.7	16	28.6
Structured work systems	302	37.7	179	26.5	20	35.7
Other	27	3.4	11	1.6	2	3.6
Total	710	88.5	598	88.6	49	87.5

Note. Para. = paraprofessionals.

Comments provided by those who selected “other” were further analyzed. Seventeen of the 27 paraprofessionals who selected “other” provided additional comments. Five identified having no need for additional training related to instruction, and three identified not being familiar with any of the strategies. Two indicated a need for additional training for how to work with other populations. This need was also echoed in comments in other sections of the survey. Teachers ($n = 3$) and directors ($n = 1$) emphasized a need for paraprofessional training related to Applied Behavior Analysis.

Table 26

Frequency of Comments Across Participants within each Sub-Category

Categories	Participant group				Total
	Para. (n)	Teachers (n)	Directors (n)	Interviewees (n)	
RQ1. Current training practices					
Paraprofessional relationships with other staff	46	16	2	48	112
Unclear roles and responsibilities	15	3	0	3	21
Trial and error learning	10	5	1	23	39
RQ2. Training barriers					
Paraprofessional disposition	8	9	1	16	34
No school time for training	7	35	2	10	54
No compensation/ incentives to attend training	18	18	2	17	55
Insufficient training	100	65	13	63	241
Budget Constraints	2	10	2	3	17
RQ3. Training needs					
A need for qualifications	3	9	2	36	50
Diversity of training needs	7	2	1	0	10
Training needs of others	28	18	1	2	49
Training in other disabilities	10	7	0	5	22
Suggested training content	27	39	4	28	98
Suggested training format	32	25	3	24	84

Note. Para. = paraprofessionals.

Counted Categories of Survey Comments and Interviews.

As noted by Miles and Huberman (1994), there are at least three reasons for counting categories: (a) to identify patterns more easily, (b) to verify a hypothesis, and (c) to maintain analytic integrity. Comment frequencies were counted to help transition between the quantitative

data and the qualitative data. An open-ended question at the end of the survey yielded comments from 244 paraprofessionals (35.31%), 193 teachers (33.05%), and 24 directors (48%). The number of comments coded for each sub-category was counted. One comment from a participant could contain multiple elements such as portion of the statements being highlighted as “trial and error learning” and another portion be highlighted as “insufficient training.” Table 26 presents the frequency of comments across participants within each sub-category.

Comment frequencies were totaled across participant groups and then rank ordered. Comments regarding “insufficient training” ($n = 241$) had the highest frequency. Sequentially followed by “paraprofessional relationships with others” ($n = 112$), “suggested training content” ($n = 98$), “suggested training format” ($n = 84$), and “no compensation/incentives to attend training” ($n = 55$) to round out the top five. An in-depth analysis of each identified theme and sub-category will be discussed in Chapter 5.

Summary

Chapter 4 provided the results of the quantitative survey distributed to three stakeholder groups: directors of special education, special education teachers, and special education paraprofessionals. Results were analyzed through the lens of the three research questions concerning the current training practices, barriers to training, and future training needs. The responses between stakeholder groups differed significantly in many areas. Discussion and conclusions regarding these results will be provided in Chapter 6.

Chapter 5

Qualitative Results

This chapter discusses the results of the qualitative data collected for this study.

Qualitative data were collected through the open-ended comments section of the survey and interviews. Eight paraprofessionals, two from each level, participated in interviews (Table 27).

Data were analyzed using systematic grounded theory.

Table 27

Levels of Paraprofessional Interviewees

Name ^a	Qualified level	Perception of Training	Perception of qualified
Kim	1	Trained	Qualified
Tina	1	Trained	Qualified
Diane	2	Not trained	Qualified
Lisa	2	Not trained	Qualified
Jackie	3	Trained	Not qualified
Courtney	3	Trained	Not qualified
Mary	4	Not trained	Not qualified
Betty	4	Not trained	Not qualified

^a Names have been changed to protect the identity and maintain confidentiality of all participants in the study

This chapter presents (1) categories identified under each research question, (2) themes regarding leveled paraprofessionals, and (3) a summary.

RQ1 What are the current professional development practices of paraprofessionals supporting students with ASD?

Paraprofessional relationships with other staff. Although the survey did not directly ask about perceptions of support or respect from other staff members, this theme was quite prevalent in comments from both paraprofessionals and teachers. With the high frequency of comments pertaining to staff relationships, comments were further divided into positive versus negative comments (Table 28). Positive comments were defined as those that depicted relationships through effective communication, teamwork, feedback, knowledgeable teachers, and appreciation from staff. Negative comments were defined as those that described relationships through poor communication, lack of appreciation or respect, negative school culture, and conflict.

Table 28

Frequency of Positive and Negative Relationship Comments by Participants

	Comments	
	Positive	Negative
Paraprofessionals (<i>n</i>)	14	32
Teachers (<i>n</i>)	6	10
Administrators (<i>n</i>)	2	0
Interviewees (<i>n</i>)	33	15
Total	55	57

It is important to note that the majority (70%) of paraprofessional comments were negative in nature. The number of positive comments from interviewees was much higher than other groups. Upon further investigation the majority of these positive comments came from the two Level 1 paraprofessionals.

Overall, positive comments focused on the support and training provided by the supervising teacher. Positive paraprofessionals described their teachers as sharing strategies and having open communication. Positive comments often included teachers using appropriate supervisory practices such as holding staff meetings, modeling practices, and providing a variety of communication methods. For example, “My current ASD teachers are extremely helpful and supportive and conduct weekly meetings to discuss whatever we would like in regard to the students we work with.” Kim described her teacher as providing key special education documents for instruction and assessment:

She’s really good about making sure I have a copy of the IEPs. We have some quick cards that we both refer to what things we have to have for VAAP, what other goal sets were outlined in the IEPs that we have to read to some point for students

Other paraprofessionals, such as Betty, mentioned they were often asked to support students without access to IEPs, functional behavior assessments, or student accommodations and modifications. Nine teachers and two directors spoke of their positive relationships with paraprofessionals and how important they were to the success of classrooms.

Unfortunately, not all relationships between paraprofessionals and other staff can be characterized as positive. Fifteen paraprofessionals revealed that communication and supervision between them and their teacher was minimal or non-existent. Diane described communication in her school as, “No, no plans were required or regular meetings or anything like that. You can go

the whole year and not really see your special ed[ucation] teacher unless you had a problem and wanted to.” Other paraprofessionals reflected that they had to actively seek information from teachers, as it was not readily provided, “I feel that if I had not had that expressed interest I may not be able to understand how to do my job.” A lack of established communication systems and common planning time further hindered this lack of communication.

Paraprofessionals not only focused on negative relationships with their direct supervisor, but also a negative school culture in regards to paraprofessionals. Twenty paraprofessionals described their school culture as negative with comments such as, “No investment is made in paraprofessionals because we are seen as a dime a dozen,” and

Many paraprofessionals that I have worked with, myself included do not feel as though they are part of the faculty community. Administration and teachers often make comments like 'Oh they are just an aide...' We are often ignored by administration and Special Ed Liaisons.

Ten teachers reflected that they personally appreciated the work and effort of their paraprofessionals, but recognized that these views were not pervasive in their schools. Other paraprofessionals believed they were not respected because other staff didn't fully understand their responsibilities. One paraprofessional summarized the impact of negative school culture on their training opportunities, “Until attitudes change about us being glorified copy girls, the training that we need will not become available.”

Unclear roles and responsibilities. Paraprofessionals repeatedly mentioned having the same responsibilities as teachers. Teachers only made the slight distinction that they wrote IEPs and attended meetings. Only four out of fifteen paraprofessionals appeared to recognize that their level of responsibility exceeded those defined by the law, “More often than not, we are

responsible for implementing a majority of a students' educational programming, and are typically not qualified or trained to bear that responsibility." Most paraprofessionals only recognized their level of responsibility as being inappropriate within the context of their low pay.

The lack of clearly defined roles and responsibilities can impact classroom cohesion and instruction. Two interviewees presented experiences regarding unclear roles within the classroom. Courtney, described a strained relationship with a teacher from the previous school year:

Explanation of the roles would be nice. Yeah, knowing what your boundaries are. You do keep up with the work, but if the teacher doesn't explain that to you, you kind of don't know where you're supposed to be. It's just assumed you know what you're doing. That's what happened the next year, where she just assumed I knew what she wanted and I didn't because she didn't have any communication with me.

Betty also recalled a situation where the direction and supervision of the classroom teacher was practically non-existent:

Researcher: Do you have time during the day to plan with your teachers?

Betty: No. No, and our special ed. teacher kind of... sometimes it's like we're not even in the class. We have to go around and kind of figure out ... We kind of watch the first few minutes that we're in there, in class, to see how they're grouping them, and then we choose a table and sit down and start helping.

Researcher: So she doesn't really, he or she...

Betty: Yeah, they don't communicate a lot with us. That would help if we knew. In our particular situation, we've talked to the head of Special Ed, ... but ...

Researcher: Does she provide you, say, if you started working with students at a table, does she provide you feedback about how she wants you to provide instruction?

Betty: No.

Researcher: How do you know if you're doing your job correctly or not?

Betty: We don't.

Unclear roles and responsibilities were often spoken of in tandem with a lack of communication with their supervising teacher. Emotions of frustration were evident as interviewees spoke of their unclear roles.

Trial and Error Learning. Sixteen paraprofessionals reported learning to complete their duties through experiences other than training. A few paraprofessionals indicated they sought informational resources, most of which were located through the Internet. Several paraprofessionals recounted using previous experiences, most notably parenting, to guide their work. Jackie reported drawing from her parenting skills to support students in the classroom:

It was trial and error, more or less and you should do this and you shouldn't do that but no real training per se. I guess I just used my instincts because I have two sons and I tried to do what I would do as a mom but then put forth the knowledge that I knew as far as my education and helping my boys and trying to help them with their education.

Some paraprofessionals reported learning to complete their duties through on-the-job training by their supervising teacher, yet several others referenced learning through trial and error:

There was one aide that was finishing up his degree to become a special education teacher. He was the one that probably knew more than the rest of us. We were just going on asking him questions of things that he had taken classes on and trial and error.

Trial and error was conceptualized as a process alone and a process together. As a process alone, paraprofessionals spoke of trial and error as something they resorted to due to a lack of supervision and communication from supervising teachers. This form of learning was often in context to being newly hired or inexperienced. As a process together, paraprofessionals revealed that trial and error was used as a teaching practice within the classroom in collaboration with the supervising teacher. Kim shared, “Whoever can come up with a way to do it that works, it definitely worth trying anything with any of the kids.” This conceptualization revealed that teachers might also be in need of training regarding strategies for students with ASD.

Many times trial and error was used in reference to behavioral or instructional strategies. Paraprofessionals described learning routine behaviors with ease, such as navigating the school or memorizing their schedule, but struggled to appropriately handle student behavior, work with non-verbal learners, or provide instruction in content areas such as reading or math. For example, one paraprofessional reported, “When this student came to us, no one seemed to know what to do with him. Lots of trial and error.” And another recalled working on communication skills with students, “It’s kind of a trial and error method, and we just see what works.” Paraprofessionals appeared to rely on trial and error methods in the areas students were in the most need of support.

RQ2 What are the barriers to professional development for paraprofessionals supporting students with ASD?

Paraprofessional disposition. Teacher comments regarding the dispositions of paraprofessionals surfaced in discussions of other sub-categories including attending training outside of school hours, lack of qualifications for hire, and paraprofessional relationships with other staff. Teachers and paraprofessionals alike noted that some paraprofessionals lacked the

professional disposition necessary to effectively support students with special needs. Some teachers reported, “In fact, some of them don’t even like children, especially children with disabilities. They lack the commitment and passion needed to help children succeed,” and

People cannot just be drafted into working with students with needs, particularly students with the challenges of ASD. People who do not understand or want to work with students with these challenges should not be used as regular support personnel.

To further clarify this emerging theme, interviewees were asked to identify character qualities they felt were essential to effectively supporting students with ASD. Interviewees unanimously agreed that staff needed to be patient and flexible when working with this unique population. Many elaborated by recalling experiences where they displayed these qualities when working with their students

Researcher: If I were an administrator, what kind of questions would I ask or how would I determine if somebody had a true love for children?

Courtney: Ask about experiences. There’s got to be ... People go into education for various reasons, but there’s always one experience that touched you enough to go into education.

Courtney then went on to recall her first experience with a young girl with Down syndrome at a summer camp.

Another attitudinal issue noted by teachers and paraprofessionals was the unwillingness to try new approaches or implement strategies after training:

Experienced paraprofessionals often find it difficult to adjust to new practices and research methods and even when these are explained / taught they can quickly go back to

old knowledge; most significant issue in my classroom is paraprofessionals reinforcing negative behavior instead of positive. They thinking a quiet student is a happy student. Eight other teachers also commented that sometimes the paraprofessional's disposition or preconceived beliefs interfered with classroom teaching and the efficiency of the classroom.

No school time for training. Paraprofessionals identified not having time during the school day as impacting their supervision and training in two ways: a lack of time to meet and communicate with their teachers, and a lack of substitutes or allowance to attend trainings during contract hours. Paraprofessionals reported "being busy" all day long and having "the same responsibilities, if not more, than teachers" as they supported students with toileting, lunch, and bus duties. Paraprofessionals who supported students in the general education environment shared that it was even more difficult to find time to communicate and plan with their teachers. These paraprofessionals often worked with multiple teachers throughout the day and might not see their assigned special education teacher on a daily basis. Paraprofessionals located in self-contained settings mentioned that their teachers were not allotted planning times, or if they were, it was when the paraprofessionals were supervising children in specials or electives.

Teacher comments echoed the same sentiments and felt they didn't have enough time during the school day to adequately train paraprofessionals. In fact, teachers ($n = 35$) mentioned no school time as being a barrier higher than all other stakeholder groups. One teacher so aptly noted,

I think the biggest problem in training paraprofessionals is that they work from 9:00 to 3:30 (even though our school day ends at 3:40). They also are not paid to come in during teacher workweek. They start the same day the students do. There is not time to review IEPs and supports before the year starts. They are not paid to come in early or stay late.

There have been a few paraprofessionals but not many in _____ County. It's hard to have them get trained during the school day because we need them to support the many needs of the students.

All stakeholders appeared to conceptualize training and supervision as something that happened without students present. Tina, an interviewee, observed, "The teachers are there to do the best they can do but you can't stop teaching your classroom to teach an aide and that's an issue at times." The language teachers used in their comments reflected that they felt responsible for training and supervising paraprofessionals, but they were working against a variety of systemic barriers they were unsure how to overcome.

Stakeholders also identified a lack of opportunities for paraprofessionals to attend trainings during their contractual time. This is a result of a variety of factors including the lack of planned trainings during the school day and release for paraprofessionals to attend said trainings. Eight paraprofessionals explained that teachers were given release to attend trainings during the day but they had been denied equal access to these opportunities. Paraprofessionals also reported difficulties finding substitutes as a barrier. One interviewee indicated her school division paid substitutes less per day in a paraprofessional position than a teacher position, so her role was often left unfilled if she had to be absent. A variety of contextual factors during the school day limited the formal and informal training opportunities for paraprofessionals.

No compensation or incentives to attend training. Several paraprofessionals, including six out of eight interviewees, remarked that they had voluntarily attended training outside of the school day. Others reported being forced to attend trainings outside of the school day, including on weekends. And finally, a small portion of paraprofessionals reported signing up for training outside of school hours only to be denied access because they would have worked more than

their contract allowed. These examples showed that the amount of training and appropriate compensation appeared to vary across school divisions.

Paraprofessionals also encountered barriers to attending trainings outside of the school day, such as many paraprofessionals were only present when students were present, had limited time in the evenings due to family obligations, or didn't have the resources or means to access trainings such as a lack of computer skills or Internet access. Even though Tina felt like she received adequate training from her division, she still felt it was difficult to attend trainings outside of regular school days:

I personally would try to but I know a lot of people who can't because their family situations with children of their own. It's really hard; on an aides pay which is 1/3 of a teacher makes, to hire a sitter to take over your children when you need to go to something to do with work.

Paraprofessionals felt they should be given the same opportunities for professional development as teachers including substitutes, if training is during the school day, or compensation (either in pay or hours) if outside of the school day. Administrators remarked that contractual limitations restrained their ability to provide compensation for additional hours outside of the school day. Paraprofessionals also mentioned that the divisions did not place an importance on continued training or growth. Eight paraprofessionals felt the divisions should support their efforts to continue their education and training. Some mentioned potential solutions to incentivize paraprofessionals to further their education, including an increase in pay for finishing a degree and assistance to pay for college courses.

Quite a few paraprofessionals remarked being required to attend training outside of the school day with no compensation (eighteen comments and all eight interviewees). This touched a

nerve in paraprofessionals on multiple levels, “Many paraprofessionals feel we are definitely not paid enough to warrant the extra hours they would want us to do for training.” The undertones of this statement reflected the paraprofessionals’ perceptions that due to their poor pay, paraprofessional qualifications should be minimized unless school divisions take on the burden of finding time for training.

Insufficient training. Current trainings were described as limited, repetitive, or non-existent. Seven paraprofessionals, as well as seven interviewees, reported receiving basic personnel orientation, but no special education training prior to working with students. The one exception was Mary who worked at a private day school. She revealed receiving training and observing other staff members for two weeks prior to being assigned her student.

Stakeholders recounted discontinuous, unorganized training opportunities that included conferences, trainings through outside organizations, and internal trainings such as crisis management classes. Directors of special education reported providing internal training from division autism specialists or Board Certified Behavior Analysts. One director of special education also mentioned that all paraprofessionals within her school division had already passed the online paraprofessional course with at least 80% accuracy. Seventeen paraprofessionals and five interviewees revealed taking the course. Four interviewees and eleven of the paraprofessionals who had participated in the course found it very insightful, including Jackie:

The most training that I received is when I took your online course back in October. I learned more from that 30 days taking the course than I ever gained in the five years that I’ve been in special ed[ucation].

Many who had taken the course felt it would have been helpful to take the course when initially hired. Even those who hadn’t taken the course, felt initial training upon hire would be beneficial

to all paraprofessionals. More experienced paraprofessionals desired trainings that advanced past the basic ASD overview. Despite having some training available, the training opportunities were not organized into a meaningful training schedule or structure.

Budget constraints. Seventeen comments regarding current budgetary limitations were recorded. For example, one paraprofessional noted

Professional development is truly lacking for paraprofessionals at _____. It doesn't seem to be of much importance perhaps in light of current economic affairs, but it's unfortunate that paraprofessionals can't be the best they could be to assist teachers and kids in the classroom.

Other participants mentioned a variety of trainings paraprofessionals were provided in the past that have since not been renewed due to budget constraints. Teachers also noted that professional development for all staff had been limited as a result of cuts. When asked potential solutions to provide paraprofessionals more training, most participants suggested answers that required additional funding for substitutes, incentives, compensation, etc. Budgetary factors appeared to have an overarching effect on all other barriers to receiving training.

RQ3 What are the professional development needs for paraprofessionals supporting students with ASD?

Lack of qualifications for hire. As previously indicated, paraprofessionals are only required to possess a high school degree or equivalent to be employed as a paraprofessional in Virginia. Paraprofessionals located in Title 1 schools must have at least two years of college experience or have passed a paraprofessional competency test. Teachers ($n = 9$) were the most outspoken regarding the insufficiency of these qualifications, "A huge part of the problem within our system stems from initial selection of quality individuals." All stakeholders agreed that

during the hiring process the roles and responsibilities of the position were not accurately described. It was common for paraprofessionals to not receive their job duties until the first day on the job. According to a teacher,

I have a new paraprofessional hired in the last month and she has no training in special education and did not know what her job was going to entail until her first day on the job.

Teachers are not a part of the hiring process, so they cannot communicate to applicants what the job involves and administrators do not know.

Half of the interviewees commented that they had served as substitutes in special education prior to hire and without that experience they would have felt much less prepared to complete their duties. Tina illuminated in her interview one consequence of new hires not fully understanding the responsibilities of the position:

The trouble that I've seen is that we've had a lot turn over with paraprofessionals because they come in to a classroom and they're expecting regular students. They're not expecting children that go from extremely intelligent that can talk to you and respond to you, to children who are completely not verbal. The spectrum is so broad. They don't do well and they just don't do well.

However this is not the case in all schools. Kim revealed that in some cases an inappropriate placement didn't result in the paraprofessional in leaving the division, but rather being shifted around the school division to other schools.

All interviewees indicated their administration conducted an evaluation of their performance annually. Nonetheless, they were unsure of what they were being evaluated on or what information the administrator was basing his or her judgments. They reported administrators would periodically come and observe the classroom, but they were never provided

feedback regarding the observation. Courtney went a step further to say she felt she would benefit from a professional development plan with specific goals and, “Every nine weeks just check on me. That’s all. I want you to check in on me to make sure I’m still alive and kicking. You kick the tires, check under the hood, ...”

All stakeholders felt there were viable solutions to alleviating this lack of transparency at hire. Some teachers mentioned simple solutions, such as teachers being involved in the hiring process. Others advocated for required training prior to hire or higher education levels. Teachers particularly advocated for prior training or a college experience for paraprofessionals. Six teachers felt the lack of qualifications attracted paraprofessionals with low proficiencies in reading and writing skills.

Others felt the lack of qualifications and pay equates the position to other minimum wage jobs that don’t require the technical skills necessary for supporting students with special needs. Although no questions queried paraprofessionals regarding their salary, paraprofessionals reported in large numbers needing more pay ($n = 44$). Nineteen paraprofessionals and 18 teachers furthered this line of thinking and linked their grievance to their level of responsibility, “Their current salaries are not reflective of the knowledge and skill set that they must possess to be effective in their jobs.” This identified a circular process where the position has required few qualifications because the pay was minimal, and yet the pay was maintained at that level because the qualifications were few.

Participants posited that if qualifications were raised, the quality of the applicant pool would also be raised. To further investigate this concept, interviewees were asked additional questions regarding other potential solutions to the lack of paraprofessional qualifications, including the development of a paraprofessional certification or license. Five interviewees agreed

that the development of a paraprofessional licensure would be a positive. Mary rationally compared paraprofessional requirement to those commonly used in other fields, “Yes and that's because I worked as a nursing assistant and they require you to have a license like they do an RN or an LPN. I would say, yes.” However, three interviewees felt a license would not be attainable for some of the more veteran staff, or if a license were put in place then pay should be commensurate with the extra requirements. These three interviewees were spread out across the levels (Level 2, 3, and 4).

Diversity of training needs. All stakeholders agreed with adult learning principles that training needed to be individualized to meet the needs of the learner. Stakeholders presented three different factors to take into consideration when developing training: (a) paraprofessionals' level of experience, (b) population of students they work with, and (c) the setting in which they work. A director of special education summed up the diversity of training needs by saying,

The professional development needs of paraprofessionals vary. Some paraprofessionals have a wealth of experience and knowledge while others are novice and need a lot of assistance. It is important that school systems know their personnel well and can help pair people with professional development opportunities that will be meaningful for them.

Paraprofessionals and teachers also advocated for training to be differentiated to the needs of the students. For example, a paraprofessional supporting a highly verbal student with ASD in a general education class would be more likely to receive communication skills training on pragmatics and promoting social opportunities rather than training in speech generating devices. This idea of individualized training related to the specific students whom the paraprofessional supports was also echoed in suggested training content.

Training Needs of Others. All stakeholders clearly agreed that paraprofessionals were not the only personnel in need of training. Ten participants felt all school staff, including bus drivers and office staff, should receive training regarding working with students with ASD. “There has been no training for teachers as how to work with students let alone for my paraprofessional” clearly summarized the call for more training for teachers regarding how to support students with ASD. Although the frequency of teacher comments containing references to EBPs was higher than paraprofessionals, many teachers and paraprofessionals admitted to using trial and error teaching within the classroom.

Teachers not only lacked training in ASD practices, but also how to fulfill their role as a supervisor. The literature and the state paraprofessional mandate (Massie Bill, 2012) have viewed teachers as the key personnel charged with supervising paraprofessionals. Although eighteen teachers alluded to the training of paraprofessionals as their responsibility, others clearly denied this role, “As I prefer to treat any paraprofessional I work with as colleagues- I am NOT their boss- I try best to teach and train them by example.” Teachers and administrators did not mention this need for training in supervisory practices in their comments, but four paraprofessionals felt this was an important training need. One paraprofessional aptly recognized

I feel teachers are often not appropriately trained to effectively utilize what we can provide in the classroom; this goes back to a bigger problem of schools with inclusive classrooms and no idea how to effectively run them or get all the necessary players on board.

Training in other disabilities. Paraprofessionals responded favorably to training regarding students with ASD, but many requested that additional training also be provided regarding the other students they worked with. Ten paraprofessionals and five interviewees were

heavily focused on wanting to understand the various disabilities, diagnoses, and presentation instead of support, behavioral, or instructional strategies. Paraprofessionals mentioned they frequently worked with a variety of students and if they all had training in all disabilities, they could better support and collaborate with other paraprofessionals.

Teachers also recognized a need for training in other disabilities although from a slightly different perspective. Teachers felt all paraprofessionals, not just those supporting students with ASD, needed training. Seven teachers indicated their classrooms supported a wide-variety of students and even though autism is the “trending disability” they felt all paraprofessionals needed additional training:

This training is pertinent to ALL instructional assistants not only to those serving in ASD programs. My program serves students on the severe end of the intellectual spectrum with varying labels, and have assistants who would also greatly benefit from these trainings about instructional strategies, communication and behavior. Please don't exclude other disability programs, other than Autism programs, and those assistants who are employed to work with these students. They need these trainings too!!!

Teachers recognized that many of the concepts presented in the ASD paraprofessional training could be applied to a variety of students, not just those with ASD.

Suggested training content. All stakeholders provided suggestions for additional training needs. Many reiterated content or concepts that appeared in the survey. Most notably, there was a high frequency ($n = 23$) of requests for additional training in how to appropriately respond to behavior particularly aggression and meltdowns. There were also four paraprofessionals who specifically requested communication training. Paraprofessionals did not mention any specific strategies by name, but rather overarching concepts. Teachers were much

more specific in their suggested training content. Teachers identified several strategies including prompting, discrete trial training, applied behavior analysis, and positive behavior interventions and supports. Teachers were also the only group to mention the need for paraprofessionals to be trained in facilitating social skill development.

Teachers not only requested that paraprofessionals be trained in specific strategies and understand how to implement them in the classroom, but also to understand the theoretical basis for why particular strategies were being implemented:

This is not because the paraprofessionals don't know how to work with the students--they don't know why teachers employ certain techniques. Therefore, trainings that help paraprofessionals understand techniques and help them be on the same page as the teacher would be helpful.

Other staff also commented that paraprofessionals frequently failed to implement a practice to fidelity due to a lack of background knowledge for why particular steps or behaviors in the practices were important. Not only did paraprofessionals need training in a variety of strategies and understand why they are using them, but they also needed training opportunities that would allow them to generalize learned skills to other situations and other students.

Suggested training format. All stakeholders provided suggestions for improving the current training environment for paraprofessionals. Many of these solutions were already illuminated in previous sections. Paraprofessionals desired trainings that were hands-on and preferably provided on-the-job. Teachers also suggested using videos of students with varying abilities during training. Paraprofessionals desired to attend trainings with other paraprofessionals and to have time to network with staff from other schools within their

divisions. Paraprofessionals and teachers both advocated for trainings where team members could attend together.

The remainder of training format suggestions centered on when training should be delivered. Stakeholders again reiterated the need for training to be delivered prior to working with students. One teacher even went so far as to suggest, “ I do, however, believe that certain trainings should be made mandatory in order to ensure that all paraprofessionals are receiving the necessary information to better assist students with disabilities.” Again, stakeholders emphasized the need for more time to plan with their team members. Both teachers and paraprofessionals suggested using teacher workdays and built in professional development days to provide training to paraprofessionals. Furthermore, stakeholders indicated a need for increasing the quantity of training available to them within their school divisions.

Leveled Paraprofessional Themes

After categories were determined across all stakeholder groups, interview data were again revisited to look for similarities and differences between the paraprofessional levels. For descriptions of levels refer to Table 9 on page 88. Paraprofessionals had similar responses across the categories with the exception of two: paraprofessional disposition and their relationship with their supervising teacher.

Paraprofessionals differed by level with regards to their own personal disposition. Level 1 and 2 paraprofessionals spoke of their own work ethic and willingness to go above and beyond their job requirements. Many spoke of voluntarily seeking training or information. For example, Diane, a Level 2 paraprofessional, spoke of her decision to voluntarily participate in the online paraprofessional course

Last year we got an email from the principal saying this was offered, and put it out there for us to take if we wanted to take it. It wasn't required at the time, and because that's what I work in, I wanted to get more information and more education in case I hadn't gotten it all in the other things I had taken, so I did that. I think I was the only one that did it, though.

Level 3 and 4 paraprofessionals were more likely to only attend training designated by their division or school and not seek out additional supports unless they felt it was absolutely necessary. Mary spoke of other staff within her school building who she identified as being in the same position as her (Level 4), "They may not mind the staff development, something that's right there at work, but something that may require after hours, no, not too many, I don't think are interested in it." Paraprofessional disposition appeared to be a sliding scale that decreased as you went farther down the levels.

The role of the supervising teacher was an important theme in the interviews with the leveled paraprofessionals. Those paraprofessionals that reported feeling the most qualified and trained, also reported positive mentor relationships with their supervising teachers. Kim, a Level 1 paraprofessional, identified a strong positive relationship with her classroom teacher:

I think I knew what most of them [EBPs] were. I'm lucky that the teacher I worked with ... I've been friends with her for years and I'm quick to say, "Show me how to do that. What would you do with this?" She's been very instrumental in sharing her knowledge with me. I don't think everybody gets that kind of benefit.

The level of closeness and trust with the supervising teacher had a strong relationship with the paraprofessionals' feelings of competency. Despite receiving trainings through her school, Mary still identified herself as a Level 4 paraprofessional. Her comments throughout the interview

suggested she lacked relationships with her supervisory staff, which consisted of a variety of teachers and a behavior specialist. For example,

Mary: If I have any questions about, like I did last year, because I first started, the behavior specialist... I would just always go talk to her, or him.

Researcher: Yes. You can just freely ask questions as needed. Nobody comes and says "Hey, Mary, how's it going? Do you need help with anything?"

Mary: Right. Right.

Researcher: How do you know if you're doing your job correctly or not?

Mary: Well, I guess if I make a mistake, either the classroom teacher or one of the classroom teachers or the supervisor ...

This infers that the only time supervisory staff communicated with Mary was to provide negative feedback and little time was taken to build a relationship with Mary. As mentioned in the previous section titled *Paraprofessional relationships with other staff* (page 113), Level 1 and 2 paraprofessionals were recorded with a high frequency (19 out of 32) of positive relationship comments. Level 1 and 2 paraprofessionals also reported fewer negative statements ($n = 4$) and compared to Level 3 and 4 paraprofessionals ($n = 14$). These results further point to the importance of effective teacher supervision leads paraprofessionals to feel more qualified to complete their duties and less likely to resort to using trial and error practices.

Summary

This chapter provided the analysis and results of the qualitative data collected from the open comments of the survey and eight purposefully selected interviews. Fifteen categories emerged out of the three research themes: (a) current training practices, (b) training barriers, and (c) training needs. The qualitative data echoed and elaborated on the quantitative data gathered

from the survey. New themes emerged through the qualitative data such as budget constraints, the training needs of others, and relationships amongst staff. Discussion and conclusions regarding these results will be provided in Chapter 6.

Chapter 6

Discussion and Conclusions

This study examined professional development for paraprofessionals supporting students with ASD in Virginia through an explanatory, sequential mixed methods design. The first phase consisted of the distribution of a survey about paraprofessional professional development to key stakeholder groups: paraprofessionals supporting students with ASD, teachers of students with ASD, and directors of special education. The second phase was used to confirm and expand the quantitative results through qualitative interviews with paraprofessionals. By 2014, all paraprofessionals under the supervision of teachers supporting students with ASD in Virginia will need to be trained according to new state law (Massie Bill, HB 325, 2012). This study provides vital information to assist in the implementation of this new law. This study sought to answer three questions:

1. What are the current professional development practices of paraprofessionals supporting students with ASD? (RQ1)
2. What are the barriers to professional development for paraprofessionals supporting students with ASD? (RQ2)
3. What are the professional development needs for paraprofessionals supporting students with ASD? (RQ3)

Chapter 1 of this dissertation provides an overview of the rationale for pursuing research related to the professional development needs of paraprofessionals supporting students with ASD. Chapter 2 builds on this rationale by presenting a review of the literature regarding the history of paraprofessionals in schools, the history of ASD, and a conceptual framework for professional development. Chapter 3 details the design of the study, including a justification for the selection of an explanatory, sequential mixed methods design and how the research was conducted. Chapter 4 summarizes the results from the quantitative data collected through a survey distributed to special education paraprofessionals, teachers, and directors. Chapter 5 presents the results from the qualitative phase included emerging categories uncovered through grounded theory methods. This final chapter integrates the results from phase one and phase two to answer the research questions guiding this study. The grounded theory paradigm is presented through the findings and discussion. This chapter includes (1) findings and discussion as outlined by each research question, (2) summary of findings, (3) presentation of explanatory theory of training experiences of paraprofessionals supporting students with ASD, (4) relevance of the study, (5) limitations, (6) recommendations for future research, (7) recommendations for practice, and (8) final conclusions.

RQ1. What are the current professional development practices of paraprofessionals supporting students with ASD?

Themes emerged throughout the research process and were revised to create an explanatory model of the paraprofessional training phenomenon. As a result, categories of questions from the survey in regards to research question #1 do not match the categories that emerged from the qualitative data. Despite the linguistic differences, several important findings were found in light of current training practices.

Qualified to complete job. A central question on the survey asked participants to self-select the level at which they felt trained and qualified (e.g., Level 1: trained and qualified, Level 2: not trained yet qualified, Level 3: trained yet not qualified, and Level 4: not trained and not qualified). Paraprofessional level selections were validated through their responses to other questions within the survey. For example, both Level 2 and 4 paraprofessionals (i.e., those with no training) indicated in the barriers section that there were no regularly scheduled trainings within their division. Both paraprofessionals (45.9%) and directors (45.8%) selected Level 1 most frequently. Teachers' selections were much more evenly distributed across the levels while selecting Level 2 most frequently (26.1%). One possible reason for these differences between teachers and the other stakeholders may be that teachers don't perceive themselves in the role of supervisors or trainees. Teachers may feel that if paraprofessionals aren't attending formal training opportunities then they aren't receiving training. It may also be that teachers are reflecting that they don't have time to train the paraprofessionals under their supervision. There were no differences between the paraprofessional levels and demographics except for grade level. Paraprofessionals supporting students with ASD at the elementary level were more likely to select Level 4 than other grade levels. Interestingly, the majority of paraprofessionals were assigned to elementary schools (40.9%).

Despite almost half of the paraprofessionals supporting students with ASD selecting Level 1 (trained and qualified), their qualitative comments painted a different picture. Comments and interviews suggested that paraprofessionals in Virginia were provided few opportunities for training and that they often felt unprepared to complete their duties, especially at hire. Paraprofessionals felt school divisions and administration still held misconceptions about their job responsibilities as consisting mainly of copying or paperwork duties. Paraprofessionals felt

these misconceptions led to lowered expectations for paraprofessional staff. The findings suggest this mismatch between administration expectations and the actual responsibilities of the position plays a role in the quantity and quality of training opportunities provided. One possible explanation is that if administrators perceive that paraprofessionals do not need to be qualified or maintain comprehensive qualifications, they will be less likely to invest limited resources into training these staff members.

Effective teacher supervision is a key factor in paraprofessional training.

Paraprofessionals supporting students with ASD most frequently learned how to complete their duties by observing other staff, primarily their supervising teacher. This finding is in agreement with previous paraprofessional literature (Downing et al., 2000). This demonstrates the important role the supervising teacher plays in paraprofessional training. These findings echo the existing literature that training is lacking for special education teachers regarding how to supervise paraprofessionals (Carter et al., 2009; French, 2001; Griffin-Shirley & Matlock, 2004). The majority of teachers in Virginia (85.3 %) learned how to supervise paraprofessionals through real-life experience. Few teachers had received training in other environments.

On average, a special education teacher supervised two paraprofessionals. Teachers reported various frequencies regarding how often they supervised their paraprofessionals. 41% of teachers reported providing support and training to their paraprofessionals less than weekly. At best, less-than-weekly supervision infers indirect supervision. The number of paraprofessionals that teachers supported was compared to the frequency in which they provided support. This calculation revealed that 11% of teachers reported not providing any support or training to their paraprofessionals despite having them under their supervision. These results are quite alarming to think that out of 200 paraprofessionals (two paraprofessionals supervised under each 100

teachers), 20 of them are not being supervised in their work with students. These findings bring into question the quality of services for students with ASD if the paraprofessionals providing them support are not adequately supervised. These findings also suggest that Virginia is not in compliance with NCLB that requires paraprofessionals to work under the direct supervision of a teacher or licensed professional (NCLB, 2001).

This lack of acceptance by teachers in their role as supervisor also had an impact on the clarity of roles and responsibilities for paraprofessionals supporting students with ASD. Several paraprofessionals reported unclear roles and responsibilities and felt their responsibilities were similar to that of a classroom teacher. Neither teachers nor paraprofessionals characterized the classroom teacher as their supervisor. This is in agreement with the existing literature regarding roles and responsibilities (Cremin, Thomas, & Vincett, 2003; Giangreco et al., 2001; Lacey, 2001; Wallace et al., 2001).

One possible explanation for this lack of effective teacher supervision is a lack of teacher training. Qualitative data yielded a theme of other staff needing training, with the supervisor teacher being the most in need. Paraprofessionals supporting students with ASD noted that teachers needed specific training in how to effectively supervise other adults. Teachers in Virginia also identified needing training in strategies to support students with ASD. This finding is also consistent with the literature (Dymond et al., 2007; Lablanc, Richardson, & Burns, 2009; Stahmer, Collings, & Palinkas, 2005). If teachers of students with ASD lack the necessary knowledge and skills to implement EBPs, they will not be able to model these for the paraprofessionals under their supervision.

The literature demonstrates that the support and disposition of a supervisor can have a significant impact on overall job satisfaction and work environment (Ellinger, 2004). Comments

regarding teacher supervision and relationships were the second highest frequency of all themes indicating this was also true for paraprofessionals supporting students with ASD in Virginia. Comments most often described the relationship between the paraprofessional and the supervising teacher. 70% of these comments were negative. Negative comments encompassed feelings of frustration regarding the lack of communication and direction from their supervising teacher. These results are consistent with current literature (Devlin, 2008; Hammeken, 2009; Harkness, 2002; Tobin, 2006).

Interviews of leveled paraprofessionals revealed a connection between the paraprofessionals' feelings of competency and their perceptions of their supervising teacher and their level of support. Level 1 and 2 paraprofessionals spoke much more highly of their supervising teacher and provided more specific examples of how their teacher supervised and communicated with them. Evidence of positive relationships with supervising teachers degraded as the paraprofessional's feelings of competency (i.e., self-selected level) decreased. Thus, paraprofessionals supporting students with ASD who lacked effective teacher supervision were more likely to feel unqualified to complete their duties. These findings mirror those of previous research conducted by Young (2006).

Previous training experience reveals insufficient training structures. When asked to identify how paraprofessionals supporting students with ASD in Virginia learned how to do their job, all stakeholders selected "observing their teacher or other staff members" with the highest frequency. This finding further iterates the importance of an effective supervising teacher. Teachers serve as the model for implementing EBPs. "Observing other effective team members" was also highly selected in desired training strategies. Qualitative data confirmed that

paraprofessionals supporting students with ASD primarily learned through observation and on-the-job training.

When other formats of training were explored, such as attending workshops, organized training, or conferences, paraprofessionals and teachers supporting students with ASD reported formal training efforts were either limited or non-existent within their divisions. When training did occur, it was often a general overview of ASD without specific strategies. This result confirmed a unique quantitative finding that Level 3 paraprofessionals (trained and yet not qualified) selected workshop most frequently as their form of previous training. When evaluated in light of the qualitative data, it confirms that even though these paraprofessionals (Level 3) were provided training they did not feel the training was helpful. These outcomes suggest previous training efforts in Virginia insufficient and were not based on adult learning principles and did not take into account the learner's needs and previous knowledge.

Furthermore, paraprofessionals and teachers supporting students with ASD indicated that school divisions did not have organized continuously occurring professional development. Pickett et al. (2003) also asserted that intentional professional development for paraprofessionals was lacking in school divisions. Comprehensive training was amongst the previous training formats selected the least frequently. Even though the Virginia Autism Council (2010) has created and distributed the *Skill Competencies for Professionals and Paraprofessionals in Virginia Supporting Individuals with Autism across the Lifespan*, neither teachers of students with ASD nor directors of special education mentioned using this tool to strategically plan and implement training for paraprofessionals.

So far, informal on-the-job training and formal training options have been explored. Paraprofessionals entering the field with previous experience or initial job training were also

investigated. Level 1 paraprofessionals were more likely have initial job training as compared to other leveled paraprofessionals. Level 4 paraprofessionals were less likely to have previous job experience. Qualitative comments frequently identified paraprofessionals supporting students with ASD as not having experience prior to entering the classroom and lacking initial job training. This finding is consistent with another study (Katsiyannis et al., 2000).

Insufficient training and supervision results in trial and error learning. Historically, the literature has described paraprofessionals as learning how to complete their responsibilities through “on-the-job training” (Downing et al., 2000). This typically insinuates some sort of training process such as an apprenticeship, mentoring, or training program. Downing et al. (2000) reported paraprofessionals learned by reading, observing others, and their own personal experiences. Observing others is consistent with the findings within this study. Packaged self-study materials were not highly ranked as a form of previous training. Through the qualitative data paraprofessionals supporting students with ASD in Virginia mentioned learning how to complete their duties through personal experiences they characterized as “trial and error.” French (2001) and Riggs (2001) also found that paraprofessionals often relied on trial and error to support students. On the survey, 206 paraprofessionals supporting students with ASD (26%) and 294 teachers of students with ASD (44%) selected trial and error as a primary form of how paraprofessionals learned how to complete their duties. Level 4 paraprofessionals ranked trial and error as their second most frequently selected form of training behind observing other staff. In contrast, Level 1 paraprofessionals were much less likely to select trial and error as a form of previous training. Rank ordering of previous training experiences revealed that paraprofessionals were much more likely to select trial-and-error as their perceptions of being qualified decreased (i.e., their self-selected level).

A pattern emerged that Level 1 paraprofessionals consistently had more experience and support in completing their duties as compared to Level 4 paraprofessionals who receive little support and supervision. These results infer that Level 1 paraprofessionals receive more effective teacher supervision than Level 4 paraprofessional. When a paraprofessional does not receive effective supervision or training they are more likely to resort to trial and error rather than EBPs.

RQ2. What are the barriers to professional development for paraprofessionals supporting students with ASD?

When asked on the survey, all stakeholders selected “no incentives,” “no time during the school day,” and “not paid for extra hours outside of contract” as the top three barriers. These barriers will be discussed as well as paraprofessional disposition. Budget constraints and paraprofessional disposition were categories that emerged through the qualitative data. These barriers heavily influence the quantity and quality of paraprofessional training and supervision.

Paraprofessional disposition is both a facilitator and barrier. No questions on the survey inquired into paraprofessional dispositions, however a plethora of comments yielded a qualitative category. Teachers and paraprofessionals supporting students with ASD identified the disposition of paraprofessionals as being a barrier to effective training. Teachers and paraprofessionals alike characterized this negative disposition as lacking motivation and dedication or passion to students and education. Some teachers of students with ASD furthered this line of thinking to say that even when provided training, some paraprofessionals with negative dispositions were unwilling to try new strategies even after training. A variety of comments suggested that not all paraprofessionals are well suited for working with students with ASD. When queried further, interviewees identified flexibility and patience as key personality traits a paraprofessional needed to successfully support students with ASD. These qualities echo

those found in previous research and suggests these qualities are not isolated to paraprofessionals supporting students with ASD (Groom & Rose, 2005; Wall, Davis, Winkler-Crowley, & White, 2005).

Paraprofessional disposition should ultimately be viewed not as a barrier, but rather an integral factor in training. Not all paraprofessionals supporting students with ASD in Virginia were described as having a negative disposition. In fact, several paraprofessionals supporting students with ASD and the majority of interviewees demonstrated qualities of a positive disposition. These paraprofessionals identified themselves and having an important role within the educational context and believed in their abilities to support students with disabilities. Some paraprofessionals supporting students with ASD also commented on the ability of all students to learn and their need to be treated with respect. These beliefs are important educator dispositions (Hallam, 2009). Dispositions can have substantial influence on how the paraprofessional receives and responds to teacher supervision and formal training efforts. These findings convey that paraprofessionals supporting students with ASD with positive dispositions are more likely to voluntarily select to attend training and seek knowledge outside of school hours. Conversely, paraprofessionals supporting students with ASD with negative dispositions are more likely to reject training opportunities and be hesitant to change their beliefs regarding students with ASD. For example, when viewing the other barriers through the lens of the leveled paraprofessionals, Level 1 paraprofessionals were less likely to strongly agree with the barrier statements as compared to the other levels. These findings further emphasize the theory that Level 1 paraprofessionals maintain a more positive disposition regarding training.

No school time for training. Survey results indicated paraprofessionals supporting students with ASD were more likely to strongly agree that “no time during the school day” was a

barrier than other stakeholder groups. However, within the qualitative data teachers of students with ASD had the highest frequency of comments regarding a lack of school time for training. In Virginia, teachers of students with ASD characterized this lack of school time as not having time to formally train, plan, or even engage in basic communication with their paraprofessionals throughout the school day. This barrier was not only apparent from the findings of this study, but also mirrors what was found in extant literature (Mavropoulos, 2005; McConkey & Abbott, 2011; Wallace et al., 2001). Teachers of students with ASD perceived time as being the largest barrier to effectively communicating with their paraprofessionals. Interviews revealed that teachers and paraprofessionals were using verbal communication as their primary means of interaction. Professional development research shows that it is most effective when it occurs within the context of an educator's daily work (Mizell, 2010). The National Staff Development Council (2001) recommends at least 25% of an educator's work time be devoted to professional development. This recommendation still falls behind the averages of teachers in Europe and Asia who typically engaged in professional development and learning during 40% of their work time (Ginn, 2012).

Beyond lacking time for adequate supervision, paraprofessionals supporting students with ASD also elaborated on the lack of opportunities to attend training during school hours. Paraprofessionals felt teachers were given opportunities to attend trainings during the day and they should be afforded the same. However, upon digging deeper, other paraprofessionals mentioned it was difficult to access trainings during the school day due to a lack of substitutes willing to fill paraprofessional positions.

Teachers of students with ASD and directors of special education noted that training opportunities during the school day had been reduced for all staff due to budget reductions in

Virginia. This will be discussed further in a later section. Administration may also be less likely to send paraprofessionals to training if they perceive that by sending a teacher, the information will be disseminated down to paraprofessionals. However the description of current supervision practices suggests this dissemination is not happening. Furthermore, both teachers of students with ASD and directors of special education were less likely to agree with the statement that there are not regularly scheduled trainings within their division. It is still unclear if this means that training opportunities are available within divisions and paraprofessionals are just less informed or if teachers and directors are over-estimating the number of training opportunities. This category also has interactions with several other factors in the paradigm. For example, as teachers lack training in how to effectively supervise paraprofessionals, they may be missing opportunities to communicate with and train paraprofessionals during the school day. If school divisions feel there are no potential solutions for accessing training during the school day, then they need to look outside of the traditional school day to provide training.

No compensation or incentives to attend training outside of the school day. This theme encompasses two different items on the survey: “no incentives such as pay raises, compensation time, bonus money, etc.” and “I am not paid for the hours that I attend training outside of the school day.” Both teachers and paraprofessionals supporting students with ASD ranked “no incentives” as the top barrier to training for paraprofessionals supporting students with ASD. Despite this being the top barrier selected by paraprofessionals, they still selected this as a barrier lower than expected, whereas teachers of students with ASD selected it higher than expected.

Although not directly asked on the survey, several comments mentioned poor pay. This concept of poor pay is prevalent in the paraprofessional literature (Hughes & Valle-Riestra,

2008; Lewis, 2005; Moran & Abbott, 2002; Tillery, Werts, Roark, & Harris, 2003). The concept of poor pay is directly related to the minimal qualifications of the position. A circular process exists where the position requires few qualifications because the pay is minimal, and yet the pay is maintained at that level because the qualifications are few. This circular process discourages paraprofessionals from pursuing higher education or specialized training, as they would not be provided career advancements or pay increases.

Teachers and paraprofessionals supporting students with ASD also indicated paraprofessionals were not compensated for attending training outside of school hours. Level 1 and Level 3 paraprofessionals (i.e., those provided training) did report being paid for attending training. However, Level 2 paraprofessionals (i.e., those not provided training) reported not being compensated. These results conclude that if school divisions are providing or requiring training outside of school hours they are compensating paraprofessionals supporting students with ASD in some way. This also alludes to the idea that if divisions in Virginia can't afford to compensate paraprofessionals for training outside of the school day, they are not providing training of any sort. Paraprofessionals and teachers supporting students with ASD indicated through qualitative data that the lack of compensation for attending training significantly reduced the likelihood of paraprofessionals voluntarily attending training. A majority of them expressed that paraprofessionals supporting students with ASD were not paid enough to justify the extra time and effort training requires. The qualitative data went on to reveal that due to familial responsibilities the paraprofessionals' time after school was limited, which further reduced their desire to attend training outside of school hours.

Budget constraints impact training resources. Qualitative data brought forth several comments regarding budget constraints. All stakeholders indicated that the current economy and

reduced school budgets were affecting paraprofessionals supporting students with ASD. Budgets were not only reducing the number of training opportunities for paraprofessionals supporting students with ASD, but also for teachers of students with ASD. Others mentioned that reduced budgets eliminated some paraprofessional positions, so those still employed within the division were fulfilling multiple roles. Paraprofessionals supporting students with ASD also indicated that reduced budgets were forcing administrations to prioritize their training needs and paraprofessionals were the first to be cut. This idea circles back around to the concept of strained or negative relationships as identified under teacher supervision. Paraprofessionals supporting students with ASD perceived they weren't being provided training due to administration not valuing their roles within the school.

Budget constraints aren't an isolated category, rather one that permeates across barriers and influences the quantity and quality of professional development across all areas. The National Staff Development Council (2001) recommends school divisions allot at least 10% of their school budget towards professional development. It does not, however, provide a recommendation for how much of that 10% should be dedicated to support staff such as paraprofessionals. As 15% of all instructional staff in Virginia is paraprofessionals (both general education and special education), then at least 15% of a school's professional development budget should be allocated to training and supervising paraprofessional staff (VDOE, 2012d).

RQ3. What are the professional development needs for paraprofessionals supporting students with ASD?

Training needs remain a broad category as the training needs of each paraprofessional will be a unique result of their disposition, interactions with their supervising teacher, previous

knowledge and training, and exposure to effective training structures. Notwithstanding this generalization, several categories emerged to answer research question #3.

Suggested training content for paraprofessionals supporting students with ASD. All stakeholders in Virginia ranked behavior management strategies as the highest area of training need. This finding was confirmed through the abundance of comments regarding behavior through the open-ended questions and interviews. All stakeholders ranked instruction as the lowest training need out of the four categories (i.e., behavior, communication, social skills, instruction). Killoran et al. (2001) also identified behavior management as being a top training need for paraprofessionals.

Interestingly, in all four areas, teachers of students with ASD and directors of special education ranked the level of need for paraprofessional training higher than paraprofessionals supporting students with ASD ranked their own perceived level of need. This result is not consistent with previous research where paraprofessionals repeatedly rated need for training higher than other stakeholders (Killoran et al., 2001). These findings, however, do echo the pilot data where paraprofessionals consistently ranked their level of need lower than teachers or directors in Virginia. Further research is needed to determine if these perceptions are unique to paraprofessionals supporting students with ASD, unique to paraprofessionals in Virginia, or another valid explanation.

The level of need for training in particular areas was also evaluated in light of the paraprofessional levels. Level 3 & 4 paraprofessionals (i.e., those without training) selected a need for training across all areas higher than Level 1 & 2 paraprofessionals. When asked what training format they preferred, Level 4 paraprofessionals selected comprehensive training higher than other leveled paraprofessionals. Furthermore, Level 1 paraprofessionals consistently ranked

their need for training across the areas lower than other paraprofessionals supporting students with ASD. These results are consistent with the finding that Level 1 paraprofessionals felt well prepared to complete their duties.

The survey also asked paraprofessionals to identify which EBPs they needed training in. Paraprofessionals supporting students with ASD selected the top strategies in each of the four domains as communication opportunities throughout the day, social narratives, functional behavior assessment, and structured work systems. There were no differences between the levels of paraprofessionals and their selection of EBPs. All stakeholders selected the same top strategies across areas with the exception of behavior. Paraprofessionals supporting students with ASD selected Functional Behavior Assessment, but teachers of students with ASD and directors of special education selected positive reinforcement. Many paraprofessionals supporting students with ASD requested additional training in crisis management content and how to handle aggressive behaviors. Paraprofessionals supporting students with ASD may have selected Functional Behavior Assessment as a top strategy as they were familiar with it frequently being used to develop behavior support plans for more intensive behavioral needs. A contrasting theory may be that paraprofessionals supporting students with ASD were not familiar with many of the EBPs and selected strategies based off of their vague familiarity with terms. Across the areas, several paraprofessionals supporting students with ASD noted they were not familiar with any of the EBP strategies referred to in the survey, which is consistent with previous research (Dymond et al., 2007; Lablanc, Richardson, & Burns, 2009; Stahmer, Collings, & Palinkas, 2005).

Interviewees were asked to elaborate on why paraprofessionals supporting students with ASD selected these particular strategies. Interviewees were not able to articulate a clear reasoning for why these strategies were selected over others, but rather all strategies were

important. Level 1 and 2 paraprofessionals were more familiar with the EBPs and able to speak more knowledgeably about them when asked. Level 3 and 4 paraprofessional interviewees were much more limited in expressing their knowledge of EBPs.

Comments from the survey revealed paraprofessionals supporting students with ASD did not directly name EBPs as suggested training content, but rather overarching concepts such as behavior or communication. Teachers of students with ASD suggested several specific EBP strategies, which imply that teachers may possess the knowledge and skills to support students with ASD, but are not transferring those skills to the paraprofessionals they supervise.

Through the comments and interviews, paraprofessionals supporting students with ASD in Virginia identified a need for training in other disability populations. This was also a training need identified by Killoran et al. (2001). Paraprofessionals supporting students with ASD reported working with a variety of students with disabilities throughout the day, not just students with ASD. Teachers of students with ASD, however, identified the need for training in disabilities in a different light. They didn't feel paraprofessionals needed training in the various disabilities, but rather all paraprofessionals, regardless of whom they worked with, should receive training.

Suggested format for training paraprofessionals supporting students with ASD.

When asked, all stakeholders agreed the most helpful format for paraprofessionals supporting students with ASD would be to observe other effective staff and problem solving with others. Teachers felt that problem solving would be particularly beneficial. These findings are aligned with best professional development practices that training opportunities should be collegial and community oriented (Darling-Hammond & McLaughlin, 2011). Along this same vein, the qualitative results brought to light that the paraprofessionals supporting students with ASD in

Virginia wanted trainings where they could attend with their supervising teacher and trainings where they could attend with other paraprofessionals. In conflict with these findings, paraprofessionals supporting students with ASD indicated that monthly meetings with their teacher would not be helpful. This result may be in part related to the meetings not occurring frequently enough, or the perception that staff meetings are not helpful.

Despite the growing understanding that traditional “one shot” workshops are not effective (Mertens & Flowers, 2004), they were still ranked the third most desired training format. It may be that stakeholders were familiar with this format and felt an increase in the number of workshops attended would be helpful. However, immersion sessions, which follow a similar training style, were amongst the least preferred training formats. Self-study materials were also ranked as being not desirable.

Unexpectedly, paraprofessionals supporting students with ASD selected college coursework as being a desirable training format higher than teachers or directors. This finding may be a result of 71% the paraprofessional sample having some college experience. It may also be the result of several survey participants having already taken the online paraprofessional course and had a positive experience. This response may be alluding to the fact that they would like to receive more training in this format.

All stakeholders alluded to the need for professional development to be individualized to the unique needs of each paraprofessional supporting students with ASD. Stakeholders spoke to the need for training to be individualized based on a variety of factors including the previous experiences of the paraprofessional. All interviewees elaborated on their previous experiences and knowledge that assisted them in completing their duties. For some, it was serving as a substitute, while others had previous experiences with people with disabilities. Others wanted

training differentiated based on the needs of the student with whom they worked. For example, if supporting a highly verbal student with ASD, then they would receive communication training in pragmatics and social skills instead of speech generating devices. Finally, paraprofessionals supporting students with ASD wanted training based on the setting in which they worked such as an inclusive classroom or a self-contained classroom. Keeping adult learning principles in mind, it is very important for staff developers to be aware of the previous experiences of participants and tailor the training to build on their previous knowledge.

Qualitative data brought forth other format suggestions. A high number of comments indicated a need for training prior to working with students. Both teachers and paraprofessionals suggested utilizing professional development days already in place within the division to train paraprofessionals supporting students with ASD. Currently, when these professional development days took place during the school year, divisions either dismissed paraprofessionals when the students left, or had them stay in the school building but did not provide organized professional development during that time. Teachers and paraprofessionals supporting students with ASD also mentioned that teacher workdays prior to the beginning of the school year were under-utilized.

Persistent lack of qualifications for paraprofessional hire. Qualitative comments produced a theme of a need for higher qualifications for paraprofessionals. Currently, special education paraprofessionals are only required to hold a high school degree or equivalent (VDOE, 2010b). Paraprofessionals at Title I schools must have some college experience or pass a proficiency test (NCLB, 2001). Teachers and paraprofessionals supporting students with ASD both felt these low qualifications attracted people to the position that did not possess the necessary professional dispositions to successfully fulfill the roles and responsibilities of being a

paraprofessional supporting students with ASD. A lack of effective hiring practices for paraprofessionals within school divisions has sustained the hiring of paraprofessionals with negative dispositions. If administrators lack insight into the skills and qualities essential to the paraprofessional position, then they will not be asking insightful interview questions to determine an appropriate fit. Although previous research revealed challenges regarding hiring practices (Ghere & York-Barr, 2007; Howard & Ford, 2007), no research has revealed a connection of hiring paraprofessionals in relation to their professional dispositions. However, this theory has been explored in the hiring of other educators (Wasicsko, 2005).

Many participants suggested strategies for increasing the qualifications of paraprofessionals supporting students with ASD. Some teachers and paraprofessionals suggested increasing the minimal educational level, and others suggested a required training prior to hire. Some paraprofessionals went even as far to suggest a certificate or license for working as a paraprofessional in schools. When asked about a license, interviewee responses were mixed. Some interviewees were in strong agreement, but others felt it would alienate more senior paraprofessionals already within the division. Others suggested a tiered system of paraprofessional training and certification. Interviewees indicated an interest in pursuing higher levels of certification, but only if it came with added compensation. Five other states in the United States have implemented a multi-tiered system of paraprofessional support with success (National Resource Center for Paraeducators, 2012).

Finally, some paraprofessionals supporting students with ASD called for better supervision of paraprofessionals through evaluation. All interviewees reported administrators observing the classrooms they worked in, but they received no feedback regarding their performance. Others indicated they received a yearly evaluation from administration, but weren't

sure what they were being evaluated on or how those conclusions were met. Virginia recently increased its requirements of the teacher evaluation system and professional growth and yet, evaluations were not increased for paraprofessionals (VDOE, 2012b).

Explanatory Theory of the Professional Development of Paraprofessionals Supporting Students with ASD

The purpose of grounded theory is to develop an explanation or theory to describe a phenomenon (Strauss & Corbin, 1990, 1998). After a thorough review of the literature, the following theory was developed: Many of the barriers to paraprofessional training lay within the construction of the educational system and the organization's climate. Through this study, the theory was refined and expanded to contain more specific detail. This study confirms that, currently, paraprofessionals supporting students with ASD are receiving insufficient training to effectively support students with ASD (RQ1). The theory was expanded to include the idea that the quantity and quality of training, and in turn the transfer of learning, are determined by four interrelated factors: (1) the paraprofessional, (2) the teacher, (3) the administrator, and (4) the school culture (Figure 2). The prevalence and strength of the aforementioned factors serve as facilitators and barriers to the quantity and quality of training for paraprofessionals supporting students with ASD (RQ2). Finally, the outcome of insufficient training, regardless of the degree, is the need for more training. Training needs will be individualized to each paraprofessional based on the other related factors in the model (RQ3).

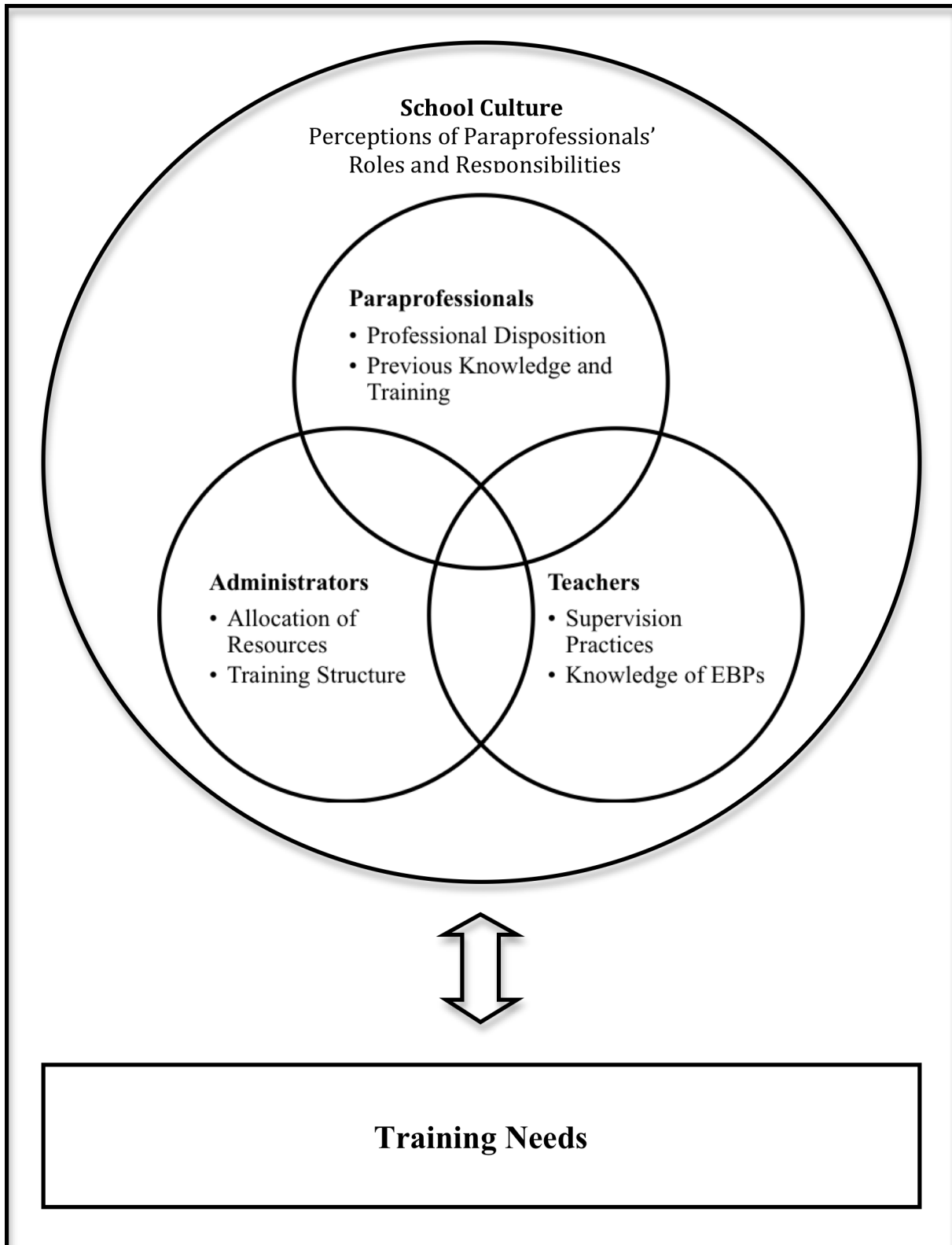


Figure 2. This figure illustrates the explanatory theory of training for paraprofessionals supporting students with ASD.

Paraprofessional. How training is received and perceived begins with the individual paraprofessional. Paraprofessionals bring their own professional disposition into the training equation. Their willingness to learn and grow from feedback, supervision, and training will serve as a lens through which the paraprofessional will receive training. This professional disposition may be one of the most difficult areas to impact through training and thus it is vital that administrators assess the quality of the paraprofessional's disposition prior to hire.

The paraprofessional also brings in her previous knowledge and experiences, which greatly determines her future training needs and how future training will be perceived. These previous experiences may be positive or negative. For example, if a paraprofessional previously served as a substitute in a classroom with poor teaching models, then that paraprofessional may draw from those experiences to select inappropriate teaching strategies. Conversely, a paraprofessional may also have a family member with a disability and may draw from those experiences to be more empathetic or provide longer response times. Previous knowledge and training will also have impact of the paraprofessional's need for particular content

Finally, the paraprofessional's perceptions of roles and responsibilities within the school will impact her openness to training. The paraprofessional's perception of roles and responsibilities will be influenced by how the job duties were presented to him at hire. If the actual duties closely match those described at hire, then the paraprofessional will be more open to training. However, if there is a mismatch between the paraprofessionals perceptions of what their duties include and reality, then the paraprofessional will be less open to training and transferring those newly learned skills to the workplace.

Teachers. As direct supervisors, teachers also play an important role in the professional development of paraprofessionals supporting students with ASD. The teacher's perceptions of

the paraprofessional's roles and responsibilities will influence the quantity and quality of the teacher's supervision of that paraprofessional. For example, if the teacher perceives that the paraprofessional's role is primarily clerical in nature, then she will be less likely to provide supervision or training regarding instructional matters. The teacher's previous experiences and trainings also shape supervision. If the teacher has received little training regarding the supervision of paraprofessionals, then it is possible that the teacher does not view himself in the role of supervisor and thus provides limited feedback regarding job performance. Also if the teacher has had previous negative experiences with paraprofessionals, say differences in teaching philosophy, then those experiences color the current perceptions of the teacher and may make the teacher less open to working with future support staff. On the other hand, if a teacher has had experience with paraprofessionals with positive dispositions who were highly motivated to learn new skills, then the teacher will be more open to sharing with and training future paraprofessional staff.

The teacher's own knowledge of students with ASD and EBPs will determine the extent to which the teacher can disseminate this information to the paraprofessionals under their supervision. If a teacher only has a superficial understanding of EBPs then it is likely that if the teacher were to attempt to train another staff member, then key points of implementation may not occur with fidelity. It is important for the teacher to have a working knowledge of the various EBPs to model and provide feedback to support staff regarding their implementation.

Within the classroom context, teachers have a significant amount of influence regarding classroom routines, procedures, and delegation of time. The classroom teacher models continuous professional development and the importance of continued growth. This may occur through the teacher sharing with the paraprofessional newly learned skills from a recently

attended training. The teacher also leads the supervisor/supervisee relationship by creating effective communication pathways. This may occur through daily debriefing, mini-team meetings, communication notebooks, or emails. The quality and quantity of that communication is highly determinate by the teacher. The teacher also directs instruction and is more able to find breaks in instruction to be able to provide direction and feedback to the paraprofessional. The teacher has greater control over the use of time within the classroom environment and will determine if time is spent interacting with the support staff within his classroom.

Administrators. Administrators at the state, division, and building level all influence the quantity and quality of training for paraprofessionals supporting students with ASD in Virginia. The administrator's perceptions of paraprofessional roles and responsibilities heavily impact the allocation of resources such as time and funding for training. At a building level, administrators determine the allocation of planning time for teachers and the placement of paraprofessionals amongst other things. Case in point, if an administrator assigns a paraprofessional to support students in three different classrooms it will be difficult for that paraprofessional to find regular meeting time with all three teachers unless the administrator is purposeful about finding that time.

At a division level, administrators hold authority over the development and maintenance of training structures. If administrators perceive that paraprofessionals are a valuable member of the educational team, they will be more likely to include them in planned professional development or create professional development specifically for them. Division level administrators allocate funding and time for paraprofessionals to attend training. The quantity and quality of trainings offered is highly influenced by budgetary decisions. Division level administrators also have the authority to require training of paraprofessionals. They are

frequently the source through which the format and content of paraprofessional training is determined.

School culture. School culture is the organizational climate in which the training of paraprofessionals supporting students with ASD occurs. As described previously, organizational climate has four dimensions that impact the employee's perceptions of their workplace: (1) role stress and lack of harmony, (2) job challenge and autonomy, (3) leadership facilitation and support, and (4) work group cooperation, friendliness and warmth (James & James, 1989; James & McIntyre, 1996; James & Sells, 1981). As depicted in the literature and through the results of this study, the phenomenon of professional development for paraprofessionals is greatly influenced by the school culture. All four dimensions of organizational climate apply to paraprofessionals within the school context. (1) Paraprofessionals continue to have unclear roles, which reduces the paraprofessional's desire to attending training and the paraprofessional's ability to transfer skills back to the classroom. (2) Paraprofessionals may either feel over-challenged or under-challenged in their job position depending on their previous experience and knowledge. If the paraprofessional feels appropriately challenged then the school culture facilitates training. (3) The findings demonstrate that effective leadership, supervision, and support from teachers and administrators aids the transfer of skills. (4) Paraprofessionals felt their relationships with their supervising teachers to be one of the paramount issues in receiving training.

Overall, the findings also suggest that the school culture regarding paraprofessionals is poor as it lacks clear roles, appropriate responsibilities, effective supervision, and adequate recognition. Currently, the pervasive school culture does not recognize the contributions of paraprofessionals. Within the framework of the theory, all stakeholders are battling to overcome

the culture regarding paraprofessionals that has been created within the school, division, and state. The influence of school culture is strong and is often difficult to overcome (Hollins, 2008). The school culture impacts how the paraprofessional views herself within the school and her roles and responsibilities. The school culture also influences how the paraprofessional views her interactions with her supervising teacher and administrators. School culture similarly impacts the supervising teacher and administrator.

Despite its importance, school culture is not the overriding element of paraprofessional training. Each stakeholder plays an integral role in facilitating training and the transfer of skills. The perceptions and knowledge of all three stakeholders are interrelated within the context of school culture. Changes in the perceptions or knowledge of any particular stakeholder impacts the dynamics and can change or maintain the school culture. This can be thought of as the circles expanding or contracting based on the strength of a particular stakeholder or element. For example, if the perceptions of the paraprofessional changes then he may be more likely to voluntarily attend training outside of the school day. To represent this change the paraprofessional circle would expand in size. The paraprofessional's ability to transfer these newly learned skills would be dependent on the quality of the environment as facilitated by the supervising teacher, administrator, and school culture. To further this point, if the teacher was not an effective supervisor then the teacher circle would contract leading to a skewed Venn Diagram (Figure 3). The transfer of skills will occur most efficiently and effectively when all elements in the model are balanced.

Each paraprofessional will have his or her own unique training experience. It is out of these interactions between the stakeholders and the school culture that training needs are identified and met or left unmet. This is an active, circular process where training is delivered,

which influences the perceptions, dispositions, and knowledge of stakeholders, and then again identifies further training needs. It is through training and systems change that core elements such as school culture and dispositions will change.

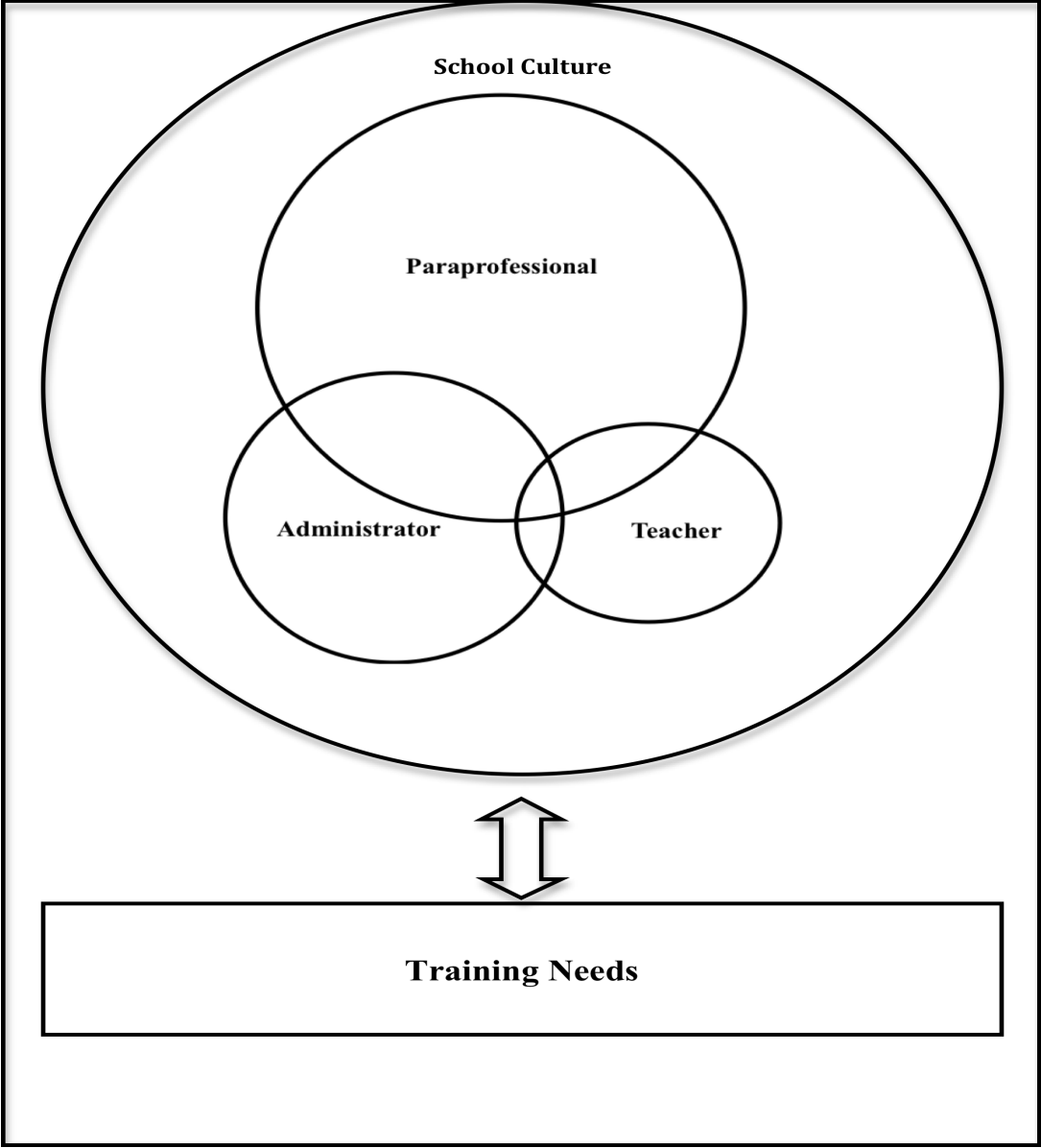


Figure 3. This figure illustrates the concept that the training needs model changes as the unique factors of each element are inputted into the model.

Relevance of the Study

To date, no other study has investigated the training needs of paraprofessionals supporting students with autism. This study is relevant in two ways: (1) it contributes the existing literature regarding paraprofessionals, and (2) it adds to the growing body of literature regarding staff supporting students with ASD. This research presents that the current training practices and school context for paraprofessionals are similar to those experienced by paraprofessionals who support students with ASD. As shown throughout the findings and discussion, this research confirms a large portion of the existing paraprofessional literature including the lack of paraprofessional training, unclear roles and responsibilities, insufficient teacher supervision, and a lack of awareness regarding EBPs. In particular, this study builds on the previous findings of Killoran et al. (2001) and Riggs (2001). As described earlier, few studies have been published documenting the training efforts for paraprofessionals. This study documents the current training practices in Virginia. It also contributes to the existing paraprofessional literature by exploring training needs for paraprofessionals in light of supporting a particular population of students.

The professional development strategies and needs for training staff to implement EBPs for students with ASD are beginning to emerge. As the diagnosis of autism has increased dramatically, it is vital that all staff is provided effective training to educate these students. This study will serve as the basis for further investigation into the training needs of support personnel who work with students with ASD.

This study is also specifically relevant at a state level. In 2012, a bill was signed into law requiring all paraprofessionals under the supervision of teachers supporting students with ASD to receive training (Massie Bill, 2012). This study provides much needed information to VDOE and

affiliated organizations to develop and disseminate training that will meet the needs of paraprofessionals supporting students with ASD across the state.

Limitations

Although research procedures were rigorously developed and implemented, there are still some limitations and shortcomings that need to be addressed. There were a number of limitations related to the procedures. First, a response rate could not be calculated for teachers and paraprofessionals supporting students with ASD, as no known data exists about these specific populations in Virginia. Additionally, no demographic data exists regarding paraprofessionals supporting students with ASD; therefore, the sample demographic information can't be confirmed or denied to be representative of the whole (Mitchell & Jolley, 2007). However, the percentage of paraprofessionals and teachers from the larger special education population that participated in the survey closely mirrors the percentage that students with ASD account for the special education population. This indicates that this limitation is most likely nominal.

Second, the survey relied on paraprofessionals and teachers identifying themselves as working with students with ASD. Several speech and language pathologists contacted me to question if they should participate in the survey. They did not meet the guidelines for inclusion, but it illuminates that the inclusion criteria may have not been made clear enough through the distributed emails.

Third, the study relied on completely voluntary participation, especially on the part of the directors of special education. If a director chose to not forward the participation email, several potential participants could have been missed. However, the number of directors of special education who at least accessed the survey is a promising indicator that this limitation may have been minimal. This method of distribution may have also produced a response bias, as the

request to partake in the survey came from their division level administrator. Participants may have felt it necessary to provide responses that favored the school division.

The qualitative portion of the study also held some limitations. Interviews were limited to a small sample of leveled paraprofessionals. Interviews brought to light several themes that could have been explored in greater depth if the other two stakeholders populations had also participated in interviews. This limitation lends itself to future research to extend this study by further exploring the perceptions of teachers of students with ASD and directors of special education. The qualitative portion was used within this study to provide an explanation for the quantitative data. Self-report can limit the quality of responses and may not provide the depth of information the researcher was seeking. The qualitative data through comments and interviews did not provide a sufficient explanation for why paraprofessionals made their specific EBP choices. It is still unclear if paraprofessionals are knowledgeable regarding EBPs and implementing them in the classroom. The methodological design was not appropriate in ascertaining an adequate answer to this question; observation of paraprofessionals would have provided better data.

As with any self-report measures, there is always a risk that some participants may respond to questions by saying what they perceive is expected, rather than truthful. The validity of the results may be reduced as a result of participants deceiving themselves or others and not presenting an accurate account of the phenomenon. Despite these possible limitations, the self-report results were consistent between the surveys and interviews, suggesting the responses were likely accurate representations of reality.

As the population was limited to Virginia, this study can't be generalized to other populations of paraprofessionals supporting students with ASD across the United States. Also,

the study employed grounded theory design, so the theoretical framework must be viewed as an emerging theory until other studies can refine, confirm, or deny the validity of the theory.

Recommendations for Future Research

This study lays a foundation for future research in an area that has been previously unexplored in the literature of paraprofessionals and ASD. As identified in the limitations section, our understanding of paraprofessional use of EBPs and, in part, their need for training in this area in Virginia is limited. Other methodological designs may produce more valid results regarding this aspect of paraprofessional training.

As this was the first study to investigate training needs of paraprofessionals supporting students with ASD, replication studies need to be conducted. Replications would further validate the survey tool and demographic data that were collected in Virginia. This study created an emerging theory through the qualitative phase of the study. In the tradition of grounded theory, this theory needs to be reflected upon, tested, and revised in other contexts to validate the proposed theory (Strauss & Corbin, 1998). Furthermore, the theoretical model or core theme identifies paraprofessionals' feelings of competency to be tied to their personal dispositions and effective supervision. Future research should explore this hypothesis more in depth. Further research may include exploring disposition characteristics that are maintained by Level 1 paraprofessionals as compared to Level 4 paraprofessionals.

Expanding and validating the theory may also include investigating the qualities of effective teacher supervision. Is teacher supervision similar or dissimilar to effective supervision in other fields such as business? What methods or strategies make up effective supervision and communication between paraprofessionals and teachers? Understanding teachers' perceptions of

their experiences supervising paraprofessionals will allow researchers to identify the training needs of teachers who supervise paraprofessionals.

Future research should further investigate divisions that have effective training structures in place. Researchers should question the format and delivery of training, how training for paraprofessionals is provided through the budget, and its impact on paraprofessional quality. This may help develop a division level model for others to follow.

Recommendations for Practice

These findings suggest several courses of action for practitioners, school divisions, and the state department of education. This study was brought about as a result of new policy (Massie Bill, HB 325, 2012). In response to the policy, online training modules were developed to meet the mandated training standards. VDOE was challenged with creating a comprehensive and broad training that covered all of the training requirements and was packaged succinctly for easy consumption. The online paraprofessional training has several advantages and overcomes many of the constraints identified by stakeholders. VDOE developed, produced, and maintains the training free of charge to school divisions. The modules are also available at any time via the Internet. Yet, this can also be seen as a constraint. School divisions must decide if they will provide time during the school day for paraprofessionals to complete the modules, if they will provide compensation to complete the modules outside of the school day, or require paraprofessionals to complete the modules with no compensation.

The constraints with the online paraprofessional course brings to light the structural challenges school divisions face in order to provide training to paraprofessionals supporting students with ASD in Virginia. The contextual barriers that impact paraprofessional training can be reduced to time and money. School divisions need to thoughtfully explore the resources they

already have in place within their divisions to provide training to paraprofessionals supporting students with ASD. Survey participants provided several viable solutions, such as allowing paraprofessionals to attend training during teacher workdays prior to the beginning of the year and professional development days. There appears to be confusion from paraprofessionals as to how their contract limits their number of days worked despite being paid year round. School divisions may need to better articulate the formula for determining days worked. School divisions should also consider adding days specifically for professional development to paraprofessional contracts.

Although the online paraprofessional course is comprehensive and provides instruction regarding behavior management and communication strategies, participants still felt these were high training needs. The online paraprofessional training should be evaluated in light of these findings and determine if additional content should be added or presented in a different manner to best meet the needs of current paraprofessionals supporting students with ASD. One possible explanation for paraprofessionals still feeling behavior is a training need may be the inability to generalize skills learned from the online training. VDOE, state agencies, and school divisions should explore options for providing follow-up within the classroom to ensure understanding of the content learned from the training.

Several paraprofessionals mentioned they had received basic ASD training and desired more in-depth training. Currently, the online paraprofessional course does not meet the needs of this group of paraprofessionals; consequently, state agencies should explore additional trainings that build on the initial concepts introduced in the first modules. These additional modules may also meet the advanced training needs of paraprofessionals with highly motivated professional dispositions.

The findings suggest online training may not be the optimal format for all paraprofessionals. In keeping with adult learning principles, a variety of training formats should be offered to best meet the needs of the paraprofessionals. Some paraprofessionals may need more immediate feedback regarding their own practices and may need to observe someone modeling the practice several times before being able to implement practices on their own. The findings also show that the skills and experiences of paraprofessionals are variable and one packaged-training is not sufficient. Training should be individualized to the learner to account for prior education, experience, and training preferences.

It was found that effective teacher supervision was a critical factor in paraprofessional training; training should not just be offered to paraprofessionals. Teachers are in need of training regarding how to effectively supervise paraprofessionals. The field has long identified this as a need and yet, there has been little action. If teachers are the direct supervisors of paraprofessionals, they need to be prepared for this role either through preservice education or on the job. As paraprofessionals are prevalent in special education, it is likely that all special education teachers will supervise a paraprofessional at some point in their career. This training should encompass appropriate roles and responsibilities, communication, and how to transfer knowledge and skills to other staff. Teachers need to be prepared to translate their knowledge of EBPs to another practitioner.

Teachers also lacked training in how to effectively support students with ASD. Teachers and paraprofessionals may benefit from attending trainings together, so knowledge could be presented synchronously and processed together as a team. This format of training would also build team cohesion through providing opportunities for group communication, planning, and

reflection. As suggested earlier, these kinds of trainings could ideally be provided during teacher workweek or professional development days.

Finally, the development of training standards for paraprofessionals supporting students with ASD in Virginia provides school divisions and administrators the opportunity to reflect on the current job responsibilities they are asking their paraprofessionals to complete. If school divisions align the job responsibilities to the training standards, paraprofessionals may be less likely to feel trained and still unqualified. If paraprofessionals are consistently completely duties outside of their appropriate role, they will continue to feel unprepared. The distribution of the training standards across the state may also help administrators realign their perceptions of paraprofessionals and their job responsibilities. This realignment may aid administrators in hiring paraprofessionals whose dispositions more closely match the qualities and skills needed to effectively supervise students with ASD.

As demonstrated through the professional development theory, the transfer of skills from training does not occur in isolation, rather it is mediated through the relationships between the stakeholder and the school culture. Future trainings and supervisory practices must take into account the paraprofessional's individualized experiences, preferences, and knowledge; the teacher's ability to supervise, provide feedback, and implement practices; and the provision of resources that support training from the administrator within the school culture. The complex nature of training infers that systemic change must occur to move the school culture in a direction that provides the time and resources to effectively support paraprofessionals and teachers in their training efforts.

Recommendations for Policy

As eluded to in the recommendations for practice, even with the recommended changes to practice the current legislation and subsequent online training both fail to address the systemic needs for comprehensive reform regarding the hiring, training, and sustaining of instructional paraprofessionals in Virginia. This reform should include all instructional paraprofessionals, not just those assigned to work with a teacher who has primary oversight of students with ASD. The current legislation may provide role clarity for paraprofessionals supporting students with ASD, but continues to deny role recognition for all other paraprofessionals. As described previously the misperceptions of the paraprofessional role greatly prohibits the implementation of effective training and supervision. Therefore, a three-pronged approach to comprehensive reform is proposed: (1) increase the professionalism of the position through the institution of a multi-tiered paraprofessional certification system, (2) require supervisory training for teachers, and (3) require professional development, supervision, and evaluation on the part of local school divisions.

Multi-tiered paraprofessional certification system. Currently, the paraprofessional position lacks the level of professionalism needed to attract persons appropriate for the position. Many participants suggested increasing the professionalism of the position through increased pay and advocated for the creation of a multi-tiered pay system. All interviewees said they would be willing to pursue higher levels of training for higher pay. The state should implement a multi-tiered system that includes education requirements, training requirements, and salary increases.

With an increase in pay, paraprofessional training and education requirements should also be raised. All paraprofessionals should be required to attend a one-day orientation within 90 days of hire. The orientation should include an overview of roles and responsibilities, local policies

and procedures, ethics, professionalism, confidentiality, communication, and teamwork. This would set the foundation of expectations for the position and establish at the onset appropriate roles for paraprofessionals. Also, all paraprofessionals, regardless of placement in a Title I program or not, should be required to meet the NCLB highly qualified standards for employment. Meaning if a paraprofessional only maintains a high school degree or equivalent, then they must pass the ParaPro Assessment at no cost to the division prior to hire.

Table 29

Proposed Multi-tiered Paraprofessional Requirements and Pay

Level	Minimum education required	Training required	Pay increase %
Level I	High school diploma or GED	Passed ParaPro Assessment	Current salary + 5%
Level II	Associate's degree or 60 credit hours	Completed para. training	Level I + 5%
Level IIIA	90 credit hours	Completed para. training	Level II + 5%
Level IIIB	Associate's degree or 60 credit hours	Completed advanced modules	Level II + 10%
Level IV	90 credit hours	Completed advanced modules	Level III + 10%

Note. GED = General educational development; Credit hours = higher education credit hours; para. = paraprofessionals.

To further delineate paraprofessional roles and responsibilities a multi-tiered system of training and pay should be implemented. Table 29 describes the differentiation of levels based on minimum education and training. As seen in the table, all paraprofessionals would meet the minimum NCLB education standards through Level I or Level II. All paraprofessionals at Level II or greater would have to complete and pass an updated version of the online training currently required for paraprofessionals supporting students with ASD (Virginia Board of Education,

2013). As several paraprofessionals indicated a need for advanced training, Levels IIIB and IV provide opportunities for advancements in pay for additional training. Some suggested advanced trainings include applied behavior analysis, low incidence disabilities, literacy strategies, transition and employment, and advanced behavior management. Advanced modules should require a demonstration or portfolio component.

It is also suggested that particular assignments should be reserved for higher levels. For example, all paraprofessionals assigned to special education must maintain a Level II certification or higher under the justification that supporting special education students requires advanced training in implementing IEPs and providing appropriate accommodations and modifications. Paraprofessionals assigned to be one-to-one support for a student should maintain a Level IIIB or IV certification having completed the advanced modules necessary to support the student such as advanced behavior management or strategies for supporting students with vision impairment.

As previously inferred, the current online training and state training standards should be expanded to include support strategies for all learners with disabilities. As the training standards exist now, with the exception of the general autism standards, all other standards could easily be applied to supporting all students with disabilities. It is recommended that the general autism standards be expanded to include characteristics of the various disability categories served in Virginia as defined by VDOE. This training would then be applicable to all paraprofessionals assigned to special education.

Supervisory training for teachers. As the findings clearly illuminated a need for teachers to receive training regarding the supervision of paraprofessionals, it is suggested that VDOE develop and require a supervisory training for teachers. This one-time training should be required

of all special education teachers and general education teachers the year they are assigned a paraprofessional of any level. This training would help teachers develop a paraprofessional supervision notebook to be used within their classroom. This notebook would articulate the teacher's classroom philosophy, common roles and responsibilities, routines and procedures. This notebook would also serve to hold records of teacher and paraprofessional team meetings and communications. The training would instruct teachers how to interactively use the notebook within their classroom to facilitate communication and supervision with their paraprofessional. The notebook should be updated each school year a teacher is assigned a paraprofessional. The implementation of this notebook system for teacher and paraprofessionals would standardize supervision practices for teachers and paraprofessionals across the state. As paraprofessional assignments can frequently change, this would provide consistency and a uniform communication system for teachers and paraprofessionals.

Accountability for school divisions regarding supervision and professional development. As described in the theoretical model, the paraprofessional position will not be professionalized until schools begin to acknowledge and respect the contributions of paraprofessional staff. This change in school culture will require a larger systems-wide change through increased professional development, supervision, and evaluation. Therefore, it is suggested that school divisions should be required to provide at least two days of professional development a year to paraprofessionals. The content of the professional development is to be determined by school divisions and could include joint training of paraprofessionals and teachers. For newly hired paraprofessionals, the orientation training mentioned earlier could count towards one of these two days.

Systemic changes also need to be made regarding current supervision practices. To overcome the barrier of a lack of school time for planning between paraprofessionals and teachers, school divisions should be required to allot at least one hour of planning a week. This time may be broken up across days but should be accounted for in a scheduling. Currently, there is much role confusion regarding the supervisory role of teachers. To clarify this responsibility all paraprofessionals should be specifically assigned at least one supervising teacher. A paraprofessional may be assigned more than one teacher if they provide support to students in multiple classrooms. This assignment would identify that supervising teacher as the one primarily responsible for supervision, communication, and on-the-job training and coaching. If a paraprofessional is assigned to special education, then the supervising teacher must be a special educator regardless of placement. This supervising teacher would also be responsible for providing a portion of the paraprofessional's performance feedback.

To further provide accountability and continued professional growth, paraprofessionals should be evaluated annually. Evaluations should consist of an observation of skills, a supervising teacher's feedback, and an administrator's feedback. Evaluation rubrics for each paraprofessional level should be developed by VDOE.

Systemic change literature demonstrates that effective change will not occur until stakeholders realize the current system is not effective (Anderson, 1993). The results of this study infer that stakeholders are indeed aware that the current system is not working. To fully switch from an old system to a new system several key elements need to be in place. Key elements include: public and political support, the infusion of teaching and learning based on adult learning principles, a shift in roles and responsibilities, and policy alignment (Anderson,

1993). To truly make change, policymakers must support a comprehensive reform that meets the needs of all stakeholders and shifts the current school culture.

Final Conclusions

With the continued increase in autism, this study is highly relevant to providing training and supervision for the educational staff who work directly with this population of students. The study sought to bridge the gap between paraprofessional literature and autism staff training literature. An examination of the professional development of paraprofessionals supporting students with ASD reveals a lack of supervision, training, and skills. The result of poor training and supervision leads paraprofessionals to resort to learning through trial and error.

Paraprofessionals supporting students with ASD feel qualified to complete their duties as a result of personal disposition and effective supervision. Paraprofessionals supporting students with ASD desire training individualized to their students concerning behavior management and communication strategies.

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Appendix A

Identified Evidence-Based Practices with Descriptors

Table A1

Identified Evidence-Based Practices with Descriptors

Prompting	Behaviorally based antecedent teaching strategy
Reinforcement	Behaviorally based consequence teaching strategy
Task analysis and chaining	Behaviorally based antecedent teaching strategy that breaks down steps and links them for prompting
Time delay	Behaviorally based antecedent teaching strategy that promotes errorless learning
Computer-aided instruction	The use of computers for varied instruction
Discrete trial training (DTT)	One-to-one instructional strategy that teaches skills in a planned, controlled, and systematic manner
Naturalistic interventions	A variety of strategies that closely resemble typical interactions and occur in natural settings, routines, and activities
Parent-implemented interventions	Strategies that recognize and use parents as the most effective teachers of their children
Peer-mediated instruction/intervention (PMII)	Strategies designed to increase social engagement by teaching peers to initiate and maintain interactions
Picture exchange communication system (PECS)™	A system for communicating that uses the physical handling over of pictures or symbols to initiate communicative functions
Pivotal response training (PRT)	An approach that teaches the learner to seek out and respond to naturally occurring learning opportunities
Functional behavior assessment (FBA)	A systematic approach for determining the underlying function or purpose of behavior
Stimulus control/Environmental modification	The modification or manipulation of environmental aspects known to impact a learner's behavior
Functional	A systematic practice of replacing inappropriate or ineffective

communication training (FCT)	behavior with more appropriate or effective behaviors that serve the same function
Extinction	Behaviorally based strategy that withdraws or terminates the reinforce of an interfering behavior to reduce or eliminate the behavior
Differential reinforcement (DRA/I/O/L)	Behaviorally based strategies that focus on reinforcement on alternative, incompatible, other, or lower rates of the interfering behavior in order to replace it with more appropriate behavior
Self-management	A method in which learners are taught to monitor, record data, report on, and reinforce their own behavior
Social narratives	Written narratives that describe specific social situations in some detail and are aimed at helping the individual to adjust to the situation or adapt their behavior
Social skills training groups	Small group instruction with a shared goal or outcome of learned social skills in which participants can learn, practice, and receive feedback
Structured work systems	Visually and physically structured sequences that provide opportunities for learners to practice previously taught skills, concepts, or activities
Video modeling	Utilizes assistive technology as the core component of instruction and allows for pre-rehearsal of the target behavior or skill via observation
Visual supports	Tools that enable a learner to independently track events and activities

Training for Paraprofessionals Supporting ASD Survey- Para Pilot

Survey Introduction:

Thank you for taking the time to complete this survey. This survey will provide information about the professional development needs of paraprofessionals. Please carefully consider each question, providing an honest response.

To participate in the survey you must meet the following criteria:

-You must be currently employed in a prek-12 educational institution in Virginia.

-If you are currently employed as a paraprofessional you must have provided support to at least one student with ASD on a daily basis within the past year.

-The student(s) with autism meets the educational criteria of autism as outlined in the Individuals with Disabilities Education Act (IDEA). This definition is as follows: a developmental disability significantly affecting verbal and nonverbal communication and social interaction, usually evident before age 3, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences (34 C.F.R. 300.7(c)(1)).

Prior to completing this survey, please read this statement:

If you agree to participate, you will be asked to take an internet-based survey. This survey should take approximately 15 minutes of your valuable time.

Risks: There are no foreseeable risks for participating in this research.

Benefits: This survey will help the development of trainings for paraprofessionals supporting students with Autism Spectrum Disorders.

Confidentiality: All data collected from this web-based survey will be kept confidential. Names and other identifiers will not be placed on surveys or other research data. Your responses will not be identified with you personally. No individual demographic information will be shared, and all information will be incorporated in the group data.

While no computer transmission is perfectly secure, reasonable efforts will be made to protect the confidentiality of your transmissions. To further protect your responses, it is recommended that you close the Internet browser once you have completed this survey.

Participation: Your participation is entirely voluntary, and you may withdraw from the pilot study at any time and for any reason. If you decide not to participate or if you withdraw from the pilot study, there is no penalty or loss of benefits to which you are otherwise entitled. There are no costs to you or any other party for participating in this research.

If you current meet the above criteria please move on to the first question. Thank you!

Confidential

Page 2 of 8

I have read the confidentiality and disclosure statement and agree to participate in the following survey.

- Yes
- No

Training

The following questions ask you to tell us more about the training that you received this past year or would like to receive in the future.

Review the following list of training opportunities. Select three (3) from the list that you used the most to learn how to do your job (check only 3).

- university for credit course
- online course not for college credit
- observation of teacher or other staff members
- coaching/training from teachers or staff members
- workshop/ in-service
- reading self-study materials such as a handbook, procedures guide, or workbook
- prior job experience
- comprehensive training program
- trial and error
- initial job training for paraprofessionals
- other

Other: Please Specify _____

If given a choice, which of these training experiences would you find the most helpful to learn new skills?

	Not Helpful	Somewhat Helpful	No Opinion	Helpful	Most Helpful
College/university coursework paid for by the division	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Online training or classes not for college credit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Observing other effective teachers or staff members	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monthly meetings with my teacher about specific topics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Workshops- short trainings on a specific topic (such as half day or less)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Immersion sessions- intensive study on one topic (such as 1-2 days)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Small group training meeting many times over the year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Self-study materials such as a handbook, procedure guide, or workbook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Problem solving with my teacher(s) or other staff around a specific student, situation, or activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comprehensive training program covering many areas of being a paraprofessional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other: _____

Things that discourage you from going to training:

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
The subjects covered in trainings rarely pertain to my job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The number of hours of extra work involved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training times conflict with other responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are no incentives for me to attend trainings (e.g. pay raises, comp. time, bonus money, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am not paid for the hours that I attend training outside of the school day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are not regularly scheduled trainings for paraprofessionals in my division	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not have internet access at home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is no time during the school day for me to receive training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other: _____

Which statement best describes you (check only one answer):

- My school division provides training and I feel well qualified to complete my job.
- My school division does not provide training however I feel well qualified to complete my job.
- My school division provides training however I still feel unprepared to complete my job.
- My school division does not provide training and I feel unprepared to complete my job.

Autism Spectrum Disorders (ASD)

This section will ask you to rate your level of need regarding training for the specific teaching practices for students with ASD.

What is your level of need for training in communication supports for students with ASD?

- No Need
- Some Need
- Moderate Need
- High Need
- I Don't Know

If you could only pick one communication strategy, which one do you need the most training in?

- Voice Output Communication Aid (VOCA)
- Communication Opportunities
- Functional Communication Training (FCT)
- Picture Exchange Communication System (PECS)
- Other

Other: Please Specify _____

What is your level of need for training in social skills strategies for students with ASD?

- No Need
- Some Need
- Moderate Need
- High Need
- I Don't Know

If you could only pick one social skills strategy, which one do you need the most training in?

- Peer tutoring
- Video modeling
- Social Narratives
- Other

Other: Please Specify _____

What is your level of need for training in behavior supports for students with ASD?

- No Need
- Some Need
- Moderate Need
- High Need
- I Don't Know

If you could only pick one behavior strategy, which one do you need the most training in?

- Positive reinforcement strategy
- Behavior as communication
- Functional Behavior Assessment (FBA)
- Other

Other: Please Specify _____

What is your level of need for training in instructional strategies for students with ASD?

- No Need
- Some Need
- Moderate Need
- High Need
- I Don't Know

If you could only pick one instructional strategy, which one do you need the most training in?

- Visual supports
- Task analysis
- Prompting
- Structured work systems
- Other

Other: Please Specify

Demographics

Please provide us some information about yourself.

How many years have you worked with students with ASD? _____

Which of the following best describes the grade level of the students with whom you work?

- Early childhood
- Elementary
- Middle
- High

Where are you assigned the majority of the day?

- Self-contained special education
- Special education resource room
- General education classroom
- Other

Other: Please Specify _____

What is your educational level?

- Some high school did not graduate
- High school/ GED
- Some college
- 2-year college degree (Associate's)
- 4-year college degree (Bachelor's) or higher

Please tell us anything else you feel is important for us to know about: -paraprofessionals -training -students with ASD

May I contact you to participate in a follow-up interview?

- Yes
- No
(If you agree to participate in a follow up interview, the researcher will be able to view your responses connected with your name. However, this information will be kept confidential and all safeguards will be taken to ensure that your responses are not traceable back to you.)

If yes, how can I contact you? _____

(Provide your first name AND either a valid phone number or email address)

YES! I would like to be entered into the drawing to win a \$10.00 Walmart gift card. Please contact me at: Please provide a valid phone number or email address

_____ (This drawing is optional. If you would prefer for your responses to remain anonymous to the researcher, you do not have to participate in the gift card drawing. If you do choose to enter the drawing, all of your personal information will be kept confidential.)

Training for Paraprofessionals Supporting ASD Survey- Teacher Pilot

Survey Introduction:

Thank you for taking the time to complete this survey. This survey will provide information needed to develop professional development for paraprofessionals supporting students with ASD. Please carefully consider each question, providing an honest response.

To participate in the survey you must meet the following criteria:

-You must be currently employed in a prek-12 educational institution in Virginia.

-If you are currently employed as a special education teacher you must have provided support to at least one student with ASD on a daily basis within the past year.

-The student(s) with autism meets the educational criteria of autism as outlined in the Individuals with Disabilities Education Act (IDEA). This definition is as follows: a developmental disability significantly affecting verbal and nonverbal communication and social interaction, usually evident before age 3, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences (34 C.F.R. 300.7(c)(1)).

Prior to completing this survey, please read this statement:

If you agree to participate, you will be asked to take an internet-based survey. This survey should take approximately 15 minutes of your valuable time.

Risks: There are no foreseeable risks for participating in this research.

Benefits: This survey will help in the development of future training for paraprofessionals supporting students with Autism Spectrum Disorders.

Confidentiality: All data collected from this web-based survey will be kept confidential. Names and other identifiers will not be placed on surveys or other research data. Your responses will not be identified with you personally. No individual demographic information will be shared, and all information will be incorporated in the group data.

While no computer transmission is perfectly secure, reasonable efforts will be made to protect the confidentiality of your transmissions. To further protect your responses, it is recommended that you close the Internet browser once you have completed this survey.

Participation: Your participation is entirely voluntary, and you may withdraw from the pilot study at any time and for any reason. If you decide not to participate or if you withdraw from the pilot study, there is no penalty or loss of benefits to which you are otherwise entitled. There are no costs to you or any other party for participating in this research.

If you current meet the above criteria please move on to the first question. Thank you!

I have read the confidentiality and disclosure statement and agree to participate in the following survey.

- Yes
- No

Training

The following questions ask you to tell us more about the training that you received this past year or would like to receive in the future.

Review the following list of training opportunities. Select three (3) from that list that you believe your paraprofessionals used the most to learn how to do their job (check only 3).

- university for credit course
- online course not for college credit
- observation of teacher or other staff members
- coaching/training from teachers or staff members
- workshop/ in-service
- reading self-study materials such as handbook, procedures guide, or workbook
- prior job experience
- comprehensive training program
- trial and error
- initial job training for paraprofessionals
- other

Other: Please Specify _____

If your paraprofessionals were given a choice, which of these training experiences would they find the most helpful to learn new skills?

	Not Helpful	Somewhat Helpful	No Opinion	Helpful	Most Helpful
College/university coursework paid for by the division	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Online training or classes not for college credit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Observing other effective teachers or staff members	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monthly meetings with their teacher about specific topics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Workshops- short trainings on a specific topic (such as half day or less)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Immersion sessions- intensive study on one topic (such as 1-2 days)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Small group training meeting many times over the year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Self-study materials such as a handbook, procedure guide, or workbook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Problem solving with their teacher(s) or other staff around a specific student, situation, or activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comprehensive training program covering many areas of being a paraprofessional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other: Please Specify _____

Things that discourage your paraprofessionals from going to training:

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
The subjects covered in the trainings rarely pertain to their job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The number of hours of extra work involved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training times conflict with other responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are no incentives for them to attend trainings (e.g. pay raises, comp. time, bonus money, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are not paid for the hours that they attend training outside of the school day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are not regularly scheduled trainings for paraprofessionals in my division	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They do not have internet access at home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is no time during the school day for them to receive training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: Please Specify	<hr/>				

Paraprofessional Training

How you learned to support and train paraprofessionals on your team (check all that apply):

- Real-life experience
- School or division training on paraprofessional supervision
- Part of a college or university course was devoted to supervision of paraprofessionals
- An entire university course was devoted to supervision of paraprofessionals
- Virginia Department of Education training materials
- Other resources (such as internet resources or books)

How often are you able to provide support and training to your paraprofessionals?

- Daily
- Weekly
- Monthly
- Less than Monthly
- I don't provide support or training to paraprofessionals on my team

Which statement best describes your paraprofessionals:

- My school division provides paraprofessionals training and I feel they are well qualified to complete their jobs.
- My school division does not provide paraprofessionals training however I feel they are well qualified to complete their jobs.
- My school division provides paraprofessionals training however I still feel they are unprepared to complete their jobs.
- My school division does not provide paraprofessionals training and I feel they are unprepared to complete their jobs.

Autism Spectrum Disorders (ASD)

This section will ask you to rate your paraprofessionals' level of need regarding training for specific teaching practices for students with ASD.

For the paraprofessionals on your team, what is the level of need for training in communication supports for students with ASD?

- No Need
- Some Need
- Moderate Need
- High Need
- I Don't Know

If you could only pick one communication strategy, which one do your paraprofessionals need the most training in?

- Voice Output Communication Aid (VOCA)
- Facilitating communication opportunities throughout the day
- Functional Communication Training (FCT)
- Picture Exchange Communication System (PECS)
- Other

Other: Please Specify _____

For paraprofessionals on your team, what is the level of need for training in social skills strategies for students with ASD?

- No Need
- Some Need
- Moderate Need
- High Need
- I Don't Know

If you could only pick one social skills strategy, which one do your paraprofessionals need the most training in?

- Peer tutoring
- Video modeling
- Social narratives (i.e. scripts, social stories)
- Other

Other: Please Specify _____

For paraprofessionals on your team, what is the level of need for training in behavior supports for students with ASD?

- No Need
- Some Need
- Moderate Need
- High Need
- I Don't Know

If you could only pick one behavior strategy, which one do your paraprofessionals need the most training in?

- Positive reinforcement strategy
- Behavior as communication
- Functional Behavior Assessment (FBA)
- Other

Other: Please Specify _____

For paraprofessionals on your team, what is the level of need for training in instructional strategies for students with ASD?

- No Need
- Some Need
- Moderate Need
- High Need
- I Don't Know

If you could only pick one instructional strategy, which one do your paraprofessionals need the most training in?

- Visual supports
- Task analysis
- Prompting
- Structured work systems
- Other

Other: Please Specify _____

Demographics

Please provide us some information about yourself.

How many years have you taught students with ASD? _____

How many paraprofessionals do you support or supervise? _____

Which of the following best describes the grade level of the students with whom you work?

- Early childhood
- Elementary
- Middle
- High

Where are you assigned the majority of the day?

- Self-contained special education
- Special education resource room
- General education classroom
- Other

Other: Please Specify _____

What is your educational level?

- High school/ GED
- 2- year college degree (Associate's)
- 4- year college degree (Bachelor's)
- Master's degree
- Doctoral degree

Please tell us anything else you feel is important for us to know about: -paraprofessionals -training -students with ASD

May I contact you to participate in a follow-up interview?

- Yes
- No

(If you agree to participate in a follow up interview, the researcher will be able to view your responses connected with your name. However, this information will be kept confidential and all safeguards will be taken to ensure that your responses are not traceable back to you.)

If yes, how can I contact you?

(Please provide your first name AND either a valid phone number or email address.)

YES! I would like to be entered into a drawing to win a \$10.00 Walmart gift card. Please contact me at: Please provide a valid phone number or email address.

(This drawing is optional. If you would prefer for your responses to remain anonymous to the researcher, you do not have to participate in the gift card drawing. If you do choose to enter the drawing, all of your personal information will be kept confidential.)

Survey

Survey Introduction:

Thank you for taking the time to complete this survey. This survey will provide information needed to develop future trainings for paraprofessionals supporting students with ASD. Please carefully consider each question, providing an honest response.

To participate in the survey you must meet the following criteria:

-You must be currently employed in a prek-12 educational institution in Virginia.

-If you are currently employed as a special education administrator you must have at least one student with ASD within your division.

-The student(s) with autism meets the educational criteria of autism as outlined in the Individuals with Disabilities Education Act (IDEA). This definition is as follows: a developmental disability significantly affecting verbal and nonverbal communication and social interaction, usually evident before age 3, that adversely affects a child’s educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences (34 C.F.R. 300.7(c)(1)).

Prior to completing this survey, please read this statement:

If you agree to participate, you will be asked to take an internet-based survey. This survey should take approximately 15 minutes of your valuable time.

Risks: There are no foreseeable risks for participating in this research.

Benefits: This survey will help develop future trainings for paraprofessionals supporting students with Autism Spectrum Disorders.

Confidentiality: All data collected from this web-based survey will be kept confidential. Names and other identifiers will not be placed on surveys or other research data. Your responses will not be identified with you personally. No individual demographic information will be shared, and all information will be incorporated in the group data.

While no computer transmission is perfectly secure, reasonable efforts will be made to protect the confidentiality of your transmissions. To further protect your responses, it is recommended that you close the Internet browser once you have completed this survey.

Participation: Your participation is entirely voluntary, and you may withdraw from the pilot study at any time and for any reason. If you decide not to participate or if you withdraw from the pilot study, there is no penalty or loss of benefits to which you are otherwise entitled. There are no costs to you or any other party for participating in this research.

If you current meet the above criteria please move on to the first question. Thank you!

I have read the confidentiality and disclosure statement and agree to participate in the following survey Yes No

Training

The following questions ask you to tell us more about the training your paraprofessionals in your division have received this past year or would like to receive in the future.

Review the following list of training opportunities. Select three (3) from the list that the paraprofessionals in your division used the most to learn how to do their job (check only 3).

- university for credit course
- online course not for college credit
- observation of teacher or other staff members
- coaching/training from teachers or staff members
- workshop/ in-service
- reading self-study materials such as a handbook, procedures guide, or workbook
- prior job experience
- comprehensive training program
- trial and error
- initial job training for paraprofessionals
- Other

Other: Please Specify _____

If your paraprofessionals were given a choice, which of these training experiences would they find the most helpful to learn new skills?

	Not Helpful	Somewhat Helpful	No Opinion	Helpful	Most Helpful
College/university coursework paid for by the division	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Online training or classes not for college credit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Observing other effective teachers or staff members	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monthly meetings with their teacher about specific topics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Workshops- short trainings on a specific topic (such as half day or less)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Immersion sessions- intensive study on one topic (such as 1-2 days)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Small group training meeting many times over the year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Self-study materials such as a handbook, procedure guide, or workbook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Problem solving with their teacher(s) or other staff around a specific student, situation, or activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comprehensive training program covering many areas of being a paraprofessional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other: Please Specify _____

Things that discourage paraprofessionals in your division from going to training:

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
The subjects covered in trainings rarely pertain to their job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The number of hours of extra work involved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training times conflict with other responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are no incentives for them to attend trainings (e.g. pay raises, comp. time, bonus money, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They are not paid for the hours that they attend training outside of the school day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are not regularly scheduled trainings for paraprofessionals in my division	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
They do not have internet access at home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is no time during the school day for them to receive training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: Please Specify	<hr/>				

Consider each area listed below as it relates to paraprofessionals supporting students with ASD:

Frequency of coaching and training provided by teachers to paraprofessionals

- No coaching and direction
 Little coaching and direction
 Some coaching and direction
 A lot of coaching and direction

Cost of providing paraprofessionals to students with ASD

- Cost too much with little return
 Cost a lot but with good return
 Cost a little with poor return
 Cost a little with good return

Quality of services provided by paraprofessionals

- Poor quality
 Low quality
 Some quality
 High quality

Risk associated with having paraprofessionals provide services to students with ASD

- No risk
 Little risk
 Some risk
 High risk

Which statement best describes the paraprofessionals in your division:

- My school division provides paraprofessionals training and I feel they are well qualified to complete their jobs.
 My school division does not provide paraprofessionals training however I feel they are well qualified to complete their jobs.
 My school division provides paraprofessionals training however I still feel they are unprepared to complete their jobs.
 My school division does not provide paraprofessionals training and I feel they are unprepared to complete their jobs.

If you feel that your paraprofessionals are unprepared, what are your division's plans for increasing paraprofessional knowledge and skills?

Approximately how many students with ASD have one-on-one paraprofessional support in your school division?

- 0-25%
 26-50%
 51-75%
 76-100%

Autism Spectrum Disorders (ASD)

This section will ask you to rate your paraprofessionals in your division's level of need regarding training for the specific teaching practices for students with ASD.

For paraprofessionals in your division, what is the level of need for training in communication supports for students with ASD?

- No Need
- Some Need
- Moderate Need
- High Need
- I Don't Know

If you could only pick one communication strategy, which one do your paraprofessionals need the most training in?

- Voice Output Communication Aid (VOCA)
- Facilitating communication opportunities throughout the day
- Functional Communication Training (FCT)
- Picture Exchange Communication System (PECS)
- Other

Other: Please Specify _____

For paraprofessionals in your division, what is the level of need for training in social skills strategies for students with ASD?

- No Need
- Some Need
- Moderate Need
- High Need

If you could only pick one social skills strategy, which one do your paraprofessionals need the most training in?

- Peer tutoring
- Video modeling
- Social narratives (i.e. scripts, social stories)
- Other

Other: Please Specify _____

For paraprofessionals in your division, what is the level of need for training in behavior supports for students with ASD?

- No Need
- Some Need
- Moderate Need
- High Need

If you could only pick one behavior strategy, which one do your paraprofessionals need the most training in?

- Positive reinforcement strategies
- Behavior as communication
- Functional Behavior Assessment (FBA)
- Other

Other: Please Specify _____

For paraprofessionals in your division, what is the level of need for training in instructional strategies for students with ASD?

- No Need
- Some Need
- Moderate Need
- High Need

If you could only pick one instructional strategy, which one do your paraprofessionals need the most training in?

- Visual supports
- Task analysis
- Prompting
- Structured work systems
- Other

Other: Please Specify _____

Demographics

Please provide us some information about yourself.

How many years TOTAL have you been in the field of education? _____

What is your educational level?

- Some college
- 2-year college degree (Associate's)
- 4-year college degree (Bachelor's)
- Master's degree
- Doctoral degree

Please tell us anything else you feel is important for us to know about: -paraprofessionals -training -students with ASD

May I contact you to participate in a follow-up interview?

- Yes
- No
(If you agree to participate in a follow up interview, the researcher will be able to view your responses connected with your name. However, this information will be kept confidential and all safeguards will be taken to ensure that your responses are not traceable back to you.)

If yes, how can I contact you?

(Please provide your first name AND either a valid phone number or email address.)

Appendix E

Interview Questions for Leveled Paraprofessionals

Hello, this is Kira Austin with VCU. You indicated that you were interested in participating in a follow-up interview from the paraprofessional survey. Is now still a good time to talk?

Great. This interview will just ask a few more in-depth questions about your experiences as a paraprofessional. The information provided will be used as a part of research study at VCU. All your identifying information such as your name, phone number, or where you work will be kept confidential and not included in any materials related to the study.

You don't have to answer any question you don't want to, and you can end the interview at any time. The interview takes only about 30-45 minutes and again any information you give me will be confidential. If you have questions about this survey, I can email you more information about the study and its approval from the university.

Would you still like to continue with the interview?

Proposed Interview Questions

1. Hiring Practices
 - a. What information or training were you provided when you were hired?
 - b. What makes a paraprofessional a good fit for working with students with ASD?
 - c. Do you think you would have felt more prepared for your job if you were given initial training?
2. Why did paraprofessionals select these choices as their top training needs?
 - i. communication opportunities throughout the day
 - ii. social narratives
 - iii. FBA
 - iv. structured work systems
 - b. Do they already feel competent in the other practices?
 - c. Do they know what these practices are?
3. Training Format:
 - a. Most paras ranked online courses low as a preferred training format. Why would an online course not be your preferred format?
 - b. What would you expect regular paraprofessional training to be like and on what topics?
 - c. Who do you feel should be responsible for providing training to paraprofessionals?
4. Training Barriers:
 - a. What are the barriers that prevent you from problem solving with other staff or regularly working with your teacher?
 - b. What changes could be made that would give you this opportunity?
 - c. If Virginia implemented a tiered level of paraprofessional training would you be interested in pursuing higher levels for higher pay?

- d. Do you think paraprofessionals should be required to hold a license of some sort to work in schools?
 - e. With the current state of school budgets, would you be willing to attend trainings if you were compensated with things other than pay? If so, what kinds of compensation?
5. Current Practices:
- a. How are teachers providing you training and support while on-the-job? What does that look like?
 - b. How do you know if you're doing your job correctly or incorrectly?
6. For Level 1 Paras only:
- a. Is your division compensating you for attending training?
 - b. Were you provided initial training upon hire?
 - c. Is there regularly scheduled training within your division?
 - d. Do you feel like these practices have helped you to feel more qualified to complete your job?
7. For Level 2 Paras only:
- a. You indicated you feel qualified to complete your job without receiving training. Why do you feel that way? Have you attended any training in the past?
 - b. Would you like to attend training in the future if it were made easily available? If so, what format would you prefer?
8. For Level 3 Paras only:
- a. You indicate that you have been trained and yet don't feel qualified. Why do you feel that way? What kind of training have you received in the past?
 - b. What kind of training do you feel like you still need in order to feel more qualified to complete your duties?
9. For Level 4 Paras only:
- a. How are you currently determining what strategies and practices to use with students with ASD?
 - b. How have you learned to do your job?

Appendix F

Expert Review and Pilot Feedback Form

Dear Sir or Madam:

I would like to formally thank you for agreeing to review the instrument *Survey of Professional Development for Paraprofessionals Supporting ASD*. Enclosed please find a copy of the research questions that guide this study, the cover letter, and the actual survey instrument. Please review the cover letter, respond to the survey instrument, and provide your comments on the questions below. Please use the survey instrument's margins to provide additional comments on specific items of the survey. When you complete the surveys and the questions below, please mail, email, or fax all documents to the researcher.

1. Did you find any of the survey items unclear? Yes No
If yes, which items were unclear and how would you change them?

2. Were the directions regarding how to respond to the survey clear? Yes No
If no, what changes would you recommend for improving the directions?

3. After reading the cover letter, would you be persuaded to respond to the survey?
 Yes No

4. Did you find the format and layout of the survey easy to follow and pleasing?
 Yes No

5. How long did it take you complete the survey?

6. Please feel free to write below any suggestions for improving the survey and/or the cover letter.

Thank you for taking the time to review these materials. Your input is highly valuable in creating a user-friendly valid instrument. Please return all materials to the researcher, Kira Austin.

With sincerest thanks,

Kira Austin, Ph. D. Candidate
Virginia Commonwealth University
10 East Franklin St. Suite 200
Richmond, VA 23284
(804) 827-1403
Fax: (804) 828-7495
kmaustin@vcu.edu

Appendix G

Pre-notice Email to Directors of Special education

Dear Director of Special Education,

As a doctoral candidate in Virginia Commonwealth University's School of Education, I am conducting a research study about the professional development of paraprofessionals supporting students with autism spectrum disorders (ASDs).

In a few days you will receive an email requesting your participation in a survey on the professional development experiences that are available to paraprofessionals supporting students with ASD. Earlier this year the Virginia legislature passed a law requiring all paraprofessionals supporting students with ASD to be trained by September 2014. Your participation in this survey will allow you to give input towards future paraprofessional training.

I am asking special education administrators, special education teachers, and paraprofessionals to all participate in this study and provide their perspective. **I'm personally appealing to you for assistance in forwarding this email on to special education teachers and paraprofessionals in your school division.** The survey is web-based and each job position has its own link.

This survey should take approximately 15 minutes to complete. I greatly appreciate the effort and time you invest in completing this survey. Your input is very important. Should you have questions, please feel free to contact me. Thank you for your time and attention.

Very Sincerely,
Kira Austin, Ph. D. Candidate
Virginia Commonwealth University
10 East Franklin St. Suite 200
Richmond VA 23284
(804) 827-1403
kmaustin@vcu.edu

Appendix H

Survey Email Invitation to Directors of Special education

Dear Director of Special Education,

As a doctoral candidate in Virginia Commonwealth University's School of Education, I am conducting a research study about the professional development of paraprofessionals supporting students with autism spectrum disorders (ASDs).

I am requesting your participation in a survey on the professional development experiences that are available to paraprofessionals supporting students with ASD within your division.

Earlier this year the Virginia legislature passed a law requiring all paraprofessionals supporting students with ASD to be trained by September 2014. Your participation in this survey will allow you to give input towards future paraprofessional training.

I am asking special education administrators, special education teachers, and paraprofessionals to all participate in this study and provide their unique perspective. Please click on the link below to provide your own perspective as a director of special education.

If you are a **DIRECTOR OF SPECIAL EDUCATION** the survey is at the following URL:
<https://redcap.vcu.edu/rc/surveys/?s=9gUhfl>

I am also personally appealing to you for assistance in forwarding a second email to special education teachers and paraprofessionals in your school division. The survey is web-based and each job position has its own link. Your help in this matter will ensure that the perspectives and needs professionals in your division are represented to the state as they develop trainings.

This survey should take approximately 15 minutes to complete. I greatly appreciate the effort and time you invest in completing this survey. Your input is very important. Should you have questions, please feel free to contact me. Thank you for your time and attention.

Very Sincerely,
Kira Austin, Ph. D. Candidate
Virginia Commonwealth University
10 East Franklin St. Suite 200
Richmond VA 23284
(804) 827-1403
kmaustin@vcu.edu

Appendix I

Survey Email Invitation to Special Education Teachers and Paraprofessionals

Dear Educational Professional,

As a doctoral student in Virginia Commonwealth University's School of Education, I am conducting a research study about the professional development of paraprofessionals supporting students with autism spectrum disorders (ASDs).

I am requesting your participation in a survey on the professional development experiences that are available to paraprofessionals supporting students with ASD. Earlier this year the Virginia legislature passed a law requiring all paraprofessionals supporting students with ASD to be trained by September 2014. Your participation in this survey will allow you to give input towards future paraprofessional training.

I am asking you to participate in this study and provide your unique perspective. The survey is web-based and each job position has its own link. Please select the link that best describes your position.

If you are a **PARAPROFESSIONAL** the survey is at the following URL:

<https://redcap.vcu.edu/rc/surveys/?s=MakE8J>

If you are a **SPECIAL EDUCATION TEACHER** the survey is at the following URL:

<https://redcap.vcu.edu/rc/surveys/?s=iqQNoP>

This survey should take approximately 15 minutes to complete. I greatly appreciate the effort and time you invest in completing this survey. To thank you for your time, I have purchased 100 Walmart gift cards. At the end of the survey you may enter a drawing to receive one of these \$10.00 cards! Your input is very important. Should you have questions, please feel free to contact me. Thank you for your time and attention.

Very Sincerely,
Kira Austin, Ph. D. Candidate
Virginia Commonwealth University
10 East Franklin St. Suite 200
Richmond VA 23284
(804) 827-1403
kmaustin@vcu.edu

Appendix J

Informed Consent Statement

Survey Introduction:

Thank you for taking the time to complete this survey. This survey will provide information about the professional development needs of paraprofessionals. Please carefully consider each question, providing an honest response.

To participate in the survey you must meet the following criteria:

- You must be currently employed in a prek-12 educational institution in Virginia
- If you are currently employed as a paraprofessional you must have provided support to at least one student with ASD on a daily basis within the past year.
- If you are currently employed as a special education teacher, you must have had at least one student with ASD on your caseload within the past year.
- If you are currently employed as a special education administrator, you must have at least one student with ASD enrolled in your division within the past year.
- The student(s) with autism meets the educational criteria of autism as outlined in the Individuals with Disabilities Education Act (IDEA). This definition is as follows: a developmental disability significantly affecting verbal and nonverbal communication and social interaction, usually evident before age 3, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences (34 C.F.R. 300.7(c)(1)).

Prior to completing this survey, please read this statement:

If you agree to participate, you will be asked to take an internet-based survey. This survey should take approximately 15 minutes of your valuable time.

Risks: There are no foreseeable risks for participating in this research.

Benefits: This survey will help the development of trainings for paraprofessionals supporting students with Autism Spectrum Disorders.

Confidentiality: All data collected from this web-based survey will be kept confidential. Names and other identifiers will not be placed on surveys or other research data. Your responses will not be identified with you personally. No individual demographic information will be shared, and all information will be incorporated in the group data.

While no computer transmission is perfectly secure, reasonable efforts will be made to protect the confidentiality of your transmissions. To further protect your responses, it is recommended that you close the Internet browser once you have completed this survey.

Participation: Your participation is entirely voluntary, and you may withdraw from the study at any time and for any reason. If you decide not to participate or if you withdraw from the study, there is no penalty or loss of benefits to which you are otherwise entitled. There are no costs to you or any other party for participating in this research.

Kira M. Austin

Vita

3113 Hey Road, Richmond VA 23224

kmaustin@vcu.edu

Education

- Present Ph. D. *Virginia Commonwealth University*
A.B.D. • Specialization in Special Education and Disability Policy
 • Defense scheduled for April 2013
 • Dissertation to be defended: “Training needs of paraprofessionals supporting students with autism spectrum disorders.”
- 2009 M. Ed. *Virginia Commonwealth University*
 • Special Education
 • Specialization and license in Intellectual Disabilities K-12, 3.8 GPA
- 2007 B. S. *Liberty University*
 • Psychology
-

Academic Appointments and Other Significant Work Experience

2011 - Present

Program Specialist, *Virginia Department of Education’s Training and Technical Assistance Center at Virginia Commonwealth University*
Richmond, VA

2007 - 2011

Special Education Teacher, *Chesterfield County Public Schools*
Midlothian, VA

Bibliography

Refereed Publications

Thoma, C.A., Austin, K., Achola, E., Batalo, C., Carlson, D., Boyd, K., Bozeman, L., & Wolfe, D. (2012). The state of postsecondary education for persons with intellectual disabilities: What are the perceptions of key stakeholders? *Creative Education*, 3, 1122-1129. doi: 10.4236/ce.2012.326168.

Thoma, C. A., Lakin, K. C., Carlson, D., Domzal, C., Austin, K., & Boyd, K. (2011). Participation in postsecondary education for students with intellectual disabilities: A review of the literature 2001-2010. *Journal of Postsecondary Education & Disability*, 24(3), 174-191.

Books/ Book Chapters

Austin, K. M., & Wittig, K. M. (2012). Individualized transition planning: Building the roadmap to adulthood. In P. Wehman, *Life beyond the classroom: Transition strategies for young people with disabilities* (5th ed.). Baltimore: Paul H. Brookes.

Thoma, C. A., Boyd, K., & Austin, K. M. (2012). Teaching for Transition. In P. Wehman, *Life beyond the classroom: Transition strategies for young people with disabilities* (5th ed.) (pp.201-236). Baltimore: Paul H. Brookes.

Papers Presented

Austin, K. M. (2013, April). *Training needs of paraprofessionals: Why are we not supporting our support providers?* Paper accepted for presentation at The Council for Exceptional Children's 2013 Convention. San Antonio, TX.

Thoma, C. A., Boyd, K., Austin, K., Tamura, R. (2013, January). *Similarities and differences between PSE programs for students with ID.* Paper presented at the Council for Exceptional Children's Division on Autism and Developmental Disabilities 14th Annual Conference. Kona, HI.

Austin, K. M. (2012, November). *Paraprofessionals in inclusive settings: Why are we not supporting our support providers?* Poster session presented at the 2012 TASH Conference. Long Beach, CA.

Courses Taught

Spring 2011

Co-Instructor for graduate level course, Trends in Special Education, with Dr. Paul Wehman at Virginia Commonwealth University.

Fall 2011

Instructor for graduate level course, Externship for Special Education General at Virginia Commonwealth University.

Honors and Awards

2012 Phi Kappa Phi Membership

2010 Swift Creek Middle Teacher of the Year Nominee

2010 LeEtta Pratt Merit Scholarship Recipient

2008 Autism Society of Central Virginia Autism Awareness Award Recipient

Service

2012 Guest manuscript reviewer, *Remedial and Special Education*

2012 Building Bridges II: Developmental Disabilities in Racially, Culturally, and Linguistically Diverse Communities Conference planning committee, member

2012 Insight 2012: Topics in Autism Conference planning committee, Chair

2012 Special Education Doctoral Student Seminar Series, Chair

2012 Communities of Learning in Autism 2012 Summer Institute planning committee, member
