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The Perspectives of Teachers on Intervention Strategies Used in Inclusive Settings With Elementary-Aged Children With Autism

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THE PERSPECTIVES OF TEACHERS ON INTERVENTION STRATEGIES
USED IN INCLUSIVE SETTINGS
WITH ELEMENTARY-AGED CHILDREN WITH AUTISM

A Dissertation

Submitted to the School of Graduate Studies and Research

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Requirements for the Degree

Doctor of Education

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With the increasing number of children being diagnosed with autism and the influx of these students in the public school system, the percentage of students receiving services will continue to multiply over the next several years. As a result, public education must be prepared to properly execute intervention strategies by using effective inclusion models to incorporate appropriate accommodations and placements for elementary-aged children with autism.

The purpose of this qualitative study was to examine the perspectives of elementary teachers on the implementation of intervention strategies in inclusive settings with elementary-aged children with autism and to determine how those strategies and effective treatment plans could assist with developmental delays in the areas of communication, socialization, and repetitive behaviors. After evaluating the data, recommendations were made to administrators, general education teachers, and parents of children with autism. Based on the feedback received from the eight highly qualified teachers, the recommendations included methods to improve the implementation of intervention strategies for children with autism in the school, home, and community. Their suggestions support the ideas which were guided by Phillip Strain's LEAP Inclusion Model, Albert Bandura's Social Learning Theory, and Lynne Cook's version of the Co-Teaching Models between general and special education teachers.

The results from this study demonstrated there are fundamental strategies and best practices that are important and can be implemented to allow children with autism to be

successful, there needs to be more formal training and instruction for general education teachers on intervention strategies and inclusionary and co-teaching practices, there is a strong belief that children with autism can learn a substantial amount through inclusion with their typical peers, and there is significant commitment on behalf of support teachers to implement new strategies, interventions, and supports for their students with autism.

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CHAPTER 1

THE PROBLEM

Introduction

Autism Spectrum Disorder (ASD) is a neurological disorder that affects the functioning of the brain (Corsello, 2005). Autism is usually diagnosed in early childhood and behaviors can be categorized into three areas of development and/or deficit: communication, social interaction, and restricted patterns of behavior (American Psychiatric Association, 2000; Corsello, 2005; Hilton et al., 2010; Safe Minds, 2012). ASD affects “3.5 million individuals in the United States and tens of millions worldwide” (Autism Speaks, 2014a, p. 2; Ostrow, 2014). Furthermore, government statistics advise that widespread rates for autism have “increased 10 to 17 percent annually in recent years” (Autism Speaks, 2014a, p. 1). According to the Center for Disease Control and Prevention (CDC) (2014a), about 1 percent of the world population has autism spectrum disorder. This new estimate is roughly 30 percent higher than previous estimates (James, 2014). In Pennsylvania alone, there are approximately 21,300 children diagnosed with autism (Costlow, Lave, & Garfield, 2014). CDC (2014) reports that prevalence in autism in U.S. children increased by 119.4 percent from 2000 (1 in 150 diagnosed) to 2014 (1 in 68 diagnosed). These rates make ASD more common than pediatric cancer, diabetes, and acquired immunodeficiency syndrome (AIDS) combined (Whelan, 2009). There is no definitive explanation for the increase in rates of diagnosis; however, improved awareness and environmental factors are often stated as potential reasons (Autism Speaks, 2014a; James, 2014).

Ostrow (2014) reports autism services cost U.S. citizens \$236-262 billion annually. A majority of the costs in the U.S. are in adult services - \$175-196 billion, as compared to \$61-66 billion for children. In Pennsylvania, children with autism can incur medical care costs that

exceed \$29,000 per person per year, while non-medical care costs can exceed \$38,000 per person per year. The cost of services can be covered by paying out of pocket, qualifying for medical assistance, or through private insurance (Costlow, Lave, & Garfield, 2014). Cost of lifelong care can be reduced by 2/3 with early diagnosis and intervention (Bascetta, 2014).

There are no boundaries in the diagnosis of autism in terms of racial, ethnic, economic, educational, or social background; it can affect any child and any family (Safe Minds, 2012). Although research suggests autism is a neurodevelopment disorder, there is not a definitive biological test or marker to diagnose it (Abrahams & Gershwind, 2008). A diagnosis is dependent upon both the observations and descriptions of behavior and these resources rely primarily on reports by parents, healthcare providers, and teachers.

Given the different needs of a child with autism, what are the best interventions and instructional techniques needed to help them? The needs depend on the diagnosis of each individual child. People with autism display many common characteristics, but the diagnosis does not mean that all characteristics will be present. There are certain behaviors that define autism and those behaviors affect individuals differently by capricious levels (Autism Society, 2012).

Autism, the word itself, was used in the early 1900s by psychologists to describe children who were unable to interact socially and who were self-absorbed. As early as 1940, researchers began to describe children as having autism if they had both social and emotional problems. Although the term had been used previously, autism was officially described by Dr. Leo Kanner in 1943. He was the first child psychiatrist in the country, and he observed 11 children who were exhibiting the same behavior. According to Kanner (1943), the children appeared to exhibit an ‘inborn disturbance of affective contact’. He meant that the children were born without the usual

interest in others, as compared to normal babies who were interested in others. Kanner believed that children with autism were born without the ability to deal with the social world around them (Volmar & Wiesner, 2009). In 1944, Hans Asperger described four children in his care that had serious difficulty interacting socially, and he labeled this deficiency as “autistic psychopathy” and defined it as social isolation. In the 1960s, Kanner used the phrase “refrigerator mothers” because he believed the condition of autism was caused by cold, unloving mothers. “Bruno Bettelheim, a professor of child development, perpetuated this misinterpretation of autism. Their promotion of the idea that unloving mothers caused autism created a generation of parents who carried tremendous guilt” over the misconception of the mother-child relationship (Autism Speaks, 2014b, p. 2; Fombonne, 2003; Hughes-Lynch, 2012). Dr. Bernard Rimland, in his book *Infantile Autism*, was the first authoritative voice to challenge Bettelheim’s view. He proposed that autism was caused by neurological and physiological factors (Hughes-Lynch, 2012). Although the causes of autism are complex, it is clear that it is not caused by poor parenting. Often times families go through a myriad of feelings when coming to grips with a child’s diagnosis of autism. They often feel disconnected and sometimes even misled by well-meaning professionals, and they can feel isolated and alone as well (Altiere & Von Kluge, 2009; The Early Learning Institute, 2014b). Like the child diagnosed with autism, families often experience stress, disappointment, frustration, and helplessness. The family stress can not only affect the development of the special needs child, but it can also impact the well-being of the family (Therapeutic Early Intervention Services, 2014c).

In 1980, The American Psychiatric Association (APA) published the first official clinical definition of autism in the Diagnostic and Statistical Manual of Mental Disorders (DSM). Although Dr. Kanner and Hans Asperger first described the disorder in the 1940s, and the DSM

identified it as a disorder in the 1980s, autism was not recognized by the U.S. Department of Education as a serious, debilitating condition until 1991 (Ruble & Dalrymple, 2002).

Children with autism have the best outcomes when there is early identification and intensive intervention (Samms-Vaughan & Franklyn-Banton, 2008). There is not a specific behavior or marker that can identify individuals with autism, nor is there one exclusive treatment plan that will be applicable for all children. It is imperative, however, that interventions begin as soon as possible and the treatment plan should be designed for the child's individual strengths, weaknesses, and exclusive needs (Hughes-Lynch, 2012). As parents, teachers, and therapists collaborate to determine the best strategies for each child, the outcome could very possibly lead to a less restrictive environment and a manageable prognosis for the future.

Theoretical Position

There are several techniques considered to be effective strategies in assisting children diagnosed with autism. These techniques offer great insight and can be examined through Phillip Strain's LEAP Inclusion Model, Albert Bandura's Social Learning Theory, and Lynne Cook's version of the Co-Teaching Models between general and special education teachers..

Learning Experiences: An Alternative Program for Preschoolers and Parents (LEAP) was developed by Dr. Phil Strain in 1981 to provide an early childhood program focused on inclusive practices for young children with autism and their families. The first site was in Pittsburgh, Pennsylvania, and was federally funded as a model demonstration program. At this time, "LEAP stands as the only empirically validated inclusion model for the education of young children with autism" (Teacher's Toolbox, 2012, p.1). Dr. Strain has since overseen a number of replication sites across the United States. As part of this outreach program, he developed the Quality

Inclusion Curriculum to help other programs improve their outcomes for children with autism (Teacher's Toolbox, 2012).

The LEAP program reflects both a behavioral and developmental approach for teaching children with autism because it focuses on the interaction and play with typically-developing peers. The curriculum is supplemented with activities and instructional strategies specifically for the development of functional skills, independent play and work skills, social interaction skills, language skills, and adaptive behavior (The Watson Institute, 2013).

Just as Dr. Strain focused on the interaction and play between children with autism and their typical peers, Dr. Albert Bandura also suggested a similar theory which focused on the observation of peers. Dr. Bandura proposed a social learning theory that indicates behavior is learned "from the environment through the process of observational learning" (McLeod, 2011, p.1). This theory has become one of the most instrumental theories of learning and development (Cherry, 2014). Bandura (1977) states:

Learning would be exceeding laborious, not to mention hazardous, if people had to rely solely on the effect of their own actions to inform them what to do. Fortunately, most human behavior is learned observationally through modeling: from observing others, one forms an idea on how new behaviors are performed, and on later occasions this coded information serves as a guide for action. (p. 22)

According to this theory, people can learn new behaviors through observational learning in a social environment. If a behavior is observed as a positive, desired outcome, then people are more likely to imitate an interaction, model what they see, and replicate the perceived behavior (Cherry, 2014; McLeod, 2011; Sincero, 2011). Therefore, children diagnosed with autism will

benefit from this type of observational theory because they will learn from observing and imitating others in an inclusive educational setting.

School reformers have set higher standards and teachers are responsible for ensuring that students meet them. Students with disabilities and other special needs generally are expected to achieve the same success as other learners, and so there is an increased emphasis on educating them in general education settings. Educators are finding an increasing number of students come to school with a variety of problems that make them at-risk learners. Among the many ideas and options for meeting these diverse, yet somehow related challenges, one that is receiving widespread attention is co-teaching (Cook, 2004).

Co-teaching is defined as “having two or more certified educators who share instructional responsibility for a single group of students in a single classroom or workplace” (Brown, Howerter, & Morgan, 2013; Cook, 2004, p. 1; Friend & Bursuck, 2012; Ploessl & Rock, 2014; SERC, 2014; Shumway, Gallo, Dickson, & Gibbs, 2011). Although each individual’s level of participation may vary, specific content and objectives are taught with mutual ownership, pooled resources, and joint accountability (Cook, 2004).

Co-teaching utilizes instructional strategies used to deliver services to students with disabilities or other special needs as part of a philosophy of inclusive practices. As a result, they share many benefits with other inclusion strategies, including a reduction in stigma for students with special needs, an increased understanding and respect for students with special needs on the part of other students, and the development of a sense of heterogeneously-based classroom community. The students also benefit by not having to leave the classroom to receive additional services. At the same time, the special education and regular education teacher have a better

understanding of the curriculum being addressed in the classroom and the expectations for both academics and behavior (Barger-Anderson et al., 2013; Cook, 2004).

Statement of the Problem

With the growing number of children being diagnosed with autism and the influx of these students in the public school system, the percentage of students receiving services will continue to multiply over the next several years. As a result, public education must be prepared to properly execute intervention strategies by using effective inclusion models to incorporate appropriate accommodations and placements for elementary-aged children with autism. As required by IDEA and Section 504, the least restrictive environment is essential for a child's success and could decrease some of the developmental delays if instructional programs meet the needs of the child diagnosed with autism. In addition, students diagnosed with autism are guaranteed a Free and Appropriate Public Education (FAPE), which allows for free educational services. By law, these educational services must be provided by the local school district from the age of three through high school, or the age of twenty-one, whichever comes first (U. S. Department of Education, 2014).

Purpose of the Study

School districts are implementing appropriate services through different teaching strategies and classroom models to ensure the success of all children, specifically students with disabilities such as autism. This research study examined the perspectives of teachers on the effectiveness of intervention strategies used in inclusive settings and how effective treatment plans could assist with the developmental delays and evaluation of elementary-aged children diagnosed with autism.

This research study will be useful for school administrators, special education directors, special education teachers, regular education teachers, and especially for parents of children with autism. This study will provide a framework and basic understanding of the interventions available and can assist in making appropriate placement options for elementary-aged children with autism.

Research Questions

This qualitative research study was guided by the following research questions:

1. What are teachers' perspectives on the effectiveness of intervention strategies that are used with elementary-aged children diagnosed with autism?
2. What are teachers' perspectives on the effectiveness of inclusion of elementary-aged children with autism in the general education environment?
3. What are teachers' perspectives on the effectiveness of alternative methodologies used to assist with communication skills, socialization, and repetitive behaviors of elementary-aged children diagnosed with autism?

Definitions and Terms

Adaptive Behavior: Adaptive behavior is the ability to adjust to new environments, tasks, objects, and people, and apply new skills to those new situations (Bullington, 2011).

Applied Behavior Analysis (ABA): Applied behavior analysis is a method of teaching designed to analyze and change behavior in a precisely measurable and accountable manner (Kryk, 2013).

Augmentative/Alternative Communication (AAC): Alternative communication is temporary or permanent compensation techniques for individuals with severe expressive communication disorders. AAC interventions include symbols, aids, and strategies to enhance communication (Ronski & Sevcik, 2005).

Autism: Autism is defined as a developmental disability caused by neurological dysfunction. The disorder impairs behavior, social interactions, and language (Corsello, 2005).

Developmental Delay: When a child does not meet developmental milestones at the expected time, a delay can occur in one or many areas such as gross or fine motor, language, social, or thinking skills (Greenspan, Prizant, & Wetherby, 2014).

Echolalia: Echolalia is the repetition of speech produced by others. The echoed words and phrases can include the same words and exact inflections as originally heard or they may be slightly modified (Brereton, 2014).

Free and Appropriate Public Education (FAPE): FAPE is a provision of federal law which provides students who are eligible for special education with schooling as indicated on an Individualized Educational Program at no cost to the parents (U.S. Department of Education, 2014).

Functional Behavioral Assessment (FBA): FBA is a behavioral approach to assessing behavior, and a process to look beyond the interpretation of behaviors as bad and determine what function the behavior serves for the child (Mauro, 2014).

Inclusion: Inclusion is an education model in which students with disabilities receive their education in a general education setting with collaboration between the general and special education teachers (Guldborg, 2010).

Individuals with Disabilities Education Act (IDEA): IDEA is a federal law passed to ensure children with disabilities and their parents or guardians are given access to a free and appropriate public education that meets the child's needs (Barger-Anderson et al., 2013).

Intervention: Intervention includes planned strategies and activities that modify a maladaptive behavior or state of being and facilitate growth and change (Aronson-Ramos, 2014).

Least Restrictive Environment (LRE): LRE is a federal law that expresses children with disabilities must be educated to the maximum extent appropriate with children who are not disabled (Ford, 2013).

Therapy: Therapy refers to treatment (direct or consult) delivered by a licensed communication therapist, occupational therapist, physical therapist, or adaptations to the environment that will improve a student's performance (Falco, 2012).

Wraparound Services: Wraparound is a philosophy of care with defined planning process used to build constructive relationships and support networks among students and youth with emotional or behavioral disabilities. It is community based, culturally relevant, individualized, strength based, and family centered (Positive Behavioral Interventions and Supports, 2012; Walker & Bruns, 2006).

Research Design

A qualitative method was used for this study, as it best fit the need of the study. This study evaluated teachers' perspectives on the effectiveness of intervention strategies used in inclusive settings and their perspectives on any supplemental sources that can be used to assist when working with elementary-aged children with autism.

The researcher utilized a semi-structured interview design to permit the participants to respond in open-ended format. Furthermore, the researcher developed an interview protocol which assisted in answering the research questions (See Appendix A). The protocol allowed for the researcher to take notes during the process and provide participants the liberty to respond (Creswell, 2012). The interviews were recorded using a digital voice recording application and then were transcribed for analysis.

The researcher conducted individual, in-depth interviews, as well as follow-up questions when appropriate, with eight teachers who currently teach and work with children diagnosed with autism. In addition, the researcher examined a variety of other modalities and external sources, such as specialized programs, therapies, and assistive technologies in an effort to determine the significance and impact, if any, for elementary-aged children with autism.

This triangulation method allowed for the researcher to validate her research by using different data sources and corroborating from various groups of people who can offer diverse perspectives. The study was derived from multiple sources of information and individuals. The researcher also used member checking as a process to check the accuracy of the study to be sure the descriptions were clear, fair, and complete (Creswell, 2012). The researcher also utilized expert testimony as a form of triangulation. The researcher consulted experts in the field of education, special education, autism, and inclusion to help determine if the study was relevant, timely, and a good addition to the current body of research on autism. The researcher emailed the experts directly and included copies of responses in the appendix as evidence for triangulation (See Appendix B).

Limitations

Because a qualitative study approach was selected and specific teachers were the focus, there was the potential that the findings may not be easily applied to all students, intervention programs, and school districts. However, the intent of the study was to learn the perspectives of the people who work closely with elementary-aged children with autism, and their insight was very valuable and enlightening to any instructional program, outpatient service organization, or district that might be implementing new strategies and programs for children with autism.

This study specifically focused on teachers who work directly with elementary-aged children diagnosed with autism. The study provided limited resources and findings, as the interviews were conducted specifically with eight individuals.

In addition, the data collected were a result of teaching strategies and interventions used with elementary-aged children diagnosed with autism. The research clearly states the earlier a child with autism receives intervention services, the more likely the child will overcome some, if not all, of the developmental delays. Because the focus was on elementary ages, another limitation was the study was not applicable to students at the secondary level.

Finally, each child diagnosed with autism presents different skill levels and abilities; therefore, when interviewing teachers the research was very vast in nature and allowed for additional questions to be developed as they may not have appeared on the original interview protocol. Furthermore, it was necessary to expand upon the interview protocol which provided extensive material.

Summary

The number of children with the diagnosis of autism is on the rise. It is a life-long disorder that is becoming more prevalent every day. There is a strong need to unravel the complexity of the disorder, and it is very important to continue to advance research to assist children with autism to lead functional lives. The disorder remains largely mysterious even though there are numerous new treatments, interventions, and educational strategies to support children with autism.

It is imperative that educators provide instructional strategies that allow children with autism to embrace education in a way that supports their individual learning styles. It is equally important that teachers believe that children with autism have the ability to be successful as long

as those instructional strategies support the interventions required for each child. Understanding unique learning styles and teaching to students' strengths is critical.

Chapter One examined the purpose and significance of this study, research design, and limitations of this study. Chapter Two, the review of literature, will investigate the prevalence and characteristics of autism, the developmental delays and diagnosis processes, developmental markers and warning signs, screening assessments, early intervention and alternative methodologies, laws governing special education, inclusion, and co-teaching models.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Introduction

Over the past several decades there have been many changes in the world of autism, but the one important strategy that has been determined to have the most impact in helping to treat autism is the implementation of early intervention (Aronson-Ramos, 2014). This research study examined the perspectives of teachers on intervention strategies in an inclusive setting and how effective treatment plans and alternative methodologies could assist with the developmental delays of children diagnosed with autism.

This review of literature will discuss current and historical information about autism spectrum disorders. It will cover the symptoms, features, and diagnosis of the disorder, developmental markers and warning signs, screening assessments, as well as the intervention strategies and methodologies used to assist children diagnosed with autism. It will also identify some challenges that are present for teachers as they develop treatment plans and curriculum to meet the child's needs. Some challenges include the need for a multi-faceted learning environment in addition to the socialization, communication, emotional, and academic needs that are essential to the school experience. This chapter reviews the complexity of the autism disorder and diagnosis, some strategies used to educate children with autism, and the best practices and interventions that are currently being used for this population of students.

Children diagnosed with autism are unique. Autism Speaks (2014a) state “many have extraordinary abilities in visual skills, music, and academics. About 40 percent have average to above average intellectual abilities” (p. 2). Certainly, many people with autism “take deserved pride in their distinctive abilities and ‘atypical’ ways of viewing the world” (p. 2). Unfortunately,

there are individuals with autism that have considerable disabilities and they are not self-sufficient and cannot live on their own. Autism Speaks (2014a) states “about 25 percent of individuals with autism are nonverbal but can learn to communicate using other means” (p, 2). For some, this means “the development and delivery of more effective treatments that can address significant challenges in communication and physical health. For others, it means increasing acceptance, respect and support” (p.2).

This chapter is divided into 12 sections, with eight subsections, relative to the contents most associated with autism. The literature review includes the prevalence and characteristics of autism, developmental delays and diagnosis of autism, developmental markers and warning signs, screening assessments, early interventions and intervention methodologies, alternative methodologies such as sensory integration/occupational therapy, speech and communication, social interaction, nutrition, assistive technologies, wraparound services, applied behavioral analysis, and functional behavioral assessment. The review also explores the history and laws governing special education, inclusion, differentiated instruction, and co-teaching practices.

The History and Laws Governing Special Education

Understanding the past, present, and future of special education begins with realizing the depths from which the field was developed. Through examination of the former treatment of people with disabilities, it is clear that progress has been made. Yet, as educators in the early 21st century face the challenges of standardized testing, inclusion, mandatory state and federal standards, and more, it is clear that “the journey toward the improvement of education for individuals with disabilities is far from over” (Barger-Anderson, Isherwood & Merhaut, 2013, p. 4).

Before and during the 19th century, the care of individuals with disabilities was often cruel (Taylor, Smiley, & Richards, 2009). Rosenberg, Westling, and McLesky (2008) state that during this time period individuals with disabilities were believed to be a lost cause. Society was not very accepting, thought children were mentally retarded, and believed individuals with disabilities could not be helped through any type of intervention (Barger-Anderson et al., 2013). Heward (2009) noted that children with disabilities were frequently excluded from public education programs. In fact, this practice continued well into the 20th century. Before the 1970s, many states enforced laws to prohibit enrollment of some students with disabilities in public education.

Bryant, Smith, and Bryant (2008) report that the number of students with disabilities receiving instruction in pull-out programs, such as a resource room, is dwindling. The most recent statistics from the US Department of Education, National Center for Education Statistics (2011) show that 95% of all students served under the Individuals with Disabilities Education Improvement Act (IDEA) of 2004 attend their regular school district, with 58% of the population in the general education classroom for some instruction during the day, and 13% of students with multiple disabilities spending more than 50% of their day in the general education classroom.

According to Barger-Anderson et al., (2013), reformers who made great achievements in the education of people with disabilities in the 19th and 20th centuries include Samuel Howe, Dorothea Dix, Horace Mann, and Elizabeth Farrell. Samuel Howe was a graduate of Harvard Medical School in 1824, and he created the Perkins Institution and the Massachusetts School for the Blind in 1832. He also hired Laura Bridgman, who was the first deaf blind person to be educated, as a teacher at the institute.

In 1816, Dorothea Dix opened a school for girls only, known as a little dame school. At this time, girls were not permitted to attend public schools. Dix played a major role in the creation of 32 mental hospitals, and she was best known for her work with people who were incarcerated or living in poor houses. She helped establish libraries in prisons and mental hospitals, and she was influential in European care for people with mental illness in the mid 1800s (Barger-Anderson et al., 2013).

Horace Mann was known as the Father of the Common School. In 1837, he was the secretary of the Massachusetts Board of Education and ensured local taxes would provide a basic education for every child. He was instrumental in establishing the first Normal Schools in Massachusetts for teacher training, and he fought for the recruitment of women teachers (Barger-Anderson et al., 2013).

In 1900, Elizabeth Farrell started the first classes in public schools for students with disabilities in New York City. She had insightful ideas in the areas of referral processes for special education and inclusion of students with disabilities in general education classrooms. In 1912, she taught the first university-level courses for special education teacher preparation at the University of Pennsylvania. She was an advocate for the creation of professional organizations for special education teachers, and she was the founder and first president of the Council for Exceptional Children. These reformers, and many others throughout history, have contributed to the progress made in the area of improving education for individuals with disabilities (Barger-Anderson et al., 2013).

At the beginning of the 20th century, more and more advances were being made for improving the education and treatment of people with disabilities. A triumph in the history of special education was the establishment of the Council for Exceptional Children (CEC) in 1922

(Rosenberg et al., 2008). Since its inception, the organization has expanded into the largest international membership organization for professionals dedicated to promoting improvements in the education of students with disabilities and/or giftedness. CEC actively participates in providing professional development services for special educators, and CEC serves as an advocate for government policies that are fair and appropriate for students with disabilities (Council for Exceptional Children, 2010).

The creation of the United Cerebral Palsy (UCP) was another landmark event for the promotion of people with disabilities in the 20th century (Rosenberg et al., 2008). This national organization was founded in 1949 and has grown to be one of the leading health-related charities in America. UCP strives to promote independence and participation in the community, work force, and school settings. More than 170,000 children and adults with disabilities and their families receive services from UCP. These services include help with employment, housing assistance, early intervention, and more (UCP, 2010).

The Civil Rights movement for racial equality in the 1950s and 1960s had a positive impact on the field of special education (Friend & Bursuck, 2008). The U.S. Supreme Court's *Brown v. Board of Education* (1954) decision established that it's unlawful under the 14th Amendment to discriminate arbitrarily against any group of people. By the 1960s and 1970s, parents and advocates used the court decision on this case to ensure that the equal rights of students with disabilities were protected (Friend & Bursack, 2008; Smith & Tyler, 2010).

The legal process has led to significant changes in how children with disabilities are educated. Several other court cases and federal legislation have had a major impact on special education and inclusion (Barger-Anderson et al., 2013).

In *Diana v. State Board of Education* (1970), this ruling established that students who do not speak English as their first language must be assessed in their native language. The plaintiff in this case was a Spanish-speaking student who was placed in a classroom for students with disabilities based on the results of an intelligence test given in English.

In the ruling of *Pennsylvania Association for Retarded Children (PARC) v. The Commonwealth of Pennsylvania* (1971), it was established that all children, with or without disabilities, were entitled to receive a free appropriate public education (FAPE). The decision also determined that a state law denying public school education to students with disabilities, who were considered to have received no benefits from attending public school, violated the 14th Amendment. In addition, another important result from this ruling is that parents must be notified of any pending changes in their child's educational program.

The decision found in *Mills v. Board of Education of the District of Columbia* (1972), that schools' financial limitations were not a valid argument for denying educational services to students with disabilities. The case is important because it established that schools must provide services based on the needs of the students, not the schools' ability to pay for the services.

In *Board of Education of the Hendrick Hudson School District v. Rowley* (1982), the decision by the US Supreme Court established that appropriate services for students identified for receiving special education services was not optimum. In this case, the parents of a student with a hearing impairment sued the school district because it had refused their request for a sign language interpreter to assist their child in the classroom. The district argued that it had denied the request because the child was achieving at grade level without the interpreter.

The US District Court in California found that in *Larry P. v. Riles* (1984), an African American student could not be identified as having an intellectual disability based on the results

of an intelligence test that was determined to be both culturally and racially biased. In 1986, the ruling was expanded to extend the same protection to students with any type of disability.

The US Court of Appeals decision upheld a district court's ruling in *Oberti v. Board of Education of the Borough of Clementon School District* (1993), that school districts must provide students with disabilities with reasonable accommodations, including a full range of services and supports, within the general education environment to the maximum extent appropriate. The case also established that students with disabilities cannot be excluded from general education classes simply because of differences in learning needs.

When implementing intervention strategies in the public education environment, the education of children with disabilities is monitored by two federal laws. Neither require inclusion, but they both “require schools to educate students with disabilities with their peers without disabilities to the maximum extent appropriate” in the educational setting (Barger-Anderson et al., 2013, p. 20). The Individuals With Disabilities Education Act (IDEA) requires that children with disabilities be educated in the least restrictive environment (LRE) appropriate to meet their unique needs, and the IDEA indicates the LRE begins with placement in the regular education classroom (Wisconsin Education Association Council, 2013). Section 504 of the Rehabilitation Act of 1973, often referred to as a nondiscrimination law, “requires that a recipient of federal funds provide for the education of each qualified handicapped person in its jurisdiction with persons who are not handicapped to the maximum extent appropriate to the needs of the handicapped person” (Barger-Anderson et al., 2013; Wisconsin Education Association Council, 2013, p. 4).

Other federal legislation that influenced special education was the Education for All Handicapped Children Act of 1975. This legislation established the foundation for special

education practice. The law requires schools to provide all students with FAPE in the least restrictive environment and to develop an Individualized Education Plan (IEP) for every student with a disability. It also established the process for identifying and evaluating students with disabilities, and it defines specific categories of disabilities that entitle a student to receive special education services (Barger-Anderson et al., 2013; Friend & Bursuck, 2008).

Autism Disorder is identified as a disability; therefore, these children require supports in the educational setting. Based on IDEA requirements, children with autism require specific modifications in the least restrictive environment. Because there are many needs for these children, it is important to understand the prevalence of the disorder.

Prevalence of Autism

While each child develops differently, some variations may indicate a slight delay and others may be a cause for great concern. Developmental milestones enable parents and physicians to monitor a child's learning, behavior, and development. Milestones help to mark the path and progress along a child's developmental journey (ACHIEVA, 2014; Greenspan, Prizant, & Wetherby, 2014; The Early Learning Institute, 2014c).

Early intervention for children diagnosed with autism offers some hope to experience either improvement from the disorder, or in some cases, recovery from the disorder. Currently, many medical professionals routinely screen for autism-like symptoms and pointers when children are extremely young, as young as twelve months of age, in order to locate and isolate abnormalities in speech, movements, behaviors, and interests. These diagnoses are specifically implemented to determine if a child is affected by autism and to ensure the earliest diagnoses for initiation of the earliest treatment plan (Brereton, 2014; Wiseman, 2009).

By implementing coping methods and behavioral work at a young age and by incorporating children with autism into mainstream classrooms so that they can learn by modeling, children can learn and be helped before habits and behaviors associated with autism can fully take hold. By working with children before they have become adults with a lifelong comfort in their autistic behaviors, families and clinicians are better able to ensure a more rounded, socially compatible life for children who are diagnosed early with an autism disorder (The Watson Institute, 2013).

Many experts may disagree on the types of treatments and treatment plans to use in their autism work, in part because each child with autism presents a unique set of challenges and symptoms and also because of the wide variety of treatment modalities available. While some experts might embrace wrap-around services but not nutritional counseling, others might employ language and speech work but not family counseling (CDC, 2014b). Experts cited in this research agree that the earlier the intervention, the better the chance for improvement and, in some cases, recovery in and from autism (CDC, 2014b; Therapeutic Early Intervention Services, 2014c).

Characteristics of Autism

Autism Spectrum Disorder (ASD) and autism are common words or phrases used to describe developmental disabilities and complicated disorders of brain development. The characteristics of this disorder include difficulties with verbal and nonverbal communication, social interactions with others, and distinct repetitive behaviors (Aronson-Ramos, 2014; Asher et al., 2010; Autism Speaks, 2014b; Brown, Gerber, & Oliva, 2014; James, 2013; Nuner & Griffith, 2011). Additional characteristics of autism include intellectual and academic disabilities, difficulties in fine and gross motor coordination, difficulties with focusing on tasks, and other physical health issues. “Autism appears to have its roots in very early brain development;

however, the most obvious signs and symptoms of autism tend to emerge between two and three years of age” (Autism Speaks, 2014a, p. 1; Safe Minds, 2012).

According to Help Guide (2014), autism is a neurological and developmental disorder that usually appears during the first three years of life. Children with autism generally appear to be “living in their own world” with little or no cognizance of the world around them (p. 1). Because of this solitary experience, these children lack the social awareness seen in typically developing children in the same age groups.

Humpfries (2010) also suggests that children with autism are concerned with routine and tend to repeat odd and peculiar behaviors. They will likely express problems in communication, have difficulty making eye contact, even with their parents, and struggle to form attachments to other people. Because these children experience so many social limitations, including the inability to read other people’s emotions, gestures, and expressions, it is extremely difficult for these children to become involved in interpersonal relationships. Due to social limitations and difficulty in establishing relationships, children with autism may resist cuddling and do not derive comfort from physical contact. They may play alone, be resistant to change, and/or have delayed speech development. Also, they may tend to exhibit repeated body movements and rituals, such as flapping hands or rocking, and have unusual attachments to objects that include lights or moving objects and parts of objects, but are upset by noise. These children may experience speech delays and even when they do develop language skills, tend not to use language as a form of communication, but will use language to repeat words or phrases without attaching meaning; such echoing is referred to as echolalia (Brereton, 2014; Help Guide, 2014; Humpfries, 2010).

Autism can be described as a “well-defined set of symptoms” that range in severity, rather than a single disorder (The Autism Center of Pittsburgh, 2012, p.1). The symptoms that comprise autism affect the patient on a variety of levels and in a combination of areas; for instance, children with autism experience issues in the areas of thought, perception, and attention with behavior occurring across many different situations and in ways that are consistently inappropriate for their age (The Autism Center of Pittsburgh, 2012).

Autism statistics from the U.S. Centers for Disease Control and Prevention (CDC) identify around “1 in 68 American children as on the autism spectrum, which is a ten-fold increase in prevalence in forty years” (Autism Speaks, 2014a, p.1; Hoaglund, 2014b). Research also shows “this increase is only partly explained by improved diagnosis and awareness. Studies show that autism is four to five times more common among boys than girls, and an estimated 1 out of 42 boys and 1 in 189 girls are diagnosed with autism in the United States” (Autism Speaks, 2014a, p. 2; Hoaglund, 2014b).

Developmental Delays and Diagnosis

The term developmental delay is an important one in early intervention. Broadly speaking, it means that a child is delayed in some area of development. The five areas in which development may be affected are in “cognitive development, physical development, including vision and hearing, communication development, social or emotional development, and adaptive development” (Center for Parent Information and Resources, 2014; Department of Human Services Allegheny County, 2013; National Dissemination Center for Children With Disabilities, 2013, p. 3; Positive Steps Therapy, 2014).

In more recent research, there is new focus on other factors that may link to a diagnosis of ASD. There have been studies on genetic factors that found a connection to autism in 113

separate genes, and according Hughes-Lynch (2012) the Simons Foundation Autism Research Initiative puts a great deal of emphasis on the X chromosome's impact on children with autism. It is suggested that children might be created at conception with the potential for autism and it is triggered by something in the environment or a particular combination of genetic issues that can create autism (Hughes-Lynch, 2012). The Associated Press (2014) reported a small study where doctors examined brains from children who died, and they found "abnormal cell growth in autistic children" (p. 6). Clusters of disorganized brain cells were discovered in tissue samples from brain regions important for regulating social functioning, emotions, and communication – all can be problem areas for children with autism. According to the study, the clusters are likely defects that occurred during the second or third trimester of pregnancy and contribute to the biological onset of prenatal life (Associated Press, 2014).

The medical community generally agrees that a genetic predisposition, coupled with unknown environmental triggers, may be a variable; however, there is no single predictor of the condition (Associated Press, 2014; Hughes-Lynch, 2012; Whelan, 2009). Autism is likely to be caused by multiple genes on several chromosomes, and is likely associated with chromosomal deletions (Hall, 2009).

Many children diagnosed with autism have issues with digestion, diarrhea, and general bowel disturbances, and there is some evidence to indicate children are born with intestinal allergic reactions to irritants, particularly dairy, wheat, and corn (Hughes-Lynch, 2012; Seroussi, 2014; WebMD, 2014b). In addition to easily recognized organ-specific symptoms, allergic diseases can cause neuropsychiatric symptoms, such as irritability and hyperactivity, in otherwise healthy individuals. Allergic diseases are also likely to occur in children with autism. Moreover, the discomfort and pain associated with allergic diseases could aggravate behavioral

symptoms in children with autism. Allergic conditions are easily treatable; however, children with autism may be under-diagnosed and/or undertreated for allergic and other common childhood diseases, in part due to their impaired communication skills. Practicing physicians should be aware of the potential impact of allergic diseases on behavioral symptoms and cognitive activity in children with autism (Jyonouchi, 2010).

In the past, autism was not typically diagnosed in time for today's intervention protocols to be put in place; often not until late preschool and even later. Current guidelines work to identify and diagnose autism before a child reaches two years of age. The prevailing theories agree that early identification leads to more effective treatment and Asher et al. (2010), the Centers for Disease Control (2014), and Zimmer and Desch (2012), all suggest children be screened for autism and all autism spectrum disorders (ASDs) at both 18 and 24 months, even if the child appears to be developing normally. Zimmer and Desch (2012) further suggested that those children who are expressing developmental delays should receive additional testing for autism (Arnson-Ramos, 2014; Help Guide, 2014; Wiseman, 2009).

Autism Spectrum Disorder was typically diagnosed via the DSM-IV manual of the American Psychiatric Association, which listed the disorder under Pervasive Developmental Disorders (American Psychiatric Association, 2000). The DSM-IV stated that “an individual is diagnosed with autistic disorder if he or she displays at least six of the twelve symptoms, which were listed across the three main areas of social interaction, communication, and behavior” (American Psychiatric Association, 2000, p. 70-71). Autistic Disorder, Childhood Disintegrative Disorder, Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), and Aspergers Syndrome were all recognized as distinct subtypes under Pervasive Developmental Disorders (Autism Speaks, 2014).

In May of 2013, the publication of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) states all autism disorders were merged into one umbrella diagnosis of Autism Spectrum Disorder (Autism Speaks, 2014a). The tables listed below are the verbatim reproduction of the full-text of the diagnostic criteria for ASD and the related diagnosis of Social Communication Disorder (SCD), as they appear in the fifth edition of the DSM-5. Psychologists and psychiatrists will be using these criteria when evaluating individuals for these developmental disorders (American Psychiatric Association, 2013).

Autism Spectrum Disorder 299.00 (F84.0)

Diagnostic Criteria

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive, see text):

1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.
3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Specify current severity:

Severity is based on social communication impairments and restricted repetitive patterns of behavior (see Table 2).

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive; see text):

1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypes, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns or verbal nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat food every day).
3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g, strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interest).
4. Hyper- or hyporeactivity to sensory input or unusual interests in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

Specify current severity:

Severity is based on social communication impairments and restricted, repetitive patterns of behavior (see Table 2).

C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.

E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

Note: Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) communication disorder.

Specify if:

With or without accompanying intellectual impairment

With or without accompanying language impairment

Associated with a known medical or genetic condition or environmental factor

(**Coding note:** Use additional code to identify the associated medical or genetic condition.)

Associated with another neurodevelopmental, mental, or behavioral disorder

(**Coding note:** Use additional code[s] to identify the associated neurodevelopmental, mental, or behavioral disorder[s].)

With catatonia (refer to the criteria for catatonia associated with another mental disorder, pp. 119-120, for definition) (**Coding note:** Use additional code 293.89 [F06.1] catatonia associated with autism spectrum disorder to indicate the presence of the comorbid catatonia.)

Table 1

Severity Levels For Autism Spectrum Disorder

Severity level	Social communication	Restricted, repetitive behaviors
Level 3 "Requiring very substantial support"	Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. For example, a person with few words of intelligible speech who rarely initiates interaction and, when he or she does, makes unusual approaches to meet needs only and responds to only very direct social approaches	Inflexibility of behavior, extreme difficulty coping with change, or other restricted/repetitive behaviors markedly interfere with functioning in all spheres. Great distress/difficulty changing focus or action.

<p>Level 2 "Requiring substantial support"</p>	<p>Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions; and reduced or abnormal responses to social overtures from others. For example, a person who speaks simple sentences, whose interaction is limited to narrow special interests, and how has markedly odd nonverbal communication.</p>	<p>Inflexibility of behavior, difficulty coping with change, or other restricted/repetitive behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/or difficulty changing focus or action.</p>
<p>Level 1 "Requiring support"</p>	<p>Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions, and clear examples of atypical or unsuccessful response to social overtures of others. May appear to have decreased interest in social interactions. For example, a person who is able to speak in full sentences and engages in</p>	<p>Inflexibility of behavior causes significant interference with functioning in one or more contexts. Difficulty switching between activities. Problems of organization and planning hamper independence.</p>

	communication but whose to-and-fro conversation with others fails, and whose attempts to make friends are odd and typically unsuccessful.	
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Social (Pragmatic) Communication Disorder 315.39 (F80.89)

Diagnostic Criteria

A. Persistent difficulties in the social use of verbal and nonverbal communication as manifested by all of the following:

1. Deficits in using communication for social purposes, such as greeting and sharing information, in a manner that is appropriate for the social context.
2. Impairment of the ability to change communication to match context or the needs of the listener, such as speaking differently in a classroom than on the playground, talking differently to a child than to an adult, and avoiding use of overly formal language.
3. Difficulties following rules for conversation and storytelling, such as taking turns in conversation, rephrasing when misunderstood, and knowing how to use verbal and nonverbal signals to regulate interaction.
4. Difficulties understanding what is not explicitly stated (e.g., making inferences) and nonliteral or ambiguous meanings of language (e.g., idioms, humor, metaphors, multiple meanings that depend on the context for interpretation).

B. The deficits result in functional limitations in effective communication, social participation, social relationships, academic achievement, or occupational performance, individually or in combination.

C. The onset of the symptoms is in the early developmental period (but deficits may not become fully manifest until social communication demands exceed limited capacities).

D. The symptoms are not attributable to another medical or neurological condition or to low abilities in the domains of word structure and grammar, and are not

better explained by autism spectrum disorder, intellectual disability (intellectual developmental disorder), global developmental delay, or another mental disorder.

In addition, standardized guidelines, as defined by the Children's Hospital of Pittsburgh, include two levels of screening. Level one is recommended for all children at their well-child check-ups up to 24 months of age and should include checks of developmental deficits that include: "No babbling, pointing, or gesturing by age 12 months; no single words spoken by age 16 months; no two-word spontaneous expressions by age 24 months," which refers to echolalia. In this case, the clinician would be looking to see if the child is spontaneously creating or simply echoing two-word phrases (American Psychiatric Association, 2000). In this level, clinicians would also be looking for a loss of any language or social skills at any age and a lack of eye contact at three to four months (Children's Hospital of Pittsburgh/UPMC, 2010).

Children's Hospital of Pittsburgh/UPMC indicated the second level of testing, which is more intense than level one and is only performed when a child has been diagnosed as developmentally delayed in the first level, is meant to "differentiate autism from other developmental disorders" (p.1). In this level, a variety of data are collected, including traditional medical history as well as "neurological evaluation, genetic testing, metabolic testing, electrophysiologic testing (i.e., CT scan, MRI, PET scan), and psychological testing" (p. 1). Genetic testing is often called for not just because there are genetic markers for the disorder, but because parents who have given birth to one child with autism are at an increased risk, three to seven percent higher, for giving birth to a another child with autism (Children's Hospital of Pittsburgh/UPMC, 2010).

Developmental Markers and Warning Signs

Child developmental stages are a combination of a number of behaviors that make a child unique. Some children develop behaviors earlier or later, but most develop within a specific age

range. The characteristic behaviors of autism spectrum disorders may or may not be apparent in infancy (12 to 24 months) but usually become obvious during early childhood (24 months to 6 years) (ACHIEVA, 2014; Hughes-Lynch, 2012; The Early Learning Institute, 2014c).

As part of a well-visit for babies and children, a doctor should complete a developmental screening and ask specific questions about the child's progress. Parents, caregivers, other family members, teachers, and others who spend a lot of time with children can also look for indicators.

According to ACHIEVA (2014), Allegheny Intermediate Unit of Pittsburgh (2014), Autism Speaks (2014b), Greenspan, Prizant, and Wetherby (2014), and The Early Learning Institute (2014c) typically developing children should reach some of the following milestones:

1. 3 Months of Age – The child can do the following: smile when a familiar person talks, enjoys being held, responds to loud sounds, is calm or quiet in response to a familiar voice, coos and gurgles, kicks arms and legs when lying on back, lifts head when placed on tummy, grasps a finger with their hand, likes to look at faces or objects, follows a moving object with eyes, sucks and swallows well from the breast or bottle, will suck on hands, fingers, pacifier, or tongue
2. 6 Months of Age – The child can do the following: look at and reach for feet, respond differently to strangers, enjoys seeing reflection in mirror, turns head to find sounds, makes sounds to express happiness and displeasure, babbles using consonants, rolls from back to tummy, sits for a few seconds on own, reaches for nearby objects, passes a toy from one hand to another, shows interest in toys and tries to get one out of reach, grasps toys and brings them to mouth to explore, anticipates activities like begin fed, help support bottle with hands

3. 12 Months of Age – The child can do the following: express likes and dislikes, show fear and uncertainty around strangers, copies everyday activities, develop sense of humor, follows simple requests, vocalizes to get attention, babbles using lots of sounds, begins to say first words, pulls self to standing, walks while holding furniture, claps hands, points or pokes, enjoys putting objects in containers, practices simple cause and effect toys, play with purpose, holds out arms/legs for dressing, finger feed self, drinks from an open cup
4. 18 Months of Age – The child can do the following: show affection, assert independence, play pretend, use a few words, imitate new sounds, points to show wants, follow simple directions, finds familiar objects, walks well, squats to pick up toys, climbs up stairs, stacks blocks, scribbles with crayons, helps turn thick pages, knows the purpose of common household objects, holds and drinks from a cup, feeds self with spoon, takes off some clothing
5. 24 Months of Age – The child can do the following: tries many things on own, has trouble sharing toys, plays next to other children, refers to self by name, learns new words and puts new words together, identifies simple body parts, points to familiar pictures when named, throws and kicks a ball, runs, climbs by self, imitates drawing lines on paper, enjoys exploring, will match shapes and puzzles, listens to short story, feeds self with spoon with little spill, washes hands with help, know where things are generally in the house

Although many children with autism do not show significant signs of the disorder until

after the first year of life, it is important to understand some of the early developmental patterns of typical children. Autism Society (2014a) and James (2013) identify five behaviors that signal a need for further evaluation:

- Does not babble or coo by 12 months
- Does not gesture (point, wave, grasp) by 12 months
- Does not say single words by 16 months
- Does not say two-word phrases on own by 24 months
- Has loss of any language or social skill at any age

Having any of these five “red flags” does not mean a child has autism, but because the characteristics of the disorder vary so much, a child should have further evaluations by a multidisciplinary team that may include a neurologist, psychologist, developmental pediatrician, speech-language therapist, learning consultant, or other professionals knowledgeable about autism. The American Academy of Pediatrics (AAP) now recommends that the 18 and 24 month well check-up visit with a child’s pediatrician should include a developmental screening for autism spectrum disorders for all children (Autism Society, 2014b).

Although autism spectrum disorders are characterized by social difficulties, communication challenges, and repetitive behaviors, the symptoms and their severity vary widely across the three core areas. The basic symptoms of autism are often accompanied by other medical conditions and challenges, which can also vary widely in severity (Autism Speaks, 2014b; Wetherby et al., 2004).

Children with autism may display some of the many characteristics displayed below. They may have severe forms of one or more of the characteristics, or they may only have mild impairments related to the characteristics. It is important to note that any of these characteristics

by themselves may be typical; however, a pattern of unusual behaviors, constant use of a certain behavior over time, or problems with communication or social skills could be a cause for concern (Brown, Gerber & Oliva, 2014; James, 2013; Peacock & Aldridge, 2009; Rocky Point Academy, 2009; Wetherby et al., 2004).

1. Communication – A child with autism will not respond to his/her name by 12 months of age, cannot explain what he/she wants, language skills are slow to develop or speech is delayed, doesn't follow directions, seems to hear sometimes but not at other times, doesn't point or wave good-bye, used to say a few words or babble but seems to lose that ability
2. Socialization – A child with autism doesn't smile when smiled at, has poor eye contact, seems to prefer to play alone, seems to be in his or her own world, seems to tune people out, is not interested in other children, doesn't like to play peek-a-boo, doesn't point out interesting objects by 14 months of age, shows little body language or facial expressions when interacting
3. Repetitive Behavior – A child with autism gets stuck doing the same thing over and over and can't move on to other things, shows unusual attachments to toys, objects, or routines, spends a lot of time lining things up or putting things in certain order, repeats words or phrases (sometimes called echolalia), spends time in repetitive movement
4. Language Development – A child with autism uses abnormal pitch, intonation, rhythm or stress when speaking, speech is loud or quiet, has difficulty whispering, may have very high vocabulary, speech started early then stopped for a period of time

5. Behaviors – A child with autism is fascinated with rotation, quotes movies or video games, difficulty transferring skills from one area to another, gross and fine motor skills are behind typically developing peers, inability to perceive dangerous situations, extreme fear for no reason, verbal outbursts, unexpected movements, difficulty sensing time, difficulty waiting their turn, causes injury to self
6. Emotions/Sensitivity – A child with autism is sensitive to sounds, textures, tastes, smells or light, has a high or low pain tolerance, cannot tolerate certain food textures, inappropriate touching in public situations, laughs, cries or throws a tantrum for no reason, resists change in environment, becomes overwhelmed with too much verbal direction, calmed by external stimulation
7. School-Related Skills – A child with autism has high skills in some areas and low skills in other areas, has excellent rote memory, has difficulty with reading comprehension, has difficulty with fine motor activities, has a short attention span, resists to follow directions
8. Health/Movement – A child with autism has an unusual gait, odd or unnatural posture, has difficulty moving through space, walks without swinging arms freely, has incontinence of bowel and/or bladder, has frequent gas, has an appearance of a hearing problem but hearing is fine, could have seizure activity, could have allergies and food sensitivities, could have irregular sleep patterns, and could have a lack of concern for personal hygiene
9. Other Characteristics – A child with autism doesn't play "make believe" or pretend by 18 months, has odd movement patterns, doesn't play with toys the way other

children do, walks on his/her toes, doesn't imitate silly faces, seems to stare at nothing or wander around with no purpose, seems overly sensitive to noise

According to Brown, Gerber, and Oliva (2014), James (2013), Peacock and Aldridge (2009), Rocky Point Academy (2009), and Wetherby et al. (2004), the symptoms listed above can be characteristics of a child with autism. The characteristics may be displayed in mild, moderate, or severe form, and unusual patterns of behavior should be discussed with a physician.

Typically developing infants are social by nature. According to Erickson's psychosocial stages, a child will develop a sense of whether they can trust those around them, they develop a balance of independence over doubt and shame, and they will demonstrate initiative and purpose when trying new things without being overwhelmed by failure (Papalia, Sterns, Feldman, & Camp, 2007).

By contrast, most children who develop autism have difficulty in socialization and in engaging in the give-and-take of everyday human interactions. By toddlerhood, many children with autism have difficulty playing social games, don't imitate the actions of others, and prefer to play alone. Unlike typical children, they may ignore or refuse to acknowledge their parents' emotions including both displays of affection or anger. They also struggle with comprehending things from different perspectives. Generally, children recognize that other people display different thoughts, feelings, and/or emotions than they have. Unfortunately, children with autism may be deficient in understanding this concept which can interfere with their ability to predict or understand another person's actions (Autism Speaks, 2014b; Brown, Gerber & Oliva, 2014; James, 2013).

Communication is another core area of development. Autism Speaks (2014b) states young children with autism tend to be delayed in "babbling, speaking, and learning to use

gestures” (p. 3). Some infants coo and babble during the first several months of life, but later lose these communicative behaviors. Others experience significant language delays and don’t begin to speak until much later.

In addition, unusual repetitive behaviors and/or tendency to engage in a restricted range of activities are another core symptom of autism. Some common repetitive behaviors include “hand-flapping, rocking, jumping and twirling, arranging and rearranging objects, and repeating sounds, words and phrases” (Autism Speaks, 2014b, p. 3; Nuner, & Griffith, 2010, Zane, Davis, & Rosswurm, 2008). Sometimes the repetitive behavior is “self-stimulating, such as wiggling fingers in front of the eyes” (p. 3). Also, the tendency to engage in a restricted range of activities can be seen in the way that many children with autism play with toys. Some spend hours lining up toys in a specific way instead of using them for pretend play. Many children need extreme consistency in their environment and daily routine; otherwise, a slight change can be very stressful and may lead to outbursts (Autism Society 2014a; Autism Speaks, 2014b; James, 2013; Peacock & Aldridge, 2009; Rocky Point Academy, 2009).

In contrast, Piaget’s cognitive stages of human development indicate infants, from birth to two years old, change from someone who responds primarily through reflexes to a child who can organize activities in relation to the environment. The child uses sensory and motor abilities to comprehend their world (Papalia et al., 2007). While there are numerous developmental markers and warning signs for identifying autism, there are also various screening assessments used to help determine a diagnosis.

Screening Assessments

While there is not one specific behavioral or communications test that can detect autism, several screening instruments and developmental checklists have been designed that are used to help diagnose autism. The diagnosis process for autism spectrum disorder is multifaceted and

cannot be summarized in one number from a lone assessment (Charak and Stella, 2001-2002; Freeman, Cronin, and Candela, 2002). Furthermore, Freeman, Cronin, and Candela (2002) state “rating scales were not designed to be used in isolation to make a diagnosis. They are useful to the clinician, but are only one source of qualitative information for a comprehensive clinical assessment” (p. 148). Precise identification of autism involves the exploration of qualitative and quantitative data from various resources. Because of the identification process, a quality evaluation is dependent upon the doctor or specialist who arguably are the most important element of the assessment process.

To accurately diagnosis and/or identify a child with autism, it requires the doctor to collect and assimilate data from a variation of resources utilizing numerous methods. Once collected, the information must be interpreted by an experienced clinician so the data can be interpreted. Assessment tools can provide valuable information, but it must be interpreted so that a protocol of services and interventions can be established for a child who is identified with autism. According to Charak and Stella (2001-2002) “Screening instruments are intended to help clinicians identify children who present with developmental delays and/or atypical behavior for whom a diagnosis in the autistic spectrum may be considered . . . [those] who should be referred for a more intensive diagnostic evaluation” (p. 6). The term “diagnostic” instrument is misinforming because one format does not represent an adequate foundation for a diagnostic conclusion. Because there is not a definitive approach for the screening process and the diagnostic assessment, the information collected during a screening should be included in the comprehensive assessment process.

When a child is suspected of having a diagnosis of autism at a young age, careful monitoring by professionals and a referral to both specialist services and early intervention is

appropriate and recommended (Aronson-Ramos, 2014; Autism Society, 2014a; James, 2013; Peacock & Aldridge, 2009). The examples listed below are the verbatim reproduction of the full-text as they appear in the Texas Guide for Effective Teaching *Autism Screenings and Assessments* (2013, p. 4-10). The following are of screening tests used for children that are suspected to have autism:

1. AUTISM BEHAVIOR CHECKLIST (ABC)

The Autism Behavior Checklist (Krug, Arick, & Almond, 2008) is a 57-item questionnaire completed by parents or teachers. It is one component of the Autism Screening Instrument for Educational Planning-Third Edition (Krug et al., 2008). The ABC is divided into five subscales: sensory behavior, social relating, body and object use, language and communication skills, and social and adaptive skills. (Autism Screening and Assessments, p.4).

2. AUTISM DIAGNOSTIC INTERVIEW—REVISED (ADI-R)

The Autism Diagnostic Interview—Revised (ADI-R; Couteur, Lord, Rutter, & Western Psychological Services, 2003; Lord, Rutter, & LeCouteur, 1994) is the 1994 revision of the ADI. The interview is conducted with parents or caretakers who have knowledge about the individual’s current behavior and developmental history. The questions address the triad of symptoms related to autism spectrum disorders – Language/Communication; Reciprocal Social Interactions; and Restricted, Repetitive, and Stereotyped Behaviors and Interests. The measure consists of 93 yes/no questions followed by probe questions, which are scored on a scale of 0 to 2. Using a scoring template, the scores are converted into diagnostic criteria based on the International Classification of Diseases-10th

Revision (Autism Screening and Assessments, p.4; ICD-10; World Health Organization, 1993; World Health Organization, 2014).

3. AUTISM DIAGNOSTIC OBSERVATION SCHEDULE—SECOND EDITION (ADOS-2)

The ADOS-2 is an updated semi-structured, standardized observational assessment tool designed to assess autism spectrum disorders in children, adolescents, and adults (Lord et al., 2012). The ADOS-2 assesses communication, social interaction, play, and restricted and repetitive behaviors. The instrument consists of five modules selected based on age and level of expressive language. The ADOS-2 has updated protocols, revised algorithms, and a Toddler Module - for children between 12 and 30 months. Observations are recorded and scored by the examiner. Modules 1 through 4 provide cutoff scores to aid in interpretation. The Toddler Module provides ranges of concern rather than cutoff scores. Administration time is 40 to 60 minutes (Autism Screening and Assessments, p.4).

4. AUTISM OBSERVATION SCALE FOR INFANTS (AOSI)

The Autism Observation Scale (AOSI; Bryson & Zwaigenbaum, 2014) is a semi-structured, play-based measure designed to identify early signs of autism in high-risk infants (those who have an older sibling with autism). The AOSI is intended for infants 6-18 months. Seven activities provide opportunities to observe behaviors in the following areas: visual tracking, disengagement of attention, orientation to name, reciprocal social smiling, differential response to facial

emotion, social anticipation, and imitation. Currently, the AOSI is used as a research instrument (Autism Screening and Assessments, p.5).

5. AUTISM SCREENING INSTRUMENT FOR EDUCATIONAL PLANNING—THIRD EDITION (ASIEP-3)

The ASIEP-3 (Krug, Arick, & Almond, 2008) was developed to evaluate autism spectrum disorders and assist in developing and monitoring educational programs for individuals diagnosed with autism. The ASIEP-3 consists of the following five standardized subtests (Autism Screening and Assessments, p.5).

- Autism Behavior Checklist: A questionnaire that is designed to assess characteristics of autism
- Sample of Vocal Behavior: An assessment of spontaneous expressive language
- Interaction Assessment: Measurement of a child's social responses and reaction to requests
- Educational Assessment: Assessment of educational skills, including remaining in seat, receptive/expressive language, body concept, and imitation of speech
- Prognosis of Learning Rate: Measures rate of learning

6. AUTISM-SPECTRUM QUOTIENT (AQ)

The AQ is a parent questionnaire designed to identify the presence of the characteristics of autism spectrum disorders. There are currently two versions of the Autism-Spectrum Quotient – the school-age adolescent version (AQ-Adol; Baron-Cohen, Hoekstra, Knickmeyer, & Wheelwright, 2006) and the children's version (AQ-Child; Auyeung, Baron-Cohen, Wheelwright, & Allison, 2008). The AQ contains 50 items that describe five areas associated with autism spectrum disorders: social skills, attention switching, attention to detail, communication,

and imagination. Parents rate each item on a range from ‘definitely agree’ to ‘definitely disagree’ (Autism Screening and Assessments, p.5).

7. CHECKLIST FOR AUTISM SPECTRUM DISORDER (CASD)

The Checklist for Autism Spectrum Disorder (CASD; Mayes, 2012) is a diagnostic and screening tool. The CASD is unique because it was designed to assess autism as a spectrum rather than distinct subtypes. This approach is consistent with the DSM-5. The 30 items on the CASD were developed to describe the broad range of symptoms (organized into five categories) displayed by individuals with ASD in order to help parents and others to understand that relationship between these behaviors and ASD. Also, the CASD can be used to design a treatment program by targeting symptoms for intervention. The CASD is administered through a 15-minute semi-structured parent interview, information from a teacher or childcare provider, observations, and review of records. The examiner inquires whether or not each of the 30 symptoms were ever present (Autism Screening and Assessments, p.6).

8. CHECKLIST FOR AUTISM IN TODDLERS (CHAT)

The Checklist for Autism in Toddlers (CHAT; Baron-Cohen, Allen, & Gillberg, 1992; Baron-Cohen et al., 1996; The National Autistic Society, 2014) is a brief screening questionnaire that is completed by parents and a physician during the child’s 18-month check-up. Five key items are indicative of the risk of developing autism: pretend play, protodeclarative pointing (expressing interest), following a point, pretending, and producing a point. If a child fails the initial administration of the CHAT, it is recommended that the questionnaire be re-administered one

month later. Any child who fails a second time should be referred for formal autism assessment (Autism Screening and Assessments, p.6).

9. CHILDHOOD AUTISM RATING SCALE—SECOND EDITION (CARS-2)

The purpose of the Childhood Autism Rating Scale (2nd ed.; CARS-2; Schopler, Van Bourgondien, Wellman, & Love, 2010) is to identify the presence of autism in children and to determine the severity of symptoms. The CARS-2 has two versions – the Standard form, CARS2-ST, for individuals less than 6 years of age and those with communication difficulties or below average estimated IQs, and the CARS2-HF for those 6 years and over who are verbally fluent and have IQ scores over 80. The CARS2-HF is designed to identify the more subtle characteristics of those with “high functioning” forms of ASD. The CARS2 also includes a third form, the Questionnaire for Parents or Caregivers (CARS2-QPC), for collecting information for use in making CARS2ST and CARS2-HF ratings. Fifteen domains are rated on a 4-point scale. Based on informant or clinician observation, the clinician assigns ratings in each domain related to frequency, peculiarity, intensity, and duration. The CARS2 yields cutoff scores, standard scores, and percentiles (Autism Screening and Assessments, p.6).

10. DEVELOPMENT BEHAVIOR CHECKLIST-AUTISM SCREENING ALGORITHM (DBC-ASA)

The Development Behavior Checklist-Autism School Algorithm (DBC-ASA; Brereton, Tonge, Mackinnon, & Einfeld, 2002) is an autism screening instrument derived from the Developmental Checklist Parent/Primary caregiver report (DBC-

P). The DBC-ASA is comprised of 29 items from the original checklist and is intended for children and adolescents 4 to 18 years old (Autism Screening and Assessments, p.7).

11. DEVELOPMENTAL CHECKLIST-EARLY SCREEN (DBC-ES)

The Developmental Checklist-Early Screen (DBC-ES; Gray & Tonge, 2005) is an autism screening instrument derived from the Developmental Checklist Parent/Primary caregiver report (DBC-P). The DBC-ES is comprised of 17 items from the original checklist and is intended for children 18 to 48 months (Autism Screening and Assessments, p.7).

12. EARLY SCREENING OF AUTISTIC TRAITS (ESAT)

The Early Screening of Autistic Traits (ESAT; Swinkels et al., 2006) is a 14-item screening checklist for parents/caregivers. The questionnaire is designed for 14-month-old infants. The tool is designed to be administered by health practitioners at well-baby visits. Failure on three or more items suggests the need for a diagnostic evaluation (Autism Screening and Assessments, p.7).

13. GILLIAM AUTISM RATING SCALE—THIRD EDITION (GARS-3)

The Gilliam Autism Rating Scale- Third Edition (GARS-3; Gilliam, 2013) is designed for the assessment of autism in individuals aged 3 to 22. The items and subscales are based on the DSM-5 diagnostic criteria. It was normed on a sample of 1,859 individuals. The GARS-3 can be completed by parents, teachers, or clinicians. The GARS-3 consists of six subscales: Restrictive, Repetitive, Behaviours; Social Interaction; Social Communication; Emotional Responses;

Cognitive Style; and Maladaptive Speech (Autism Screening and Assessments, p.8).

14. MODIFIED CHECKLIST FOR AUTISM IN TODDLERS, REVISED WITH FOLLOW-UP (MCHAT-R/F)

The Modified Checklist for Autism in Toddlers, Revised with Follow-Up (MCHAT-R/F; Robbins, Fein, & Barton, 2009) designed to screen for autism in infants 16 to 30 months, was developed for use during well-child check-ups. It is a two-step autism-screening tool. The first step is a 20-item yes/no parent/caregiver questionnaire that yields Low, Medium, or High Risk Classifications. The second step of the process is a follow-up questionnaire, given for a child found to be at medium risk. The follow-up questionnaire consists of 20 pass/fail items used to gather further information for classification into High Risk or Low Risk categories (Autism Screening and Assessments, p.8).

15. SCREENING TOOL FOR AUTISM IN TWO-YEAR-OLDS (STAT)

The Screening Tool for Autism in Two-Year-Olds (STAT; Stone, Coonrod, & Ousley, 2000) is an instrument for screening for autism in children between the ages of 24 and 36 months. This instrument consists of 12 interactive activities administered within the context of play. Behaviors in four social-communicative domains—play, motor imitation, requesting and directing attention—are assessed, and performance on each item is rated as Pass, Fail, or Refuse, based on specified criteria. The STAT may be given by a wide range of professionals, but training in administration and scoring is required. Administration time is approximately 20 minutes (Autism Screening and Assessments, p.9).

16. SOCIAL COMMUNICATION QUESTIONNAIRE (SCQ)

The Social Communication Questionnaire (SCQ; Rutter, Bailey, Lord, & Berument, 2003) is an instrument for screening autism in individuals over the age of 4 with a mental age over 2 years. The SCQ contains 40 yes/no items, which can be completed in less than 10 minutes by a parent or other caregiver. The SCQ has two forms—the Lifetime Form, which focuses on behavior throughout development, and the Current Form, which focuses on behavior during the most recent three months. The instrument yields a Total Score for comparison to defined cutoff points (Autism Screening and Assessments, p.10).

17. SOCIAL RESPONSIVENESS SCALE—SECOND EDITION (SRS-2)

The Social Responsiveness Scale, Second Edition (SRS-2; Constantino & Gruber, 2012) is a 65-item questionnaire used to assist in screening and diagnosis of autism. The tool can be completed by parents/caregivers or teachers who are familiar with the student. Questions are rated on a 4-point Likert scale. The purpose of the SRS-2 is to reveal a wide range of symptoms from subtle to more pronounced. The test provides an overall score and five treatment subscales that can be used for program planning: Social Awareness, Social Cognition, Social Communication, Social Motivation, and Restricted Interests and Repetitive Behaviors. Two subscales, Social Communication and Interaction and Restricted Interests and Repetitive Behaviors are designed to be DSM-5 compatible (Autism Screening and Assessments, p.10).

There are many assessments used to identify, evaluate, and assess children with autism.

As parents are becoming more familiar with autism and are recognizing the symptoms, there is an urgency to formally identify children so the appropriate services can be provided. Although the evaluations are critical for making or confirming the diagnosis of autism, they do not provide much information beyond the diagnosis that would relate to the child's skills in different environments (Vacca, 2007). The assessments provide a link between the diagnosis and evaluation procedures, and early interventions become paramount in developing appropriate intervention goals for children diagnosed with autism.

Early Intervention

Early intervention is a system of services that helps babies and toddlers with developmental delays or disabilities (Aronson-Ramos, 2014; Center for Parent Information and Resources, 2014; Department of Human Services Allegheny County, 2013). Early intervention focuses on helping eligible babies and toddlers learn the basic and brand-new skills that typically develop during the first three years of life, such as “physical (reaching, rolling, crawling, and walking), cognitive (thinking, learning, solving problems), communication (talking, listening, understanding), social/emotional (playing, feeling secure and happy), and self-help (eating, dressing)” (National Dissemination Center for Children With Disabilities, 2013, p. 1; Positive Steps Therapy, 2014). All early intervention services are tailored to meet the child's individual needs.

Early intervention may focus on the child alone or on the child and the family together, and may be “center-based, home-based, hospital-based, or a combination. Services range from identification, which is hospital or school screening and referral services, to diagnostic and direct intervention programs” (Kid Source Online, 2013, p.1; Positive Steps Therapy, 2014). Early intervention may begin at any time between birth and school age.

Recent studies indicate that diagnostic signs of autism may emerge as early as the first year of life. Given the ability to detect the early signs of autism, intervention can be given in a timely manner and impact the course of development for every child. Because early intervention operates on the principle that children learn from everyday interactions with familiar people, places, experiences, and routines, early intervention can be accomplished in both clinical and home settings with families assisting in the ongoing intervention process (Aronson-Ramos, 2014; Department of Human Services Allegheny County, 2013; Pennsylvania Department of Education, 2014).

The goal of all therapies in an early intervention program is to “promote the child’s ability to attend to the environment, develop verbal and motor imitation skills, develop language and functional communication skills, learn appropriate social interaction play skills, and develop friendships with age appropriate peers” (Aronson-Ramos, 2014, p.8). Family involvement is critical because it ensures that everyone in the child’s environment is prepared to assist the child with reaching their fullest potential. Early intervention can take place at home, according to the Pennsylvania Department of Education (2014), while children are taught everyday life skills like “eating, playing, moving, and communicating” (p. 1). Also, utilizing games that involve the child answering “what’s this” or “I see...” types of question-focused prompts will enable the child to better understand that the more he/she is involved and responding to such prompts, the more likely the child will engage in preferred activities (p. 1). Because games are incorporated into everyday routines, there are numerous opportunities for learning in fun and challenging ways that provide meaningful results, an important goal given that “research indicates that learning is most effective when it is functional and meaningful” (p. 1). Likewise, Wesley Spectrum Services (2014) believes that children, specifically those diagnosed with autism,

require specialized help that includes individualized learning and group activities with other like children and in an environment with children progressing at their own rates.

All children develop and grow at different rates; however, experts do agree that “there are ‘normal’ signs of development” (Queer, n.d., p.1). Generally, early intervention is called for when a child under the age of three shows a significant delay—typically this means at a 25 percent delay—in at least any one area of development with pointers in areas such as “reaching, grasping ... talking ... listening” to name a few (Queer, n.d., p. 1). Fifty years of research and analysis indicates that early intervention is extremely successful in the treatment of autism and autism spectrum disorders, and that the first three years of life are most important in the implementation of such intervention practices (Queer, n.d.).

Experts believe that the earlier a child is diagnosed, the more likely the child will improve with the implementation of early intervention strategies. Families also benefit from ancillary support derived from the process, and affected schools and communities experience reduced expenses as more and more children in such programs are able to be mainstreamed into the school system (Queer, n.d.).

The I Care Corporation (2008) conducted a two-year study, entitled *The Science of Early Childhood Development* with a team that included seventeen leaders in “neuroscience, psychology, child development, economics, education, pediatrics, psychiatry, and public policy” who reviewed existing information on early child development and the “influence of early experiences on children’s health and well-being” (Queer, n.d., p. 2). Three key points were derived from this study: The parent-child relationship is the foundation of a child’s healthy development; such development hinges on nature and nurture with nature signifying the traits with which the child was born and nurture being that which the child experiences; and every

developmental area—“social, emotional, intellectual, language, motor” —is linked, interdependent, and influencing all other areas (Queer, n.d., p. 2). The study summarized that ongoing stimulation, above all, is key in any early intervention programs for children with autism (Queer, n.d.).

Likewise, Total Learning Centers incorporates various therapies and is particularly skilled in using reading therapy in its treatment of autism spectrum disorders utilizing “research-based approaches” to incorporate reading to “strengthen attention, memory, and other areas” (Utay & Utay, 2008, p. 2). The group believes that strength in reading will also “better equip children ... to graduate high school, attend and graduate college, get and keep the job they want, or make the income they know they are capable of earning” since without the ability to read, children cannot “read menus and instructions as easily as they want,” which can lead to other life challenges (Utay & Utay, 2008, p. 2).

Dana Monroe (2009) researched autism and literacy and found the teachers’ perspectives were positive. In her study, she found that teachers believed that early literacy was important and all children could acquire literacy skills, especially children diagnosed with autism. She reported that the teachers believed children with autism were deserving of the same opportunities as students who were developing in a more typical fashion. Their foundational philosophies were centered on the theory that “each student is unique and merits the individual opportunity to achieve” (p. 161). The teachers indicated they felt strongly about incorporating common strategies in the inclusive setting; however, they felt it was challenging to find beneficial and scientifically-proven methods to teach children with autism. Most teachers weren’t confident they met all the students’ needs, but believed they were utilizing many intervention strategies to incorporate literacy to the best of their abilities.

In short, early intervention is a “variety of supports and services designed to build and enhance the natural learning that occurs in the early years” (Department of Human Services Allegheny County, 2013; The Alliance for Infants and Toddlers, 2014, p. 1). Generally, early interventionists and organizations focusing on early intervention in the treatment of autism spectrum disorders agree that “supports and services are provided in the home, child care site, and other community settings identified by the family” (The Alliance for Infants and Toddlers, 2014, p. 1).

Hughes-Lynch (2012) stated, “If you’ve met one child with autism, then you’ve met one child with autism” (p. 65). There are so many variations and differences among the autism population, that there is not one specific way to teach a child with ASD. However, it is very important that when considering intervention therapies, that the focus remains on the individual needs of the child. By entering into individualized treatment programs early and by working to set and meet goals tailored to the child, the child can achieve greater independence. They learn skills to help participate in group and individual settings in school, social, and familial environments with minimal support, and interventions provide a collection of additional skills and coping mechanisms to assist with every day functions (Wesley Spectrum Services, 2014). In an effort to assist children in reaching age-appropriate developmental and developmental milestones, early intervention ultimately helps the child to be more successful in the school, home, and community (The Early Learning Institute, 2014a).

Intervention Methodologies

There are various intervention methodologies to support children with autism. A child diagnosed with autism requires environmental and instructional support which will assist in overcoming “various challenges posed by their ability to communicate, understand language, play, develop social skills, and relate to others” (Rao & Gagie, 2006, p. 28). In this section,

several strategies will be described because “professionals and parents require access to straight-forward information about the efficacy of various methods...that will assist them in determining a method’s suitability with individual children” (Simpson, 2005, p. 143).

Providing an education for children with autism is “an intensive undertaking, involving a team of professionals and many hours each week of different instruction and therapies to address a student’s behavioral, developmental, social and/or academic needs. Students with autism often require explicit teaching across a variety of settings to generalize skills” (Autism Speaks Family Services, 2012, p. 74). There are several approaches that can be incorporated into the learning environment for children with autism. School personnel need to “evaluate prospective interventions for a student on an individualized basis, as well as keep in mind the need to use evidence-based methods and strategies. No single intervention has been proven effective for every individual with autism” (Autism Speaks Family Services, 2012, p. 74).

As described by Guldberg (2010), Loiacono and Valenti (2010), PBS (2014), Rao and Gaggie (2006), The Watson Institute (2013), and Zane, Davis, and Rosswurm (2008), and according to the verbatim descriptions from Autism Speaks Family Services *School and Community Tool Kit* (2012, p. 74-75), the following are interventions used in school settings:

Discrete Trial Teaching (DTT) or the Lovaas Model

Named for its pioneer Lovaas Model, (ABA-based) Teacher-directed DTT targets skills and behaviors based on an established curriculum. Each skill is simplified into small steps, and taught using prompts, which are gradually eliminated as the steps are mastered. The child is given repeated opportunities to learn and practice each step in a variety of settings. Each time the child achieves the desired result,

he receives positive reinforcement, such as verbal praise or something that he finds to be highly motivating (p.74).

Floortime, or Difference Relationship Model (DIR):

The premise of Floortime is that an adult can help a child expand his circles of communication by meeting him at his developmental level and building on his strengths. Therapy is often incorporated into play activities – on the floor – and focuses on developing interest in the world, communication and emotional thinking by following the child’s lead (p.75).

Picture Exchange Communication System (PECS):

The PECS system allows children with little or no verbal ability to communicate using pictures. An adult helps the child build a vocabulary and articulate desires, observations or feelings by using pictures consistently. It starts with teaching the child to exchange a picture for an object. Eventually, the individual learns to distinguish between pictures and symbols and use these to form sentences. Although PECS is based on visual tools, verbal reinforcement is a major component and verbal communication is encouraged (p.75).

Pivotal Response Treatment (PRT)

(ABA-based) PRT is a child-directed intervention that focuses on critical, or “pivotal,” behaviors that affect a wide range of behaviors. The primary pivotal behaviors are motivation and child’s initiations of communications with others. The goal of PRT is to produce positive changes in the pivotal behaviors, leading to improvement in communication, play and social behaviors and the child’s ability to monitor his own behavior. PRT is a child-directed intervention (p. 75).

Relationship Development Intervention (RDI)

RDI seeks to improve the individual's long-term quality of life by helping the individual to improve social skills, adaptability and self-awareness through a systematic approach to building emotional, social and relational skills. RDI aims to help individuals with autism form personal relationships by gradually strengthening the building blocks of social connections. This includes the ability to form an emotional bond and share experiences (p.75).

Social Communication/Emotional Regulation/Transactional Support (SCERTS)

SCERTS uses practices from other approaches (PRT, TEACCH, Floortime and RDI), and promotes child initiated communication in everyday activities and the ability to learn and spontaneously apply functional and relevant skills in a variety of settings and with an assortment of partners. The SCERTS model favors having children learn with and from peers who provide good social and language models in inclusive settings as much as possible (p.75).

Training and Education of Autistic and Related Communication Handicapped Children (TEACCH)

TEACCH is a special education program using Structured Teaching, a process designed to capitalize on the relative strength and preference for processing information visually in individuals with autism, while taking into account the recognized difficulties. Individualized assessment and planning is used to create a highly structured environment (organized with visual supports) to help the individual map out activities and work independently (p. 75).

Verbal Behavior (VB)

(ABA-based) VB employs specific behavioral research on the development of language and is designed to motivate a child to learn language by developing a connection between a word and its value (p.75). The approach uses B. F. Skinner's analysis of language which "focuses on teaching the different meanings of a word, phrase, or sentence" (Garcia, 2013, p. 17).

In addition to the methodologies already mentioned, Hoaglund (2014a) describes in *The Autism Notebook Pittsburgh* (p.9) some alternatives used to supplement intervention.

Social Skills Training

Social skills training begin by teaching children social rules. Then, it goes into teaching how to read non-verbal cues that are found in eye contact, body language, tone of voice, and facial expression. There should be a strong focus on perspective building, problem solving, and self-awareness. Once the child has grasped the concept, it is important to take the therapy away from the controlled therapeutic environment and into the community for generalization.

Modeling

Modeling ideally involves a typical peer who shows the child with ASD how to do something or how to behave. Then, in turn, the child with ASD mimics the behavior. It is important for an adult to supervise and provide correct positive feedback to each scenario. It can be used to teach how to greet others, engage in a game, or even participate in academic tasks.

Video Modeling

Planning is pivotal in this form of intervention. Scripts are written, the parties are in place, and video is taken of the child with ASD engaging in a contrived, yet fundamental, task that is need of refinement. The video is watched as often as necessary for the behavior to become naturally ingrained.

Cognitive Behavior Therapy

Cognitive behavior therapy (CBT) is based on the idea of how we think, how we feel, and how we act are all related. That is, if children have negative thoughts about themselves, it will in turn negatively affect how they think and behave.

CBT teaches children to replace negative thinking with something more positive and realistic. In addition, CBT programs often teach relaxation strategies to reduce and manage anxiety associated with ASD.

In additions to the alternative that have already be mentioned, the Picture Exchange Communication System (PECS) and the use of social stories are two methodologies often used as strategies for intervention. PECS can be described as an augmented communication system developed to help individuals acquire a functional means of communication (Bondy & Frost, 1994; Vicker, 2002). It is appropriate for “individuals who do not use speech or who may speak with limited effectiveness: those who have articulation or motor planning difficulties or those with limited communicative abilities” (Whallin, 2004).

The use of social stories can also be another useful intervention methodology. A social story is written with specific guidelines to describe a situation in terms of relevant cues and common responses. They can also be used for teaching social skills to children with autism and related disabilities (Rao & Gagie, 2006). The underlying objective of this intervention strategy is

to “enhance a child’s understanding of social situations and teach an appropriate behavioral response that can be practiced” by the child (Wilkinson, 2013, p. 1). A social story is typically written for a specific student, with their unique needs and perceptions in mind. They provide a “sequence and context of planned prompts for a planned social encounter, and they help a child focus their attention on what to expect, how to plan ahead, and what they might be asked to do” (Hughes-Lynch, 2012, p. 133). The first sentence, usually accompanied by a picture, will set the goal of the story. The second section describes the process to achieve the goal, followed by a section that may show obstacles to achieving the goal, and finally a section describing how the goal was achieved (Hughes-Lynch, 2012).

Jeffrey Chan (2009) studied the significance of implementing social stories as an intervention tool to six elementary participants and three pre-service teachers. His study found that a computer-based social stories intervention, implemented by pre-teachers, led to improvement in behavior for some students with autism. Three participants showed improvement in target behaviors, two participants showed questionable improvement, while one participant did not appear to benefit from social stories. He analyzed the effects of time of day, and they were inconclusive; however, there was evidence that performance of target behaviors may be better when there is not a delay after reading a social story.

The numerous intervention strategies that have been mentioned are used to assist children with autism in the educational environment. Likewise there are various alternative methodologies that can be utilized as well.

Alternative Methodologies

Children diagnosed with any of the disorders in the Autism Spectrum—Autism, Pervasive Developmental Disorder (PDD), or Aspergers Syndrome—are believed by many

experts to have a “wide diversity of needs” and seem to improve when treated in individualized, diverse ways, such as in a home and school environment, in the same way as early intervention is constructed (Midwestern Intermediate Unit IV, 2014, p. 1).

Likewise, because of the diversity of the disorder, there are similarly, “multiple interventions that utilize speech, language, and occupational therapists; assistive therapy technology therapists; positive behavior specialists; psychologists; and administrators” (Midwestern Intermediate Unit IV, 2014, p. 1). It is the treatment that is most critical, not necessarily the disorder, in working toward “educational placement” and ensuring that the child’s “strengths and needs” are considered in such placement (Midwestern Intermediate Unit IV, 2014, p. 1). One of the most widely used methodologies is sensory integration therapy. This practice is implemented by the occupational therapist during the students’ day.

Sensory Integration and Occupational Therapy

Sensory integration supplies the groundwork for more complicated learning and behavior. Sensory integration occurs routinely for most individuals, as most people learn naturally to correctly interpret the sensory information received from the world. This process requires effort and attention for children with autism, and there is no guarantee of accurateness (Learning RX, 2013). Difficulty processing, interpreting, and responding to sensory stimuli has been described as a feature of ASD since the disorder was first identified. Current estimates show that between 45 and 96 percent of children with ASD demonstrate these sensory difficulties (Ben-Sasson et al., 2009; Lane, Young, Baker & Angley, 2010; Schaaf et al., 2013). In addition, sensory features (hyper or hypo reactivity to sensory input or unusual interest in the sensory aspects of the environment) are now included as one of four possible manifestations of ‘Restricted, Repetitive Patterns of Behavior, Interests, or Activities’ (American Psychiatric

Association, 2013; Schaaf et al., 2013). In other words, sensory differences often lead to over-responsiveness or under-responsiveness in the environment. Atypical sensory responses may occur with any of the senses which includes visual, auditory, tactile, olfactory, or taste (Goin & Myers, 2006).

Some children with autism experience difficulty in processing sensory input and cannot properly respond to tasks and environmental demands. Sensory modulation occurs when a child is unable to respond to sensory information with behavior that is relative to the intensity of the input (Miler et al., 2007; Zimmer & Desch, 2012). In other words, when children with autism are over stimulated, they require some type of sensory input in order to function within their environments. Ben-Sasson et al. (2007) confirm the early onset of sensory modulation disorders in toddlers with ASD, indicating this deficit begins impacting child development at an early age. Difficulties in sensory modulation are often the first signs that parents notice in their children with ASD (Baker et al., 2008).

Autism Speaks Family Services (2012) states that “sensory challenges can affect the child’s ability to take in information, respond to requests, participate in social situations, write, participate in sports, and maintain a calm and ready to work state” (p. 97). Either through “internal imbalances, or in response to environmental sensations, the sensory and emotional regulation of a person with autism can become overwhelmed and result in anxiety and distress” (p. 97).

Sensory integration therapy is an intervention that can be used with children, and it is based on the idea of trying to balance the input of senses. If the brain interprets the information from the senses too strongly, then the child could feel hypersensitive and the world could seem loud and scary, and even a gentle touch can cause distress. On the other hand, if the brain

interprets the information from the senses too weakly, a person can feel numb and could consequently seek out more exciting or even painful stimulus to counteract these feelings. If a child needs more input to feel satisfied, therapy should introduce positive forms of play that will provide the right amount of stimulus. If a child needs less input, the therapy will introduce gentler forms of play to encourage children not to retreat entirely (Learning RX, 2013). Sensory based therapies involve activities that are believed to organize the sensory system by providing “vestibular, proprioceptive, auditory, and tactile inputs” (Allegheny County Family Resource Guide, 2014; Zimmer & Desch, 2012, p. 1186). Brushes, swings, balls, and other specially designed therapeutic or recreational equipment are used to provide these inputs.

Atypical sensory preferences sometimes reflect self-stimulation. These types of behaviors in children with autism are usually repetitive in nature. These behaviors are often misunderstood by typical children, but they provide sensory stimulation to a child’s confused neurological system. They may include rocking, twirling objects, hand flapping, gazing at the ceiling, lights, or mirrors, or engaging in pica, which is eating nonfood items (Nuner & Griffith, 2011). When preventing children from engaging in self-stimulatory behaviors, they often tantrum or resist transitions. Sometimes self-injurious behaviors are related to self-stimulation. Some children with autism will engage in acts that are injurious such as biting, head banging, and scratching or they may have an inappropriate or lack of response to injury (Greaves, Prince, & Evans, 2006).

Sensory based therapies are increasingly used by occupational therapists in treatment of children with developmental and behavioral disorders (Zimmer & Desch, 2012). The domain of occupational therapy is “supporting health and participation in life through engagement in occupation. The broad range of activities, or occupations, are sorted into categories called areas

of occupation” (Asher et al., 2010, p. 2). The areas of occupation consist of daily living, rest and sleep, work, play, leisure, and social participation (American Occupational Therapy Association, 2008; The Early Learning Institute, 2014a; Therapeutic Early Intervention Service, 2014a). Occupational Therapy and/or the Occupational Therapist, (OT) will bring together the aspects of cognitive, physical, and motor skills in an effort to help the individual increase their independence and participate in daily activities.

For a student with autism, the “focus may be on appropriate play, fine motor and basic social and life skills such as handwriting, independent dressing, feeding, grooming and use of the toilet” (Autism Speaks Family Services, 2012, p. 76; Vann, 2014). There are recommended strategies the occupational therapist can utilize for learning tasks to be used in numerous environments. Practitioners provide services to individuals with autism through a variety of service delivery models including direct service, consultation, group intervention, and community-based services. They also provide individual therapy services that are tailored to the person’s identified areas of need and that maximizes the individual’s skills and performance. Therapy services may include occupational-based intervention, purposeful activity, and preparatory methods (Asher et al., 2010).

Occupational therapists in the education field often work on fine motor control, such as handwriting. If offered at school, OT can occur in the classroom while the child is among their peers, or the child can be pulled-out to work one-on-one with the therapist (Vann, 2014). Children with autism can benefit from OT to help them learn the skills they need or how to structure their day effectively and be as independent as possible (Vann, 2014; WebMD, 2014a). OT goals always focus on the individual needs of the child (Therapeutic Early Intervention

Services, 2014; WebMD, 2014a; Wonder Kids, 2011). In addition to sensory integration, speech and language and communication are important factors for children with autism.

Speech and Communication

Communication incorporates an expansive set of challenges for individuals with autism. Autism Speaks Family Service (2012) shares that communication difficulties “range from intake and processing of information, verbal or representational output, to reading and writing skills” (p. 81). Understanding and learning “non-verbal cues, body language and subtle intent, intonation, and interpretation are also difficult for individuals with autism” (p. 81). Likewise, it is crucial “for both cognitive and social development” that children can communicate their wants and experiences and “understand the communication of other people” (Guldberg, 2010, p. 171).

According to Autism Speaks Family Services (2012), children with autism need the assistance of a speech pathologist to formulate plans and supports in order to assist with social deficits and communication needs. Children with verbal skills can focus on aspects of reciprocal language and on conversational skills. For children with emerging language skills, the speech therapist will focus on building both receptive and expressive skills in the form of words, phrases, and sentences. The speech therapist should focus on alternative modes of communication for children without language skills. Some of the alternatives could include augmentative devices, sign language, and the picture exchange communication system.

Most children diagnosed with autism have some type of language disorder which inhibits their ability to communicate effectively (Kids Health, 2013; Nuner & Griffith, 2011). Language disorders can be defined as receptive which is “difficulty in understanding or processing the language” or expressive, which is “difficulty putting words together, limited vocabulary, or inability to use language in a socially appropriate way” (Kids Health, 2013, p.1). In simple

terms, receptive language is the ability to understand words spoken to you, while expressive language is the ability use words to express yourself (Mauro, 2013). Expressive language deals with the “mechanics of producing words, such as articulation, pitch, fluency, and volume” (Mauro, 2013, p. 1).

Therapists will develop language intervention activities where they will interact with a child “by playing and talking, using pictures, books, objects, or ongoing events” to stimulate language development. The therapist may also “model correct pronunciation and use repetition exercises to build speech and language skills” (Kids Health, 2013, p.2; The Early Learning Institute, 2014a). In addition, articulation therapy, or sound production, may be used to model correct sounds and syllables for a child. Articulation therapy is often done during play activities, where a therapist will demonstrate how to move the tongue to produce specific sounds (Kids Health, 2013).

Because language interaction is intertwined with socialization, the speech pathologists can be influential in helping to assist the students in this area. Some students are “predominantly auditory learners, but many tend to be visual learners, meaning they understand or retain what they see more effectively than what they hear. Visual supports are often helpful since they provide extra processing time” (Autism Speaks Family Services, 2012, p. 81).

Many have found success in the use of private treatment plans that involve intense family work in the care of children with autism (Family Behavioral Resources, 2013). Such family work includes input and support from and for parents, siblings, other family members, and friends, and it often involves working with language development (Family Behavioral Resources, 2013). Although the reason remains unclear, problems with language development in children with autism include difficulty with “word and sentence meaning, intonation, and

rhythm” (Schoenstadt, 2013, p. 1). Because of this deficit, great success has been realized in those programs that focus on the child with an eye toward specific language and communication objectives (The Children's Institute, 2013).

Speech-Language Therapy (SLT) uses a numerous strategies to assist with the scope of language difficulties for children with autism. “SLT is designed to address the mechanics of speech and the meaning and social value of language. For students unable to speak, SLT includes training in other forms of communication, or oral exercises to promote better control of the mouth. For those who seem to talk incessantly about a certain topic, SLT might work on expanding the conversational repertoire, or reading social cues and adjusting conversation to the needs of the listener” (Autism Speaks Family Services, 2012, p. 76).

While SLT is intended to help children to increase their communication skills, it can also assist with children who show significant language delay, hearing loss, have trouble with receptive language, or can't produce speech sounds. Therapy involves “the mechanical components of respiration, articulation, resonance, and voice” (Therapeutic Early Intervention Services, 2014b, p. 1). While speech and communication development are essential for children with autism, their ability to interact and socialize is also of great importance.

Social Interaction

Socialization is the process of teaching humans how to live in a world with other humans. The process starts at birth, and continues almost daily for the remainder of our lives (Rudy, 2014). Therefore, socialization is a vital component of autism therapy.

For children with autism, social interaction needs to be incorporated into their daily schedules. Even though they do not have the necessary skills to always interact appropriately with their typical peers, children with autism often have a desire to do so. They could be

overwhelmed by the process of socializing, or they will avoid the interactions even if they want to associate with others. Until this type of skill set is learned, some children will engage in attention seeking behavior to relate with others. (Autism Speaks Family Services, 2012; Gallagher, 2004).

Socialization embodies “a range of skills, including timing and attention, sensory integration and communication that can be built and layered to improve social competence” (Autism Speaks Family Services, 2012, p. 86; Hwang & Hughes, 2000). Once a student builds their confidence and competence in socialization, additional interactions will result. Behaviorists believe social development can be done through teaching and reinforcing the rules and structure of socializing, and this approach can be used in applied behavioral analysis therapy (Rudy, 2014).

Difficulty with social understanding makes it hard for children with autism to interact socially in their natural surroundings. According to Guldberg (2010), social difficulty includes “attending to social stimulus, initiating social interactions, and interpreting verbal and non-verbal social clues” (p. 171). Children with autism might display “inappropriate emotional responses” and have difficulty sharing “affective experiences and seeing other people’s perspectives” (p. 171). In addition, children are also likely to need support with social skills. Support includes “input related to understanding body language and eye contact, emotion recognition and understanding, perspective taking, and conversational skills” (p. 171).

Occasionally, the simple “unpredictability and noise of the presence of others” can be disturbing for children with autism. A student’s social capability develops skills of both imitation and reciprocal language. “Even a child with significant receptive and expressive language

challenges can work on social referencing and paying attention to the behaviors of those around him” (Autism Speaks Family Services, 2012, p. 86).

Autism Speaks Family Services (2012) indicate that social challenges in autism are “bidirectional. Bidirectional means the challenges may manifest as deficits (a lack of social initiation) or excesses (a one-sided conversation in a highly verbal student)” (p. 86). In this type of situation, there is a need to teach appropriate social behavior so there is an understanding of social expectations. Some people with autism “appear highly social, initiating social interactions but lacking reciprocity, being one-sided and overbearing” (p. 86). There is also a feeling of isolation for some people with high functioning autism. They can feel isolated, which can result in feeling rejected and lonely because they do not have the necessary skills to respond in social settings (Autism Speaks Family Services, 2012; Rudy, 2014).

In recent studies, research has indicated there is a link between autism and motor skills deficits. Nauert (2013) indicates that motor skills are embedded in everything people do, and have been “studied separately from social and communication skills in children with autism” (p. 1). It is believed that children with autism who have better motor skills are more likely to have better socialization and communication. Motor skill development can be addressed at a young age and is another avenue to consider for early intervention (Nauert, 2013). Another area of socialization places an emphasis on learning facial expressions. Many children with autism do not recognize or engage in facial expressions, or children have a flat facial expression and can be unresponsive in their environment (Kim, Wigram, & Gold, 2009; Nuner & Griffith, 2011). Therefore, this deficit puts children with autism at another social disadvantage. Improvisational music therapy is an effective intervention which helps children to learn to use facial expressions. Because children can interpret the music in their own way, this therapy becomes personalized in

that the therapist can teach the child facial reactions based on their response to music (Kim, Wigram, & Gold, 2009).

Boyd, Conroy, Asmus, McKinney, and Mancil (2008) explored the natural social interaction between children with autism and their typically developing peers. The study documented that there were more social interactions and higher rate of social initiations by children with autism when they were in small groups in a child-directed setting and had little adult involvement. Children with autism need to be taught play skills rather than learning through experiences as do typical children (Guldberg, 2010).

Nutrition

In addition to early intervention and other services, a variety of other treatments and methodologies exist, such as language, private treatment plans, support groups, and diet and nutrition. They are emerging and being used with success in the treatment of autism. For instance, some are finding that removing gluten (derived from cereal grains) and casein (derived from milk) from a child's diet may help to decrease some of the symptoms of autism (Seroussi, 2014).

As far back as the 1960s and 1970s, Dr. F.C. Dohan discussed how such casein and gluten-rich derived foods might worsen behaviors in schizophrenic children and children with other severe behavioral disorders, such as autism (Jyonoychi, Geng, Ruby, & Zimmerman-Bier, 2005). Dohan also noted that gluten and dairy-restricting diets, when used in the treatment of autism in children, could lead to improvement and even recovery, in many cases (Jyonoychi et al., 2005). Dohan based much of his research on reports he conducted and collected from caregivers, case studies, and observations. While the physiological explanation for autism and its link to certain dietary products and habits was not available at the time, a variety of other

studies offering thousands of successful cases have confirmed Dohan's work in the area of nutrition and diet and its impact on the child with autism (Jyonoychi et al., 2005).

In 1981, Dr. Karl Reichelt, Director of Clinical Chemistry for the Department of Pediatric Research at the Rikshospitalet (National Hospital) in Oslo, Norway, followed up on Dohan's work and theories and studied the urine of schizophrenics and children with autism. Reichelt found that these patients had some abnormal peptides in their urine. Those pieces of proteins were not completely broken into individual amino acids and whose sources were casein (derived from milk) and gluten, also referred to as gliadin (derived from cereal grains) (Jyonoychi et al., 2005).

Scott Faber is a neurodevelopment and developmental behavioral pediatrician at The Children Institute and is one of the emerging physicians who believe that autism is linked to toxicity in products and the environment, including in the child's diet (McNulty, 2008). Adding to the work with nutrition, Faber, in discussing his research on so-called clean rooms in the treatment of autism, "Environmental Pediatric Room," said, "What we would like to do is have kids live in this wonderful environment where they are exposed to almost none of the Industrial Revolution" (McNulty, 2008, p. 1). Faber is examining how such clean rooms, which are often used in industry and hospitals to inhibit bacteria, would affect children diagnosed with autism (McNulty, 2008).

Although Faber admits that toxicity is not the full cause of autism, he does feel that "there are going to be found many genetic causes, many environmental causes, and many genetic-environmental interactions" (McNulty, 2008, p. 1). Faber has been working to prove that toxins trigger autism symptoms and his findings indicate blood tests show 70 percent of his patients with autism have zinc deficiencies (pointing to problems with processing heavy metals).

The vast majority also has immune system problems of varying kinds and includes “combining traditional therapies and exposing children to a clean atmosphere and toxic-free diet” (McNulty, 2008, p. 1)

Some children with autism process peptides and proteins in foods containing gluten and casein differently than do other people. Gluten can be found in wheat products and in other grains such as barley, rye, and oats. Gluten can also be found in foods items made from the same grains. Casein is a protein which is found in milk and in some foods that contain milk products. This difference in processing may exacerbate autism symptoms. Some believe that the brain treats these proteins like false opiate-like chemicals. These pesticides can then alter a person’s response to their environment because their behavior and perceptions could be altered. When a person is unable to effectively manage gluten and/or casein in their diet, it is possible that gluten or casein could impact numerous conditions, such as autism (Millward, Ferriter, Calver, & Connell-Jones, 2008; WebMD, 2014b). The idea behind the use of the diet is to reduce symptoms and improve social and cognitive behaviors and speech. The significance of a gluten-free, casein-free (GFCF) diet for autism has not been supported by medical research; in fact, a review of recent and past studies concluded there is a lack of scientific evidence to say whether this diet can be helpful (Seroussi, 2014; WebMD, 2014b). The Associated Press (2013) has reported that the Food and Drug Administration (FDA) has set a new standard for labels that will make it easier for consumers to purchase food without gluten. Under the FDA rule, products labeled “gluten free” will have to be technically free of wheat, rye, and barley and their derivatives, and they will have to contain less than twenty parts per million of gluten. That amount is recognized by the medical community to be low enough so that most people with an intolerance to gluten can still process it without difficulty. While nutrition and diet may be

important for some children with autism, the use of assistive technology is another form of intervention that may be used to assist with communication needs.

Assistive Technology

All children have a right to express what they want and how they feel, but this is not always easy to do, especially for children diagnosed with autism. Assistive technology is any device, which includes specialized devices as well, that helps a person with a disability complete an everyday task (Ronski & Sevcik, 2005). The federal government recognized the importance of assistive technology for students when it revised the Individuals with Disabilities Education Act (IDEA) in 1997 and again in 2004. IDEA states that school districts must consider assistive technology for any child in special education. If there is a device that will “increase, maintain, or improve functional capabilities” then the school must provide services associated with technology for the child (PBS, 2013a, p. 1).

In his master’s thesis, Tin Fan (2012) researched enhancing learning with the use of assistive technology. Fan states IDEA 2004 defines an assistive technology device as “any item, piece of equipment, or product system, whether acquired commercially, off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a child with a disability” (Fan, 2012, p. 16). Tin shares this can include high or low-tech devices, products, or software designed to help individuals with disabilities in many different facets of their lives.

Augmentative and Alternative Communication (AAC) is “any strategy that helps a child participate and communicate” better at home and at school (Mirenda, 2001; PBS, 2013b, p. 1). Some strategies may be as simple as having a child point to a picture and use a gesture or begin with some basic sign language (PBS, 2013b). AAC interventions can also include a wide range

of strategies and procedures whose “common goal is to facilitate an individual’s ability to either communicate more effectively with others (expressive communication strategies) or understand communication from others (augmented input strategies)” (Mirenda, 2001, p. 141-142). Until recently, little attention has been given to augmented input strategies, but there is increasing evidence that many individuals with autism benefit greatly when “language input is augmented, particularly through the visual modality” (Mirenda, 2001, p. 142; Quill, 1997).

One of the most common augmented input strategies involves the use of “pictorial or written schedules to assist individuals to understand and follow predictable activity sequences” in school and at home (Mirenda, 2001, p. 143). There are two types of schedules that are most effective. The first is a ‘within-task’ pictorial schedule which assists with the completion of specific activities at home or at school. It includes a photograph sequence for a particular activity and the child learns to use the visuals in sequence order to complete a task (Mirenda, 2001). The second is a ‘between-task’ schedule which is used to access information about what would happen next as the child moves from one activity to the next (Mirenda, 2001). Mirenda’s results suggested that individuals with autism can learn to use pictorial or written schedules for “independent self-management” and in some cases reduces behaviors when supports are provided (Mirenda, 2001, p. 143).

In addition to task schedules, a child with autism can benefit from an AAC device with a picture on a communication device that actually says a pre-programmed word or message (PBS, 2013b). A Voice Output Communication Aid (VOCA) can help a child communicate in a variety of settings in school, at home, and in the community (PBS, 2013b). VOCAs are “portable, computerized devices that produce synthetic or digitized speech output when activated” (Mirenda, 2001, p. 146). When using a VOCA, a variety of visual-graphic symbols

are used to represent messages. The message is “activated when an individual uses a finger, hand, optical pointer, head stick, switch, or some other means to select a symbol from the VOCA’s display” (Mirenda, 2001, p. 146). Once selected, a voice activated message will be heard.

The implementation of assistive technology can redefine what is possible for students with autism. It is continually advancing for students with a wide range of cognitive, physical, and/or sensory disabilities (Autism Speaks Family Services, 2012). Autism Speaks Family Services (2012) states:

Smart phones and Apple iDevices (iPad, iTouch, and iPhone) have become increasingly popular because of the wide variety of applications (‘apps’) available to support a wide variety of needs. It is important to look carefully at the student’s needs in advance of putting devices and apps in use. Different apps will be used for different purposes, including communication, literacy, development, modeling and motivation, and organization. (p. 77)

A specialized speech generating device, or a device with a speech-generating app, may be highly effective for students with severe communication difficulties. Tin Fan’s (2012) study suggests the iPad is an effective teaching tool for children diagnosed with autism. It can be very engaging and easy to navigate. The researcher also suggests the “iPad brings simple accessibility and flexibility” to an inclusive community of learners (Fan, 2012, p. 34). The use of assistive technology for children with autism can easily be utilized in different settings. Wraparound service provides the collaboration between the school, home, and community.

Wraparound Services

Wraparound was initially developed in the 1980s as a means for maintaining youth with the most serious emotional and behavioral problems in their home and community (The Watson Institute, 2010; Walker & Bruns, 2006). In recent years, however, it has been applied within many child-serving settings as a way to improve outcomes for children and adolescents with emotional disturbance, autism spectrum disorders, and behavioral disorders (Walker & Bruns, 2006).

Wraparound services, also referred to as Behavioral Health Rehabilitation Services (BHRS), are designed to support or ‘wrap around’ the child and his or her family. The services focus on behavioral interventions and are provided in the home, in school, or in the community. Services are individualized to meet the unique needs of each child and family and build upon the strengths of the individual child to develop positive intervention strategies (Autism Transition Handbook, 2013; Pennsylvania Health Law Project, 2011; The Watson Institute, 2013; The Watson Institute, 2010; Vocational & Psychological Services, 2013).

The services are provided by trained staff, who works one-on-one with a child to help with emotional or behavioral problems. The clinical staff will work to transfer skills to primary caregivers and allow for the child with autism to function in their own environment using the supports. The family is expected to participate in services by helping to carry out the treatment plan, give feedback on progress, and eventually implement the strategies independently (Autism Transition Handbook, 2013; Reynolds & Dombeck, 2006; The Watson Institute, 2010).

Wraparound services begin when a psychologist, or sometimes a psychiatrist, evaluate the child to determine specific needs. A written evaluation report must specify the type of services the child needs and the number of hours needed each week. The report must also

explain why the services are medically necessary in the amount prescribed, and it should specify where the services should occur, and over what timeframe they are to occur (Pennsylvania Health Law Project, 2011; Vocational & Psychological Services, 2013). The standard wraparound package usually consists of several staff members to implement the treatment plan. The BHRS Case Manager is responsible for maintaining and coordinating the services. They also schedule psychological evaluations, re-evaluations, team meetings, accessing community resources, and ensure quality of services. The Behavioral Specialist Consultant (BSC) is responsible for collaborating with the child, family, and other treatment team members, and designing and implementing the support plan. BSC's provide assessment, program design, and monitoring of treatment interventions, but they should not provide direct service to the child. The Therapeutic Staff Support (TSS) is responsible for carrying out intervention, one-on-one with the child, as they are identified in the behavioral support plan. The TSS implements and models interventions to family, school and community members, and eventually will transfer skills to the natural supports. A Mobile Therapist (MT) will provide individual and/or family therapy to the child in the home. The MT will also identify the strengths and needs of the child and family and implement a plan with the family (Autism Transition Handbook, 2013; Pennsylvania Health Law Project, 2011; Reynolds & Dombeck, 2006)

If the evaluating doctor recommends wraparound services, the next step is an Interagency Service Planning Team (ISPT) meeting. The purpose of an ISPT meeting is to discuss the doctor's recommendation and obtain feedback from those who are most familiar with the child's behaviors, strengths, and needs. The Individualized Family Service Plan (IFSP) is a written document that is developed for each child and it outlines the intervention services that a child with autism and the child's family will receive (Positive Steps Therapy, 2014). One guiding

principle of the IFSP is that the “family is a child’s greatest resource, that a young child’s needs are closely tied to the needs of his or her family. The best way to support children and meet their needs is to support and build upon the individual strengths of their families” (Center for Parent Information and Resources, 2014, p. 5).

Wraparound services have also proven helpful in those situations in which a child diagnosed with autism is experiencing difficulties in learning, communicating, and socializing. Such services offer “individualized, needs-driven therapy at home that includes the entire family and incorporates intervention, Applied Behavior Analysis, and relational therapy” (Wesley Spectrum Services, 2014, p. 1). In addition, the goal of wraparound services is to stabilize the child and family and assist them in learning how to utilize the resources within their community to avoid problems in the future (Vocational & Psychological Services, 2013).

Many experts believe that an intense and individualized course of treatment offers the best hope for positive outcomes in the treatment of autism and that such work is often best achieved in the child’s home environment where the work and successes are shared with the entire family and by utilizing a wide variety of therapies that “include auditory, visual, and tactile modalities in collaboration with structured schedules and visual strategies” (Wesley Spectrum Services, 2014, p. 1). Incorporating a variety of approaches tailored to the child and focusing on stimulation and successes while involving entire families, enables the work to continue in an ongoing, routine manner in a way that is not work, but, is rather, daily living (Queer; Reynolds & Dombek, 2006). Both wraparound providers and educational specialists often utilize applied behavioral analysis when developing treatment options for children with autism.

Applied Behavioral Analysis

While many do find that an eclectic individualized approach works best, some experts have also found that intensive early intervention programs based on the principles of Applied Behavior Analysis (ABA) to be most effective (Aronson-Ramos, 2014; Autism Partnership, 2014; Holmes, 2009). Wraparound services refers to Behavioral Health Rehabilitation Services (BHRS), which are services that wrap around existing services and focus on children under the age of 21 to reduce or replace problem behavior with positive, socially appropriate behavior such as early intervention therapies used in children diagnosed with autism (Autism Transition Notebook, 2013; Child Guidance Resource Center, 2014). Wraparound services are generally family and child-centered and are able to be exercised in variety of settings, not just one place (Child Guidance Resource Center, 2014).

Wraparound or BHR services are defined by the behavior treatment plan, or behavior care plan, which is developed by a team that can include parents, therapists, a Behavior Specialist Consultant (BSC), coordinators, advocates, and even the child (Achievement Center, 2014; Pennsylvania Health Project, 2011). The child's progress is monitored with data and updated and reevaluated regularly to include goals, objectives, and treatments that focus on a variety of areas, including safety, functional, communication, social, and classroom behaviors with specific team members assigned and focused on specific goals which are individualized by child and family (Achievement Center, 2014; Kryk, 2013).

ABA is based on the science of studying human behavior which came about in the early 1900s. This concept was formulated almost 100 years ago by the founding fathers of behaviorism: John B. Watson, B. F. Skinner, and Ivan Pavlov (Athreya & Sharathchandra, 2013; Autism Partnership, 2014). In essence, it is a scientific approach of human behavior that looks at

the process by which learning occurs as the result of a selection of consequences of behavior. According to Kryk (2013), ABA “is a performance-based science dealing with observable and measurable behaviors” (p. 16). ABA works with socially and emotionally inappropriate behavior; therefore, skills are taught through systematic and positive teaching methods with a reliance on scientific methodology (Athreya & Sharathchandra, 2013; Autism Partnership, 2014) In other words, the adult will systematically encourage certain responses from the child and then respond in planned ways designed to either increase or decrease certain behaviors. In early stages of development, emphasis is put on encouraging the child to develop their own ideas and to reciprocate in social interactions (Holmes, 2009; Kyrk, 2013; North Shore Pediatric Therapy, 2014; PBS, 2014).

ABA works to minimize the problem behaviors and provide skills in an individualized approach (Autism Partnership, 2014). For example, behavior analysts using ABA have developed teaching strategies that utilize high levels of creativity and flexibility, which provoke the student’s motivational variables with ABA including such therapeutic devices as “DTT, Token Economies, Systematic Desensitization, and Teaching Interactions” (Athreya & Sharathchandra, 2013; Autism Partnership, 2014).

Even though ABA is done through discrete trials, this methodology should also be done in the community to teach generalization of skills. Children can be taught how to eat in public places, select clothing to purchase, and cross the street safely all through the principles of ABA. Providing clear “roadmaps through task analysis can help children on the spectrum exercise their independent functioning skills” (Hoaglund, 2014a, p. 9).

Cheryl Sandford (2009) researched classroom supports for students with autism and found positive attitudes toward using appropriate autism supports were necessary, but not

sufficient, to guarantee their regular use. She stated that the majority of teachers rated research-validated supports as important, but few reported utilizing those supports in their classrooms. For example, ABA has a long history of research validation across disciplines, yet she stated only 13.7% of teachers overall reported using it most or all of the time in their classroom. In her study, the respondents expressed a need for increased practical training. The respondents also indicated that, even when the educators intellectually understood best practice strategies and supports, they were unlikely to implement strategies effectively without practical, hands-on training. Because ABA has proven to be an effective strategy used for children with autism, it is equally important to understand and implement the functional behavioral assessment so that treatment options are similar across all environments.

Functional Behavioral Assessment

A Functional Behavioral Assessment (FBA) is “the process of determining the cause (or function) of behavior before developing an intervention. The intervention must be based on the hypothesized cause (function) of behavior” (Mueller, 2014; Starin, 2011, p. 1). The term FBA comes from what is called a functional analysis in the field of applied behavior analysis (ABA). In other words, the FBA is an approach to determine why a child acts a certain way. This assessment includes looking at non-academic factors which might contribute to a child’s frustration with learning (Morin, 2014).

The behavior usually serves a function, or purpose, for the child. Whether the child is aware of it or not, they act a certain way to get to a desired outcome or goal (Jordan, 2014; Morin, 2014). The key part of the FBA is to figure out what triggers certain behaviors. Sometimes teachers assume they know what is causing a child’s behavior because it has been witnessed when other children perform similar acts. However, it’s important to remember the

causes for some behavior can vary widely among children, especially those children who are diagnosed with autism (Jordan, 2014; Morin, 2014).

Although recent amendments to The Individuals with Disabilities Education Act now require school districts to conduct FBAs for problem behaviors, each school district is left to develop their own guidelines (Jordan, 2014; Starin, 2011). There are generally three ways to get to the function (or cause) of the behavior. This assessment is done through interviews and rating scales, through direct and systematic observation of a child's behavior, and through manipulating different environmental events to see how behavior changes (Starin, 2011).

When conducting a FBA, there are specific steps that must be included in the process. First, the problem, or inappropriate behavior, must be identified and described in terms that are observable and measurable. Second, a team of professionals (usually the general and special education teacher, the school counselor, the school psychologist, the school therapists, the administration, and the parents) collect data on the child's performance from as many sources as possible. Third, a hypothesis is developed about why the problem behaviors occur. Although it is an educated guess, it will be based on the data, and will help predict where and why problem behaviors most likely occur. Finally, a behavior plan is developed, which means changing something in the environment to see if it changes the behavior. A Behavior Intervention Plan (BIP) could be developed and it is designed to teach and reward positive behaviors (Jordan, 2014; Morin, 2014; Mueller, 2014; Starin, 2011).

In an educational setting, if teachers understand the conditions that lead to problem behaviors, then changing the conditions may reduce the need for the behaviors (Jordan, 2014). Positive teaching strategies such as providing structure, routine, and rewards for appropriate behaviors will help increase positive behavior skills in children with autism. In addition, the

methodologies mentioned and be implemented in an inclusionary setting to help the children succeed in the least restrictive environment.

Inclusion

Federal mandates, which include IDEA and No Child Left Behind (NCLB), have directed state education departments and school LEAs to “address the pedagogical needs of children with disabilities in the least restrictive environment, namely, inclusive classroom settings” (Loiacono & Valenti, 2010, p. 24). Inclusive education can be defined as “an educational setting in which students with disabilities have access to the general education curriculum, participate in school activities alongside student without disabilities, and attend their neighborhood school” (Bryant, Smith, & Bryant, 2008; Loiacono & Valenti, 2010, p. 24). Yet, as schools become more inclusive, the demand for educators to demonstrate the necessary skills and knowledge pertaining to intervention strategies and methodologies have become very important. Therefore, educators continue to be challenged to learn “disability-specific teaching skills” to address meeting the learning needs of a higher number of children with autism in the public schools (Loiacono & Valenti, 2010, p. 24).

Likewise, Guldberg (2010) broadly defines inclusion as “the process of identifying, understanding, and breaking down barriers to participation and belonging” (p. 168). Therefore, inclusion goes beyond education to cover the total experience of a child diagnosed with autism and his/her family (Guldberg, 2010). Guldberg believes there needs to be a focus on the child, but it is equally important to make adjustments to the learning environment or the way the teacher sets up the environment. This process requires a “transactional approach, which recognizes that autism is a transactional condition” in that it “affects interpersonal relationships and communication with other people, with learning developing between a process of

transactions between individuals” (p. 168-169). Inclusion then becomes a process of including and educating a child in a way that recognizes and assesses the child’s needs. It should happen in an “environment where staff is willing and able to be flexible in terms of how the curriculum is delivered” and to adapt to “routines and physical environment” within which the child is being educated (p. 169).

Doyle (2008), states inclusive settings stress independence for students, views all children as proficient learners, and appreciates the sense of a positive school culture and dedicated community. Likewise, Kluth states “if all schools were to create more humane, just, and democratic learning communities, then all students will be valued and seen as essential members of the school” (2010, p. 23). In addition, “inclusion is more than a set of strategies or practices, it is an educational orientation that respects and builds on the uniqueness that each learner brings to the classroom” (Kluth, 2010, p. 23). Therefore, a child with autism can experience success when in an inclusive setting in the general education classroom. As general education teachers experience positive interactions with children with autism, they will develop more confidence in their abilities to implement intervention strategies in an inclusive setting for these students.

The Watson Institute’s preschool model, Learning Experiences: An Alternative Program for Preschoolers and Parents (LEAP) is widely considered one of the most well researched programs for children with autism. It provides “high quality early intervention services to preschool children diagnosed with an autism spectrum disorder and their typically developing peers” (The Watson Institute, 2013, p. 6). The key component is there in an inclusive setting with a minimum of a 2:1 ratio of typical peers to children with autism. The program is based on the theories of “naturalistic teaching, inclusive programming, and family-centered programming”

(The Watson Institute, 2013, p. 6). By using this naturalistic or activity based teaching strategy in the inclusive program, it allows young children with autism the opportunity to receive their education in a typical setting. When students attend the LEAP Preschool program, the goal is to help students reach their full potential so that they can benefit from the curriculum in their home school. In the past three years, “over 60% of children diagnosed with autism, who attended LEAP Preschool, entered the regular education setting” in the child’s home school district (The Watson Institute, 2013, p. 7). The program is accredited by National Commission for the Accreditation of Special Education Services (NCASES), which is a subsidiary of National Association of Private Special Education centers (NAPSEC) (The Watson Institute, 2013).

Ten years of studies have revealed that the LEAP model is a success for children with autism and their typically developing peers, and according to LEAP’s Dr. Hoyson: "By having typical peers around them, talking and playing and trying to get them engaged in play, it helps (children with autism) to interact (Trozzo, 2006, p. 1). In addition, typical peers “can model the language. The more typical children you have, the better it is for the children with autism” (Trozzo, 2006, p. 1). Regarding concerns about the impact of the program on children not diagnosed with autism, Trozzo reports that Dr. Hoyson explains: “It's OK for typical children to be with children with autism. They don't regress at all. They become good play organizers” (Trozzo, 2006, p. 1). The typically developing children are taught appropriate methods for engaging the child with autism, such as tapping the child on the shoulder, which creates greater success in communication and social interaction (Trozzo, 2006).

LEAP also assists parents of children with autism by providing them with a home coordinator who helps in the handling of activities of daily living, such as shopping, bedtimes,

and meal times. Parents are also provided with a manual that helps them with basic behavioral management skills (Trozzo, 2006, p.1).

The school provides a link between earlier intervention work and kindergarten, and parents have reported that such an intervention program, geared to the preschool children, enables children to master goals, such as basic skills like drinking from a cup and learning the alphabet, which are needed to enter the next educational phase. The Watson LEAP program has helped hundreds of children, with most children easily able to be integrated into the public school system; LEAP is now available in a variety of states and Canada (Trozzo, 2006).

In addition to the LEAP program, Dr. Albert Bandura's theory also suggests that children can learn by observing and interacting with other students. Dr. Bandura's Social Learning Theory proposed that learning can also occur by observing the actions of others. His inclusion theory added a social element, which means that people can learn new information and behaviors by watching other people around them, and eventually imitate them. Known as observational learning, or modeling, this type of learning can be used to aide children with autism in an inclusive setting (Cherry, 2014; Sincero, 2011).

There are three core concepts at the heart of Bandura's social learning theory. The first concept is that children can learn by watching other people perform a behavior. In his famous Bobo Doll Experiment, Bandura demonstrated that children learn and imitate behaviors they observe in other people. In this experiment, an adult acted aggressively toward a Bobo doll while the children observed him. Later, when the children were given an opportunity to play with the doll, they imitated the aggressive behavior they observed (Bandura, Ross, & Ross, 1961; Cherry, 2014; Sincero, 2011). After his studies, Bandura was able to determine three basic models of observational learning. The first model is an actual live person who demonstrates or

performs a behavior, the second model is a verbal instructional model which involves descriptions and explanations of a behavior, and the third is a symbolic model which involves real or fictional characters displaying behaviors in books, films, television programs, or online media (Bandura, 1977; Cherry, 2014; McLeod, 2011; Sincero, 2011).

Bandura's second core concept deals with the notion that internal mental states are an essential part of the process. External, environmental reinforcement was not the only factor to influence learning and behavior. Intrinsic reinforcement is a form of internal reward, such as pride, satisfaction, and sense of accomplishment, after performing a behavior (Bandura, 1977; Cherry, 2014; Sincero, 2011).

The third concept is that learning does not necessarily lead to a change in behavior, but observational learning demonstrates that people can learn new information without demonstrating new behaviors. As described by Bandura (1977), Cherry (2014), and Sincero (2011), the modeling process includes four steps in order to determine if social learning is successful.

1. Attention – a child must pay attention to learn. Anything that distracts the child's attention will have a negative effect on observational learning
2. Retention – the ability to store information is also an important part of the learning process. The child has to have the ability pull up information later and act on it.
3. Reproduction – the ability to perform the observed behavior. Practicing the behavior by repeatedly doing it will lead to improvement and skill advancement.
4. Motivation – the ability to have the motivation to repeat the behavior that is modeled. Rewards and punishment play an important role, and children can be rewarded by demonstrating the behavior properly.

Bandura's theory has had important implications in the field of education. Both teachers and parents recognize the importance of modeling appropriate behaviors, and Bandura's social learning theory will benefit children diagnosed with autism because they are continually learning by observing appropriate modeling daily. Whether from other children, adults, or specialists, children with autism can utilize this theory and implement strategies to help them learn in an inclusive environment.

Because children with autism have such differing needs, experts find that working with the students in a variety of areas such as communication, behavior, social, life skills, and academics, they can best "achieve success in situations in which an individualized balance is achieved with the child's needs and the child's treatment in a team setting and in an integrated and eclectic manner" (Midwestern Intermediate Unit IV, 2014, p. 1).

It is important for educators to have optimistic outlooks in order to have a successful inclusion program for students with autism. Lynda Weller (2012) researched the importance of inclusion in an elementary setting and how the principals' attitudes towards inclusion were important. Weller studied six elementary principals who had a minimum of three years of experience, and she found their attitudes toward inclusion to be multifaceted. She found principals made placement assignments based on each case, that inclusion in the general education classroom benefited the child with autism and their typical peers, and that many administrators had limited knowledge and experiences with inclusion; therefore, this was a barrier when the administrators made student assignments. Her study reports the principals believed children with autism gained social skills by interacting with their peers, and she reported that the general education peers had positive experiences and often times learned empathy, which was a valuable skill to have in the future. She stated, "For a school to become

successful with inclusion, principals must see all students as permanent members of general education classrooms. Identifying attitudes toward inclusion of students with autism is the first step in moving toward more inclusive elementary schools” (Weller, 2009, p. 140).

In addition, Janine Sansosti (2008) researched the educators’ attitudes, decisions, and beliefs of inclusion for students with autism spectrum disorder. Sansosti’s participants shared positive ideas about the value of inclusion for both students with autism and their general education (GE) peers. Educators agreed that inclusive education was necessary and beneficial for student with ASD who, due to the nature of their disorder, are especially likely to need and benefit from access to typically developing peers who model age-appropriate language, social skills, and behavior. Several of Sansosti’s participants also suggested that GE participation can “force” children with autism to develop new skills because of the high expectations placed on them by both peers and adults, because of clear expectations about appropriate/inappropriate behavior in the GE classroom and because of the availability of positive peer models. The educators also believed strongly that inclusion could be beneficial for GE students by infusing additional curricular, environmental, or behavioral supports into the classroom that could provide support for struggling GE students and by helping them to understand and support their peers with learning and/or behavioral differences. Participants also suggested that inclusive models of service delivery had an impact on the social and professional climate of the entire school building by creating students and staff who were comfortable with seeing individuals with autism and other disabilities and recognizing them as an important part of the school community. Most educators acknowledged that mere exposure to students with disabilities was not sufficient to promote acceptance; additional training and guided support for interaction were also necessary to ensure that GE students and their peers with autism developed meaningful relationships.

Kluth (2010) believes “inclusion is more than a set of strategies or practices. It is an educational orientation that respects and builds on the uniqueness that each learner brings to the classroom” (p. 23).

Differentiated Instruction

Differentiated instruction involves students with learning disabilities, such as autism, who are given instructional methods and materials that match their individual needs (Scruggs, Mastropieri, & Marshak, 2012). The use of differentiated instruction requires both general and special education teachers to have flexible teaching practices as well as to be adaptable in adjusting the curriculum based on the student’s needs (Obiakor, Harris, Mutua, Rotatori, & Algozzine, 2012). Tomlinson (2001) provides five guidelines for successfully differentiating instruction in inclusive classrooms. The strategies include clarifying all key concepts and generalizations for students, using assessment as a teaching tool to extend, not only measure, instruction, making critical and creative thinking a goal of lesson design, engaging every student in learning, and providing a balance of tasks between what is assigned by the teacher and what is selected by the student. An advantage of differentiated instruction is that it provides learning opportunities for all students within an inclusive classroom.

Co-Teaching

In recent years, a popular trend in education moves toward the expanded use of inclusive classrooms. This trend has been accelerated by legislation that focuses on students with disabilities being served in the least restrictive environment. In special education, there is a ‘continuum of service’ that describes the various placements or settings in which educational services for students with disabilities can be provided (Mastropieri & Scruggs, 2010; Potts & Howard, 2011, p. 8). The placement that allows students the best opportunity to receive services

with their peers without disabilities is within the general education classroom which is generally considered the least restrictive placement option (Potts & Howard, 2011).

Cook (2004) defines co-teaching, as mentioned earlier in chapter 1, as having two or more certified educators who share instructional responsibility for a group of students in a classroom. Co-teaching, or collaborative teaching, is a method of delivering instruction to a diverse or blended group of students. In a co-teaching classroom, instruction is provided by two or more teachers to a heterogeneous group of students. Co-teaching takes place in the general education classroom with the general educator and a specialist, such as the special education teacher, reading specialist, and/or speech and language therapist, sharing teaching responsibilities (Brown, Howerter, & Morgan, 2013; Cook, 2004; Friend, 2008; Friend & Bursuck, 2012; Ploessl & Rock, 2014; SERC, 2014; Shumway, Gallo, Dickson, & Gibbs, 2011).

Lynne Cook's co-teaching model encourages different approaches for students with special needs in inclusion classrooms. The six approaches in the model offer a variety of teaching theories to provide the best possible environment for teaching students with special needs. The first approach is One Teach, One Observe and it is used when one teacher teaches the class while the other observes and records information and data about the instruction. The second approach is One Teach, One Drift and it is used when one teacher primarily teaches while the other circulates through the room providing unobtrusive assistance to students as needed. The third approach is Parallel Teaching and it is used when both are teaching the same information, but they divide the class group and teach simultaneously. The fourth approach is Station Teaching and it is used when each teacher teaches the content to one group and subsequently repeats the instruction for the other group. The fifth approach is Alternative Teaching and it is used when one teacher takes responsibility for the large group while the other

teacher works with a small group of students. The sixth approach is Team Teaching and it is used when both teachers are delivering the same instruction at the same time (Cook, 2004; SERC, 2014).

The Co-Design Model is defined as “the interaction of professionals engaged in collaborative efforts who share in the obligatory responsibilities for the administration of instructional and non-instructional duties and tasks within the educational setting” (Barger-Anderson et al., 2013, p. 34). The belief is to take the concept of collaboration in inclusive classrooms beyond the co-teaching model. This model stresses the importance of “collaboration that extends beyond the instructional aspects of planning and executing lessons” (Barger-Anderson et al., 2013, p. 34).

Whenever possible, students with disabilities should be taught in the least restrictive environment and among their typical peers in the general classroom setting (Shumway, Gallo, Dickson, & Gibbs, 2011). Least restrict environment can be established by providing intervention strategies in an inclusive setting for children with autism. Furthermore, The Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act of 1973 regulate the education of children with disabilities (Barger-Anderson et al., 2013; Wisconsin Education Association Council, 2013). IDEA ensures children with disabilities receive the services they need to be successful, and it also oversees how states and public agencies offer instruction to students with disabilities. IDEA assures these students are afforded a free and appropriate public education (FAPE), and local districts and teachers should determine what is suitable for each student (U.S. Department of Education, 2014; Wisconsin Education Association Council, 2013).

Summary

In clinical terms, there are a few absolute indicators that suggest a child should be evaluated for autism spectrum disorder. The three areas of concern are impairment in social interaction, impairment in communication, and repetitive behaviors and restricted interests (American Psychiatric Association, 2000; Corsello, 2005; Hilton et al., 2010; Wetherby et al., 2004).

It is clear, not only from the emerging research, but from historical data, the developmental delays of children with autism vary widely based on the severity of the diagnosis. Likewise, experts agree that the implementation of intervention strategies is the best solution to narrowing the gap between the child with autism and the typical peer, and helping to treat autism. Medical professionals continue to routinely screen for autism-like symptoms in order to locate, and sometimes isolate, abnormalities in the three core areas of socialization, communication and behaviors. Because each child with autism presents with a unique set of developmental challenges and symptoms, there are a wide variety of treatment modalities available.

While the causes of autism remain a great mystery and the spectrum of severity quite large, one fact is clear: Autism spectrum disorders affect every area of learning, from social and emotional awareness to the ability to process language and sensory experiences and integrate with one's own environment. Until research on autism and other developmental disabilities yields more information about how autism affects neurological function, children who are affected should continue to receive as much intervention as possible so that they may participate to their fullest potential within their school, home, and community.

Chapter Two examined the prevalence of autism, which included the characteristics, developmental delays and markers, warning signs, and screening assessments. It also included early intervention and intervention methodologies, special education, inclusion, and co-teaching models. Chapter Three, the methodology, will outline and discuss the method of data collection and the setting of this study. It will also outline the participants, the research instruments used, the procedures, and the plan for analysis of data.

CHAPTER 3

METHODOLOGY

Introduction

School districts are implementing the appropriate services through different teaching strategies and classroom models to ensure the success of all students, specifically those identified with autism. Understanding the definition of autism and the characteristics associated with it is imperative. As we begin to unravel the facets of the disorder, the diagnosis and evaluation process will become more efficient and effective. The earlier the diagnosis, the greater the chance the child will get the interventions they need to address their developmental delays (Aronson-Ramos, 2014; Holmes, 2009; Nuner & Griffith, 2011; Therapeutic Early Intervention Services, 2014a). Accurate diagnosis and early identification can provide the basis for building an appropriate and effective educational and treatment program for children with autism.

Early intervention applies to children of school age or younger who are discovered to have or be at risk of developing a handicapping condition or other special need that may affect their development. Early intervention “consists in the provision of services of such children and their families for the purpose of lessening the effects of the condition. Early intervention can be remedial or preventive in nature--remediating existing developmental problems or preventing their occurrence” (Kid Source Online, 2013, p.1).

When intervention is employed, incorporating a wide array of child-focused treatments that include the entire family network and a team of clinicians working together to include behavior therapy, socialization, play, language and speech therapies, children diagnosed with autism tend to fare better and are better able to be mainstreamed not only into age-appropriate schools, but in socially-appropriate situations, as well (Gulderg, 2010). Strong partnerships

between parents and educators, and the use of appropriate interventions to address the students' individual needs as well as modifications to the curriculum, are all essential elements for inclusive programs to be effective (Kluth, 2010; Loiacono & Valenti, 2010)

Statement of the Problem

There is a rise in the number of students diagnosed with autism in the public school system, and the percentage of students who require special services and interventions has multiplied over the past several years. As a result, public educators must be prepared to properly implement intervention strategies by using effective inclusion models to incorporate appropriate accommodations and placements for elementary-aged children with autism. The purpose of this qualitative study was to understand the perspectives of teachers regarding their experiences in implementing intervention strategies in an inclusive setting and how effective treatment plans could assist with the developmental delays of children diagnosed with autism.

Research Questions

This qualitative research study was guided by the following research questions:

1. What are teachers' perspectives on the effectiveness of intervention strategies that are used with elementary-aged children diagnosed with autism?
2. What are teachers' perspectives on the effectiveness of inclusion of elementary-aged children with autism in the general education environment?
3. What are teachers' perspectives on the effectiveness of alternative methodologies used to assist with communication skills, socialization, and repetitive behaviors of elementary-aged children diagnosed with autism?

Research Design

A qualitative approach was selected for this study as it provided the researcher an in-depth look at how the participants perceived the effectiveness of intervention strategies used in inclusive settings which are used to support elementary-aged children diagnosed with autism. The researcher utilized a semi-structured interview design to permit the participants to respond in open-ended format. Furthermore, the researcher developed an interview protocol which assisted in answering the research questions (See Appendix A). The primary vehicle for collecting data for this study was through the use of face-to-face, in-depth interviews with eight teachers who worked specifically with children diagnosed with autism. In addition, the researcher completed follow-up interviews with participants who had supplemental information to offer after the initial interview.

The researcher utilized triangulation to validate her research by corroborating with different teachers who offered diverse perspectives by deriving from multiple sources of information. The researcher also used member checking as a process to check the accuracy of the study to be sure the description was clear, fair, and complete (Creswell, 2012). In addition, the researcher consulted with experts in the field of education and autism to ensure the validity of the study (see Appendix B).

Participants

The researcher utilized a local Intermediate Unit's database in Western Pennsylvania to conduct a purposeful sampling of names and email addresses for potential teachers who met the criteria established to participate in this study (see Appendix C). The IU assisted with determining eligible school districts which met the criteria for selecting teacher participants. The intermediate unit was selected as a resource for this study because of the first-hand knowledge

and experiences of the teachers who work with specific programs designed to meet the needs of elementary-aged children diagnosed with autism. Using the list of eligible teachers, the researcher randomly selected 15 potential participants and the researcher sent an email with an attached letter explaining the purpose of the study and detailing the informed consent establishments (See Appendices D and E). A voluntary consent form was attached to the letter and was returned to the researcher as an indication of the participant's willingness to participate in the study. The sample population for this study was obtained from the first eight teachers who responded to the invitation to participate. The researcher contacted each participant using email, phone conversations, or personal contact in order to schedule a convenient time and location for the in-depth interview. Each participant was required to accept the voluntary consent requirements indicated by their signatures on the corresponding form prior to participating in the interview protocol (see Appendix E). The sample population for this study was taken from teachers who work directly with children diagnosed with autism.

The eight teachers worked with a population of both male and female elementary-aged children who were between the ages of six and ten years old. The teachers were highly qualified and had a certificate in both elementary education and special education, and they had a minimum of three years of experience working with children diagnosed with autism. Creswell (2012) defined purposeful sampling by explaining that the “researcher intentionally select individuals and sites to learn or understand the central phenomenon” (p. 206). All members of this population were individuals who had implemented intervention strategies, and the participants provided information on the effectiveness of those strategies. As a result, the researcher selected eight participants to help determine the effectiveness of intervention strategies used in inclusive settings.

In addition, based on professional experience in the field of education and autism, the researcher determined eight participants would provide adequate data to answer the research questions. Creswell (2012) defines saturation as "...a state in which the researcher makes the subjective determination that new data will not provide any new information or insights for the developing categories" (p. 433). Because all eight participants met the criteria for selection and worked with the same age group of students in an inclusive setting, they provided the researcher with adequate information to develop specific categories for data analysis and to determine a point of saturation.

Research Setting

This study was conducted in several locations. The researcher scheduled interviews with each participant at his or her convenience. The one-on-one, in-depth interviews with teachers were conducted at their respective school districts, or at a time and location that was convenient for the participant.

Instrumentation

For this qualitative study, the researcher developed a semi-structured interview protocol with approximately 20 to 30 questions (Appendix A) in order to give the researcher a guide while providing the participant with the opportunity to respond freely (Creswell, 2012). The primary vehicle for data collection was face-to-face interviews with teachers who worked directly with elementary-aged children diagnosed with autism.

Interviews resembled guided conversations rather than structured queries (Yin, 2003). The interviewer posed questions designed for the participants to speak openly and freely about their experiences and perceptions. Answers to the questions were built upon by using participant

responses and follow-up questions. Furthermore, additional questions provided some of the richest data as they built upon the research questions and the answers of the participants.

As the research questions outlined the study, the interview questions supported the understanding of the research and were more specific to the purpose. The interview questions in this study were developed by the researcher, and the questions materialized from personal experiences, from working with teachers and therapists, and from current research in this study. Also, the interview questions materialized by researching theories described by Dr. Phil Strain's LEAP Inclusion Theory, by Dr. Albert Bandura's Social Learning Theory, and by Dr. Lynne Cook's interpretation of co-teaching principles and practices. Teacher interview questions are presented in Appendix C. In addition, alignment of the interview questions to the research questions are presented in Table 2 on page 100.

Table 2
Research Question Alignment To Interview Questions

<p>1. What are teachers’ perspectives on the effectiveness of intervention strategies that are used with children diagnosed with autism?</p>	<p>Teacher Interview Questions 3-teaching elementary education 4-professional development 6-description of autism 7-characteristics observed 9-techniques to teaching 10-intervention strategies 11-supplemental strategies 26-functional behavioral assessment 28-resources</p>
<p>2. What are teachers’ perspectives on the effectiveness of inclusion of children with autism in the general education environment?</p>	<p>Teacher Interview Questions 5-right to be educated/autism 12-co-teaching 13-inclusion program 14-IEP goals 15-achievement level/autism 16-differentiated instruction 17-pull-out program 21-social skills 27-learn by observing/modeling 29-challenges 30-rewards 31-advice</p>
<p>3. What are teachers’ perspectives on the effectiveness of alternative methodologies used to assist with communication skills, socialization, and repetitive behaviors of children diagnosed with autism?</p>	<p>Teacher Interview Questions 18-language development 19-communication 20-socialization 22-repetitive behavior/sensory input 23-speech and occupational therapy 24-wraparound 25-nutrition/diets</p>

Validity and Reliability

In this qualitative study, both internal and external validity were considered. The credibility of the instrument was an important factor in determining internal validity. Therefore, the degree to which the results uncover a solution or help to solve the problem was a form of validity (Creswell, 2012). In this study, the researcher interviewed and collaborated with eight individuals who were teachers who worked with elementary-aged children diagnosed with autism. The researcher employed triangulation because application of this method allowed for the researcher to validate her research by cross-referencing different sources and corroborating from different groups of people who could offer diverse perspectives. Cross-referencing was done collaboratively with the data and the literature to recognize emerging themes (Creswell, 2012; Lichtman, 2010). The researcher employed member checking as a process to have participants check the accuracy of the study. The description of the participants' accounts needed to be clear, fair, and complete. The participants helped to determine if the description was realistic and if the themes were accurate (Creswell, 2012). At the conclusion of the interview, and upon completion of transcription, participants received a copy of the transcript of their responses. Participants had an opportunity to verify the accuracy of the transcript or further discuss their ideas through email, phone conversation, or personal contact. In addition, they had the opportunity to indicate their approval of the transcript, discuss any concerns, or provide additional information. Three participants added additional information to the transcript, highlighted it, and emailed it back to the researcher. Two participants corrected minor errors and emailed the transcript back to the researcher, and three participants emailed the researcher and indicated the transcript was fine as it was presented. If the researcher needed further clarification, she contacted the participants for a follow-up conversation. The researcher also

utilized expert testimony as a form of triangulation. The researcher consulted experts in the field of education, special education, autism, and inclusion to help determine if the study was relevant, timely, and a good addition to the current body of research on autism. The researcher emailed the experts directly and included copies of responses in the appendix as evidence for triangulation (See Appendix G).

In addition, external validity is frequently described as transferability, or “the degree to which results of the qualitative research can be generalized or transferred to other contexts or settings” (Trochim & Donnelly, 2008, p. 149). Furthermore, reliability signifies the degree to which different participants arrive at comparable explanations (Lichtman, 2010; Trochim & Donnelly, 2008; Wiersma & Jurs, 2009). External validity and reliability were enhanced by the expansive description of the data collection and analysis methods to ensure the study could be replicated or simplified in other frameworks (Lichtman, 2010; Wiersma & Jurs, 2009). Although this study was designed particularly for intervention strategies used with elementary-aged children diagnosed with autism, it is possible, with modifications and adaptations, to use the intervention strategies and plans in a secondary environment, an age group which was not covered in this study. As long as the researcher preserves precise and specific reports to be included in the study, reliability will be improved greatly (Creswell, 2012). The researcher recorded all data with a recording device.

Pilot Procedures

A pilot study was performed to confirm the validity and reliability of the interview questions and to rehearse interviewing techniques and procedures. Once permission was granted from Indiana University’s Institutional Review Board, the pilot was conducted at an elementary school in Western Pennsylvania. The researcher conducted a focus group for the pilot. The

group was comprised of a purposive sample of highly qualified elementary and special education certified teachers, with a minimum of three years of experience, who taught elementary-aged children with autism and who implemented intervention strategies in inclusive settings. The researcher had five participants for the teacher focus group. The researcher met with the school employees through the permission of the superintendent and the building principal. The researcher piloted the interview questions with all participants in a group. The group reviewed all questions, added any pertinent information, deleted any unnecessary information, and reviewed the questions for accuracy. The focus group met for approximately one hour in length. The researcher updated the interview protocol and determined if the questions were sufficient. Involvement in this pilot study was voluntary. The participants were advised of the focus group and they signed a release to signify their consent to participate. All participants were ensured their identities would remain confidential. The discussion of the focus group was audio-taped and later transcribed, and the transcripts were offered to each participant for confirmation. The responses of the participants in the focus group helped to reveal potential questions or gaps with the interview questions. Once the data were assembled after the pilot focus group, the researcher categorized the responses by using a color-coded highlighting system for each research question. The coding system helped the researcher establish themes and determined the strengths and weaknesses in the interview protocol; therefore, some of the questions were omitted, reworded, or amended before the actual study.

Pilot Results

Highly qualified elementary and special education teachers evaluated the interview questions utilizing a focus group format. The purpose of the focus group was to have open dialogue about the interview protocol and provide the researcher feedback regarding the quality

and clarity of the questions. Through the discussions there were questions that needed to be omitted or modified in some fashion, and there was positive feedback on the range of questions related to children with autism.

The participants did not believe question 8 was relevant. The participants thought the question was irrelevant because they already teach children with autism. They thought this would be a good question for a general education teacher, but the special education teacher already knew what to expect from children with autism in their classrooms. Therefore, this question was omitted.

Participants expressed a concern that questions 10 and 11 were too broad to answer. They believed there were numerous intervention strategies and supplemental strategies that could be used with children with autism, and these questions could provide a vast amount of information and a variety of answers. They thought it would be better to narrow the intervention and supplemental strategies to five of the most widely used strategies and allow participants to expand upon their experiences with more limited options. If participants wanted to expand beyond these strategies, they had an opportunity to do so in a question later in the protocol. As a result, strategies were limited to five potential possibilities.

Participants were worried that questions 12 and 13 were too long. They believed the sub categories for both questions were confusing and they did not understand the significance of describing modifications as they relate to the co-teaching model. They also believed that the success rate for utilizing the model depended heavily on the resources for each teacher in each district; therefore, they thought it was best to just allow the participant to openly talk about their co-teaching and inclusion programs and experiences. Therefore, sub categories to these questions were omitted.

Participants thought question 17 was too vague. When referring to a pull-out program, they were not sure if this question was referring to speech and occupational therapy, or individual work with the autism support teacher. Although the researcher understood their concerns, the question referred to pull-out programs in general. The researcher did not want to lead the participants in one direction with this question; therefore, the question remained in the protocol but was reworded to describe how it worked best for the student. Later in the protocol, question 23 addressed speech and occupational therapy, specifically. After some discussion, the focus group thought this question was necessary to keep in the protocol because if the participant did not discuss speech and occupational therapy in question 17, then those strategies could be specifically discussed in question 23 and the researcher wouldn't lead them in one direction as a result. There was discussion of combining the questions, but this was rejected because each question served a specific purpose to address supplemental strategies.

The participants thought questions 19, 20, and 22 had too many sub categories and were too broad to answer. After some discussion it was agreed upon that the sub categories could add some valuable information and the researcher should keep them to prompt the participants if they did not discuss certain areas. For example, in question 19 they liked the idea of having the participants expand upon communication to also discuss augmentative devices, they liked that question 20 provided specific prompts for how socialization activities could be arranged, and they like that question 22 explored sensory diets and adaptations for these types of sensitivities. However, they did not think it was necessary to include the challenges teachers face in all three of these areas. They believed this was redundant because of the nature of the disorder and because each child is unique on those areas.

Finally, the focus group of participants thought the interview questions were very good overall. They believed they addressed all major components of the disorder and were very specific to students with autism. They also believed the questions would generate a lot of great discussions and the answers would provide detailed information. The focus group of participants liked that each question asked the participant to describe their experiences. They thought by allowing the participant to describe their thoughts, feelings, and ideas, this would elicit open responses and give the participants an opportunity to elaborate.

Procedures

After confirming the participation of each teacher prior to the interviews, the researcher then scheduled meeting dates and times with each participant based on their availability. All data were collected through semi-structured interviews to allow for an informal setting and advancement of the interview. For each interview, the researcher followed a protocol to establish consistency amongst the participant interviews. The participants were assigned a pseudonym number to conceal their identities and genders and to ensure their anonymity. Furthermore, the researcher eliminated any identifying information from the transcripts. The full transcripts were only accessible to the researcher.

Gay, Mills, and Airasian (2009) state “A great deal of data analysis occurs before data collection is complete. Researchers think about and develop hunches about what they see and hear during data collection” (p. 458). Therefore, reflection became an important part of the interview process. The researcher wrote notes in a binder throughout the interview process and included reflections after each interview. The researcher transcribed each interview soon after completion in an effort to adjust the interview protocol, if necessary. This information was utilized in the data analysis.

Data Analysis

The researcher transcribed each interview and saved them to a flash drive as individual Microsoft Word files. After the interviews were transcribed, they were printed to analyze, categorize, and code the data. The researcher read and commented on the transcript, and this procedure allowed the researcher to develop a coding structure as themes began to emerge from the data. An initial list of ideas were established as the data were first coded using a general approach. Bazeley (2007) supports this strategy by stating, “Your initial coding task, therefore, may simply be to ‘chunk’ into broad topic areas, as a first step to see what is there, or it may be that you want to identify just those passages which will be relevant to your investigation” (p. 67). Creswell (2012) describes the coding process as a way to make sense out of the data. He describes it as “an inductive process of narrowing data into a few themes by dividing data into text segments, labeling segments with codes, examining for overlap and redundancy, and collapsing the codes into broad themes” (p. 243). Therefore, as particular themes emerged, specific coding was applied. For this process, the researcher organized the responses for each research question by using a color-coded highlighting system, and the researcher analyzed the data to look for similar themes or patterns of responses. The results of the coding procedures were reported in Chapter 4.

Summary

Autism is a spectrum disorder which means there are certain symptoms and characteristics that are present in children diagnosed with the disorder. There is a broad variety of indicators, and they range from mild to severe. Usually the symptoms of autism appear during the toddler years, or the first two years of life. Often times there is a regression of previously learned skills which indicate a possible delay in developmental milestones. Although children

with autism can be described with deficits in communication skills, socialization interaction, and repetitive behaviors, they can also exhibit any combination of the behaviors to a mild or severe degree (Autism Society, 2014a; James, 2013; Rocky Point Academy, 2009; The Early Learning Institute, 2014). While autism is a lifelong condition, all children and adults benefit from interventions, or therapies, that can reduce symptoms and increase skills and abilities. Although it is best to begin intervention as soon as possible, the benefits of therapy can continue throughout life (Aronson-Ramos, 2014; Autism Speaks, 2014b; Brown, Gerber & Oliva, 2014; Hilton et al., 2010).

Autism is a lifelong disorder that is becoming more prevalent in our society. Although there is no known cure due to the complexity of the disorder, it is important to advance research to assist children with autism to lead functional lives. The disorder remains largely mysterious even though there are many new treatments, interventions, and educational strategies that can contribute and support the needs of the child. It is imperative that therapists and educators develop and provide the pedagogical strategies to allow children with autism to embrace learning in a way that supports their unique learning style. Through these strategies and methods, there is hope that every child will be fully understood and educated in appropriate and effective ways, and be given the opportunity to develop to their fullest potential.

Chapter Three examined the method of data collection and the setting of this study. It also outlined the participants who were studied, the research instruments used, the procedures for collecting data, and the plan for analysis of data. Chapter Four will focus on the data that was collected from the interviews with participants and an interpretation of the findings.

CHAPTER 4

ANALYSIS OF DATA

Introduction

The purpose of this qualitative study was to understand the perspectives of teachers concerning their experiences in implementing intervention strategies in an inclusive setting and how effective treatment plans could assist with the developmental delays of children diagnosed with autism. Qualitative data were collected from one-on-one, in-depth interviews with eight highly qualified special education/elementary education certified teachers. Each teacher had a minimum of three years of experience. The data were reviewed to determine how the participants perceived the effectiveness of intervention strategies which are used in inclusive settings to support elementary-aged children diagnosed with autism. The interview questions were created to answer the following research questions:

1. What are teachers' perspectives on the effectiveness of intervention strategies that are used with elementary-aged children diagnosed with autism?
2. What are teachers' perspectives on the effectiveness of inclusion of elementary-aged children with autism in the general education environment?
3. What are teachers' perspectives on the effectiveness of alternative methodologies used to assist with communication skills, socialization, and repetitive behaviors of elementary-aged children diagnosed with autism?

This chapter presents a synopsis of the teacher participants, and it contains an analysis and summary and of the elementary teachers' answers to the questions presented in the semi-structured interview. The teachers were asked a sequence of questions. They were asked to share information about their teaching background, and then they were asked to share their

beliefs about autism. They were also asked specific questions regarding both teaching and intervention strategies used with children with autism.

After examining the qualitative data gathered through the interview process, both common and opposing beliefs were examined. There were a few main points of alignment that materialized and were relevant to the responses discussed by the participants during the interview process. First, each child with autism has a unique skill set and because each child is so different, there is not one specific strategy that will work with every child. Second, there was a strong opinion that children with autism should be included with their general education peers, but only to an extent that is appropriate for each individual child. Third, general education teachers struggle with implementing interventions for children with autism. Finally, there is strong commitment on behalf of all the autism support teachers to implement new strategies and utilize a variety of supports to assist their students with autism.

The data were examined for analysis. The participants' responses were assessed to ascertain similar and contradictory opinions regarding inclusionary practices. The participants' responses were also analyzed to identify comparable and conflicting beliefs associated with teaching techniques and intervention strategies utilized for students with autism. Also, the teachers' comments were examined and compared to Strain's inclusion model, Bandura's social learning theory, and Cook's co-teaching model.

Review of the Interview Process, Data Collection, and Analysis

The researcher collected data by interviewing eight highly qualified elementary and special education teachers on their perspectives of implementing intervention strategies used in an inclusive setting with elementary-aged children with autism. The interviews with participants were accomplished over a five week period of time. The researcher utilized an intermediate

unit's database to conduct a purposeful sampling of names and email addresses for potential teachers who meet the criteria established to participate in this study (see Appendix C). Using the list of eligible teachers, the researcher randomly selected 15 potential participants and an email was sent with an attached letter explaining the purpose of the study and detailing the informed consent establishments (See Appendices D and E). A voluntary consent form was attached to the letter and it was returned to the researcher as an indication of the participant's willingness to participate in the study. The sample population for this study was obtained from the first eight teachers who responded to the invitation to participate. The researcher contacted each participant using email, phone conversations, or personal contact in order to schedule a convenient time and location for the in-depth interview. Each participant was required to accept the voluntary consent requirements indicated by their signature on the corresponding form prior to participating in the interview protocol (see Appendix E).

The researcher conducted the in-depth, one-on-one interviews at a time and location that was convenient to each participant. A semi-structured interview protocol was used to guide the interviews (Appendix A). Each interview continued for approximately an hour in length, and additional questions were asked as needed. With the participant's permission, each interview was recorded utilizing a recording device.

Upon completion of the interviews, which were recorded for accuracy and coding purposes, the researcher transcribed the data. A transcript of the interview was provided to the participant for member-checking. Participants had an opportunity to verify the accuracy of the transcript and further discuss their ideas by communicating through email, phone conversations, or face-to-face meetings. The participants had the opportunity to indicate their approval of the

transcript, discuss any concerns, or provide additional information. The data collected from individual interviews were analyzed and coded to determine common themes.

Participants' Demographic Data

Participants were selected by means of purposeful sampling. The teachers were all highly qualified with a certificate in both elementary education and special education, and they all had a minimum of three years of experience working with elementary-aged children diagnosed with autism. To conceal the participants' identities, they are labeled with an identification number in the order in which the interview took place. Participant one is labeled, P1, participant two is labeled P2, and so on ranging from P1 to P8 (Table 3).

Table 3		
<i>Demographic Data for Teacher Participants</i>		
Participant Number	Years as an Elementary Special Education Teacher	Years Working with Children with Autism
P1	6	10
P2	8	8
P3	23	22
P4	17	15
P5	4	5
P6	7	12
P7	16	16
P8	11	11

General Teaching Background

All teachers have been in the public school setting for a minimum of three years. The participants ranged from having four years of experience to 23 years of experience as a classroom teacher. P1 has worked all six years in a public school setting. Likewise, P2 has six years of experience in public schools, but also worked for two years as a Head Start teacher with an IU. P3 has worked for 13 years as a teacher through an approved private school and ten years in public education. P4 has worked in public education for nine and a half years and has worked for seven and a half years as a support teacher with a local IU. P5 has worked for four years in public education, and also worked for a year as a personal care nurse. P6 has been in her current teaching assignment for four years, was an intervention teacher for two years with a local IU, and was a long-term substitute for one year. P7 has been a teacher for 16 years in public education. P8 has taught for a total of 11 years; three in her current district and eight in a previous district.

When asked about the number of year the participants have specifically worked with children with autism, their answers varied. Some teachers have worked exclusively with children with autism, others have either worked additional years outside of their teaching career working with children with autism, while others had worked in different programs and/or assignments prior to working with children with autism.

In addition to her teaching career, P1 has worked as a behavioral specialist with children with autism and has volunteered with autism organizations for four years. P2 worked for two years with an early intervention program prior to being hired as an autism support teacher. P3 worked one year as a life skills teacher before spending the next 22 years working as an autism support teacher. P4 worked for two years as a general education teacher and then spent 15 years working as the support teacher. In addition to four years as an autism support teacher, P5 also

worked as a personal nurse with an autism student for a year. Prior to P6's teaching career, she worked as a nanny for a family with a child with autism and has volunteered with local autism organizations for 15 years. P7 and P8 have spent their entire teaching careers working with children with autism, and P7 has also worked as a behavioral specialist.

When asked about working with elementary-aged children, all participants expressed a general love and passion for teaching this age group of students. Specifically, participants viewed this important job as building a foundation for the future.

Participant Response

I think the elementary age is more of a foundation. That is where you're teaching the skills necessary for them to be successful members of society and apply higher level thinking skills as the curriculum progresses. So it's not just the math and the science, you're also teaching the problem solving skills and just basically how to be functional in society.

Participant Response

I love it because they are at a formative age that you can really mold them. I think it's so important at the early ages to do this – to really do a good job with teaching them the basics and getting them ready to move on.

Participant Response

I think by being an elementary-aged teacher, you are the one who is going to be the building block for these kids. They are going to learn their basic concepts from you. If they don't get those basic concepts, then they are not going to be able to progress and be able to succeed.

Participant Response

You help build their foundation, especially in kindergarten and first grade because some of them have never been in a school setting or anything. You are really helping them to build a foundation and you are setting the stone for the rest of their school career.

Participant Response

It's my job and my responsibility to expose and model these young children to life skills that they will need in order to continue grow as independent individuals.

Participant Response

I feel like being an elementary-aged teacher is very important. You are not only teaching the basics of education, which are fundamental to your whole life, but also social skills and general human values.

Participant Response

I guess it means building that foundation. These are the essential building blocks. If they don't get what they need at this level, it will be hard for them to progress later on. I think that's what it means to me – to be that builder of that foundational knowledge so that they can move forward in their education.

Teacher Responses to In-Depth Interviews

Participants answered a series of interview questions regarding their perspectives of effective intervention strategies, their beliefs about inclusion of children with autism in the general education setting, and the effectiveness of utilizing alternative methodologies to assist children with autism. This section will be divided into three parts, with interview questions and answers addressing the information outlined above. Each interview question is analyzed to address the research questions with representative responses shared in each section. The

responses provide a comprehensive understanding of the answers given by the participants and their beliefs regarding autism, inclusion, and intervention strategies. The questions cover a wide range of material, and some were designed to be very specific while others were designed to be broader in scope to provide an assortment of answers. A benefit of this analysis is that the coding allows for each question to help illustrate the needs of children with autism.

Summary of findings for Research Question 1 – Intervention Strategies

Participants responded to a series of questions asking their perspectives on the effectiveness of intervention strategies that were used with children with autism. The participants were asked about some of the characteristics of autism and what they have observed in the children they teach, as well as the professional development they have received in order to help implement effective intervention strategies. The participants were also asked to describe specific techniques of teaching intervention strategies and the process by which they applied these strategies with their students.

Three of participants described autism as having differences in abilities. Particularly, it was discussed that communication deficits are the key factor, along with sensory, socialization, and academic concerns. The participants' responses to describe autism are outlined below.

Participant Response

Well, the word autism means “self” and the basic idea is that a child with autism is more into themselves and don't see the world in the same way that we do, and some of those areas that show up are in communication. Many children have the ability to speak, but are not able to use it functionally. There is a wide range in autism going from severe on up to Asperger's Syndrome which is a very high functioning type of autism. So there's a

wide spectrum or range of levels, but most of them all have some sort of social issues with being around other people and not understanding social cues.

Participant Response

When you think of autism there is not one word. Everyone with autism is going to be different. Students with autism may have difficulties with academics, communication, behavior skills, social skills, and sensory needs. There are different ranges of students with autism. There are some that are low, almost on the mentally retarded range, then there's the very high functioning in these areas. There are also different ranges in communication. Some kids are non-verbal and others have very high communication skills.

Participant Response

It was really hard to come up with just a few words because I think every kid with autism is so different. I guess I would say to describe autism in general, I would say there is a communication barrier and a lack of social awareness.

Three participants described autism in very unique ways. Their responses are as follows:

Participant Response

I like to say that autism is like snowflakes – no two are exactly alike. Autism is considered to have different spectrums of disorders such as the intellectual disabilities such as having poor communication skills. I also consider those who have exceptional abilities under that spectrum as well.

Participant Response

When I describe autism to someone who didn't know anything about it, I would say it's like living in an M-n-M. And as a teacher, as a parent, as anybody that has contact with

this person, you are breaking little holes in the M-n-M shell. You may never break the whole shell, but as much as you can poke holes in the M-n-M, the more light comes in – the more life, of what we would consider to be normal, would be introduced to that child or person. I would say it this way for someone who doesn't know anything about autism.

Participant Response

Interesting. Unique. Amazing. I would choose these words because they are each, just like you and me, everyone is different. Some are strong in some areas; some are very knowledgeable in some areas. They are amazing in their own little ways.

The consensus of all participants is that each child is different, so the characteristics of autism they present are also very different. Three participants described communication, senses and sensory input, and social interactions as characteristics of autism.

Participant Response

The main thing is the communication, it's being able to express themselves. Their wants, that's the biggest thing. To tell us whether they are feeling happy or sad or angry. I find that typically children with autism are able to do that as frequently as a general education student would. Another characteristic would be receptively. Just following the simple directions, but again every student is different and you have the varying degrees of autism, but overall I would say that communication is the biggest part.

Participant Response

Again, all of our kids are so very different. Communication is definitely one of the big characteristics – the communication difficulties. Even those children that do have the verbal skills, getting their point across sometimes is difficult – it's the expressive communication. And the receptive, too. When you give them the directive and you are

trying to say something to them and they may not get it. Another characteristic is definitely the black and white thinking – the very literalness.

Participant Response

Definitely there are main characteristics which is lack of speech or communication skills, social deficits, and sensory needs. In my head, sensory is the number one biggest need.

When the participant was asked about why sensory was so important, she responded:

I think it's like being hungry. If you are hungry, you can't really concentrate on anything. That's why I always have food in my classroom. If kids are hungry they can't really do anything else. If a child with autism has a sensory need, they can't do anything you want them to do until that sensory need is met. That's why I have always done sensory first. I don't think everyone sees that as the most important thing, and I don't think teachers understand and know enough about sensory integration.

Four participants described more specific characteristics of autism based on their experiences with students over time. Their responses are outlined below.

Participant Response

Communication wise, a lot of them are echolalia, which is repeating words or phrases or TV shows or videos, those sorts of things that they heard that they repeat. I often see children lining things up, or do things that are repetitive. They have certain things, or certain preferences, in many different areas. It could be their play skills, or it could be their work skills, but they have definite preferences, or obsessions. My students with autism really respond well to highly structured activities. They like routine and they like sameness. Eye contact is another area. Most people with autism do not have good eye contact.

Participant Response

Children with autism may have difficulty with social skills. They can have limited peer interactions. You may see on the playground an autistic student walking around the outside of the playground not engaging with the other students. They can have personal space issues – they don't understand the boundaries when in others people's space. Some may want the touch of others-Some do not like it. Children with autism may have difficulty with communication skills. They may have difficulty being able to express their wants and needs. They can have behavioral needs. Some can have verbal stims such as repeating phrases or TV shows/movies that they have heard. They can have hand stims such as flapping. They may have difficulty staying on task, sitting in a chair, or sitting still. They could have verbal outbursts and talk out in class such as yelling, screaming, or crying. Not all children with autism may exhibit all of these characteristics.

Participant Response

I have seen a lot of poor social communication skills such as the no eye contact, inability to engage in reciprocal conversation, unable to pick up social cues from others, the echolalia, difficulty expressing emotions, the verbal outburst, and also sensory needs, poor nutrition, repetitive movements, the need for routine, lack of personal space, self-injuries, and walking on toes to just name a few.

Participant Response

When they say “you have met one child with autism, you have met one child with autism” – it's true. Their senses are, a lot of time, off balance and they are all different. One child might like touch and one child may hate touch. One child might be sensitive to

light, whereas the other children are sensitive to sound. A lot of them learn by sight, with visuals, and less vocal and less language.

Surprisingly, the participants' professional development experiences were very diverse. Four participants have had extensive training either through their district or from previous work experiences.

Participant Response

I am a licensed behavioral specialist, so I was able to get that through the Board of Medicine and then I am also certified in the VB map and the TEACCH method through the intermediate unit. I have also had training within Functional Behavioral Assessments, data collection, and mand training, (having the child make a request and then giving a reinforcer). All go along with professional development of applied behavior analysis.

Participant Response

I probably can't tell you all of them, but one of the most important one to me was when I became a teacher trainer in the TEACCH model (Treatment and Education of Autistic and Communication related handicapped CHildren). I went to the University of North Carolina for a few years for different seminars and then through the Watson Institute, I first got the training myself – it's a week-long training. And then the next two summers I was a shadow trainer and then after that I became a trainer and I've done that for probably fifteen years. That's probably the most extensive training I've gotten. I've certainly been to numerous seminars and trainings through PATTAN of other places having to do with sensory integration, or anything that has to do with children with autism - like the social stories.

Participant Response

As a former BSC, I had tons of training. I had it pretty much on everything – teaching modalities for autism, behavioral interventions, and social skills.

Participant Response

I have done tons. I have gone to the Penn State Autism Conference at least eight or nine times. The IU always sent us every year. The district has also sent us. I have done several trainings with PATTAN. I have done ABA training with PATTAN, and elsewhere, where it was available.

One participant shared that an outside organization provided training for teachers in the school and provided specific training for the classroom.

We've had a reputable organization come for both in-service training and classroom training. The first year they were here for more intensive classroom training and the second year they gradually faded their support. We were trained on verbal behavior and worked a lot with the ABLLS assessment. The ABLLS assessment is an assessment, curriculum guide, and skills tracking system for children with autism or language delays. We had a lot of students that needed school readiness skills such as being able to sit in the chair, being quiet, and paying attention. The trainer came into the classroom and worked a lot with intensive teaching these readiness skills.

Three participants had limited professional development. Although they did attend some workshops, there is not consistent training made available. They were permitted to participate in non-district training, but it varied with each district.

Participant Response

I have my master's in special education. A lot of my classes did regard autism and autism spectrum disorder. I have also done SRU's autism conference.

Participant Response

Three years ago I went to the autism conference at Slippery Rock University. Two summers ago I went to the autism society conference in Pittsburgh. At the beginning of the year I went to a social thinking conference in Pittsburgh. And then currently, I'm in graduate school at SRU for special education and autism.

Participant Response

There will be an occasional in-service and just the basics. Personally, as a teacher, I don't think it's enough, especially when there is inclusion in your school.

The participants spoke about numerous approaches to working with children with autism, and they described specific teaching techniques that have worked in their classroom. Half of the participants spoke specifically about providing the students a clear routine and a visual schedule. Although each teacher manipulates the schedules in the best interest of their own students, several thought this was one of the best teaching approaches to working with children with autism. Three participants also believed that the students needed to be given the opportunities to practice what they have learned.

Participant Response

The biggest thing is the visual component, whether it's a visual schedule or assembling a first-then board so it is able to be faded within the child's environment. Having clear expectations, that's a huge approach for the student to understand exactly what you are asking, how it needs to be done and then testing independently from there. And also

setting up opportunities. If you are teaching child about addition in a regular education setting, you want them to experience the modeling and having them engaged within the lesson. Give them opportunities to practice. Give them opportunities for error correction and even being around peers is the biggest thing. In addition, presenting the student with positive reinforcement to increase not only positive behaviors, but also communication skills and academic components.

Participant Response

Definitely having a structured routine. I have a visual schedule for my students. They know the layout and it's very much the same. Even I use the same words when I talk about our transitions. I let them know when there is a one minute warning and we rotate. They know they have to complete the centers before they get a break. So I keep a very routine based environment in here for them. The timers help ending preferred activities and ending break times. I use social conversation bubbles with some of my students that have difficulty understanding if they are interrupting or if they are telling a teacher no – why that is not acceptable. Having that visual in front of them helps. As part of the social skills, I use puppets. They love them. I use the PATHS unit – it's Promoting Alternative Thinking Strategies – and they use Twiggles and his friends which are puppets. I really enjoy it and the kids enjoy it, and it works on feelings and emotions and behaviors.

Participant Response

You want to have a consistent routine and schedule. They students need to know the routine. I use a 3-2-1 warning before we get started. You have to give frequent breaks and visual schedules. You will get through an academic lesson when you are able to

lower the anxiety in the student and that's a big thing. One of the biggest approaches is planning and knowing your students and knowing what's going to upset them and what's going to make them melt down. You have to use those techniques to help you plan your lesson. They need visual instruction, visual rules, visual classroom schedules that also helps them.

Five of the participants also talked about specific instructional approaches they utilize when working with children with autism. Their responses are listed below.

Participant Response

Because I have had the TEACCH training, that's basically what I use and prefer, and I believe that it has made a tremendous difference in the students' ability to learn. We use a left to right work system. The importance of it is that reading is left to right and most things in our world are left to right. So teaching them a left to right work system is certainly helpful. In their independent work areas, we provide them with mastered skills so that they can go and do that work and practice something that they have already learned how to do but they are practicing it in many different ways. It builds their independence which I think is a huge thing for children with autism. They feel more confident and they are very happy in the fact that also it is structured and routine so they are comfortable. So, using those independent work stations in that format has been very good.

Participant Response

When I 'm working with just the autism support students, discrete trial I think worked very, very well. I have used the TEACCH method. I like it, but I like the Ables Assessment better. Ables is like a guide on what every child should be able to do before

Kindergarten. So when I work with students with autism, I make programming as for what they were on in the Ables Assessment. Then I would know what we needed to work on.

Participant Response

I teach a lot of sign language to my students. There are certain signs that we do. For example, if one of my students is calling out to me. I can just give them the sign and they know that means “wait”. Or if they ask me something I can sign for “later”. They know what they signs mean. With my academic part, I use the Edmark Reading Program which works on the word recognition and each word has a sign. It helps with their academic goals as well. At first, I’ve had kids come in and they can’t read. With this program, they are reading short phrases. It gives you the word with the sign and pictures and you can use both. You can do word matches to pictures. It’s very routine and it doesn’t get too complex for them even though they grow into different lessons. It keeps a very similar base on it, and I love it. My kids have benefited from it.

Participant Response

I use Board Maker Share. It’s animated and interactive so you can make up boards. I have some boards that I have and put it on the promethean and it will read to the kids. We can make up stories on there and they will read it back. We have done a bunch of activities with it.

Participant Response

We do center rotations. We utilize some aspects of TEACCH with that – we do the shoe bin boxes and we use the schedules. So we do take approaches form the TEACCH methodology to differentiate the instruction for all the kids because they are all so very

different. We also use the verbal behavior approach. We use Language for Learning which is an SRA program and it has a lot of verbal behaviors integrated in it.

When asked what an SRA program was, the participant described it as follows:

It's a direct instruction program. They do reading, they do math, and they do language.

So we use a lot of the SRA direct instruction with our kiddos in here. It doesn't work for everyone, so we differentiate that with the kids, too. I don't subscribe to one curriculum in here. I have tried with my younger kids to use the general education curriculum but have found that it moved at way too fast of a pace for our kids and they just couldn't keep up with it. So I do often times pull snippets from that. And again, I do the SRA, but I always supplement it with different things because I haven't found, and it's probably like that with the regular education kids too, there isn't one perfect awesome curriculum.

When describing intervention strategies that were used in the classroom with their students with autism, the participants were very specific about what they believed were effective strategies. Four of the participants spoke specifically of Discrete Trial Training (DTT). Each one of the participants used it successfully with their students during their educational career.

Participant Response

Once a rapport is built with the student, then I think the academic part can come in as well as other interventions. Discrete trial teaching I think works best, from my experience, with students who are non-verbal and do not have the basic skills of identifying objects or identifying people.

Participant Response

DTT I have used when one of the more severe children had first come and didn't use a whole lot of language. So, teaching him from the photo library and pulling out the main

photos of everyday photos and have them touch and say the word. First, I would say it. That seemed to help with getting his language out. Once he became familiar with that, we then moved on to the sentence strip.

Participant Response

For working with children with autism, specifically discrete trial training was the best. I got the most out of kids when it was followed correctly and when it was used 24/7.

Participant Response

The Discrete Trial Teaching we use quite a bit. Again, we use the curriculum, but often times I use the SRA but if I am teaching a new skill, we use discrete trial. Usually when I'm taking data for my progress monitoring, I set my IEP goals and objectives up with discrete trial to be able to take data that way.

One participant utilizes floor time with the students in Kindergarten, first, and second grades. P5 uses it daily with the students and found it to be most beneficial for break times.

We do floor time a lot. When they come in here for social group, it's their break time. They have a couple of minutes for break. That's when we really play with them. We play with the blocks and with Legos and we work together so it's creating more on what they are interested in. I have brought in play clothes – like the costumes – and the kids were looking in the mirror and socially went to a whole another level by just putting on a mask and a cape and pretending they were Spiderman. That was a big benefit. We are more on their level. We can sit in a group and work on things.

Six of the participants utilized the Picture Exchange Communication System (PECS)

with their students with autism. Although each use it a little differently with their students, they use it for making schedules and for teaching lessons. So many children with autism are visual learners, so the participants believe this is a beneficial intervention strategy.

Participant Response

PECS is basically using small visual pictures for the students. We make a lot of the students' schedules with that. We do a lot of the behavioral type things. We come up with pictures, schedules, the pictures that we use for teaching time, the pictures that we use for communication throughout the school, because our students are highly visual learners, so that's an extremely good way to provide them with that little extra besides the written - they are getting a visual as well. It's extremely helpful, particularly with the schedules.

Participant Response

PECS is used to prompt and reinforce strategies that will lead to independent communication. Students would give me pictures with words or sentences to request or express their wants or needs. With technology today we are getting away from the PECS and doing more various communication devices.

Participant Response

For the PECS, we use sentence strips. We started with just water, or drink, or bathroom, and now it's a full sentence. It's a strip on a spiral and it has little tabs, kind of like a binder, so you can flip. If he says water, then you can flip through drink, and have him point to "I want a drink" there is a focus with touching the words. It transfers because we try to use the verbal cues - "use your words".

Participant Response

I have used the PECS – more at snack time having the child communicate what they wanted to eat more of or drink more of – they had to get the picture and put it on their strip.

P7 and P8 utilize PECS, but have a different perspective on whether it's used in the appropriate way, or in the way it was intended to be used with children with autism.

Participant Response

PECS I have used in the classroom. I think there are some disadvantages to them in that they can go away, they can fall off, and they can break. They need to be used with kids very young because as kids get older they just ignore them. If a kiddo isn't trained to use PECS at an early age, they will never work.

Participant Response

The PECs – I'll say we use pictures, we use a lot of the pictures, but not necessarily the picture communication exchange the way it was set up to be. I have never been trained to use it the way it's supposed to be set up. So, I think a lot of people say they use PECs, but they don't use it as the communication exchange system.

Seven of the participants referred to the TEACCH model and found it to be a successful strategy to use with students with autism. Each one of them discussed using this method to increase the students' independence so they are able to do their tasks. Most participants believe that using independent work stations in the classroom has been beneficial as well, and they utilize the "bin system" to complete independent assignments and create independence.

Participant Response

Using independent work stations in this format has been very good. The other part of the TEACCH model is having different areas within the classroom designated for different things. I do computers in the back, and then they know that if it's computer time they go to the computers and they stay there. Again, that builds that structure and knowing where they are supposed to be and when. Obviously using schedules is a huge one for the students so that they know their routine and what's happening because often times their anxiety levels rise when they don't know what's happening or what's coming next and that's extremely important for them.

Participant Response

We use parts of the TEACCH system. We use a bin system where students complete previously taught skills to increase their independence.

Participant Response

Each child has a bin and they have different activities and on the charts it shows when they achieved a task, like sight words. They cross it off and it is teaching them more of what they are doing and making them responsible, to an extent. This has worked wonders because it gives them the independence to do it, so we are starting off with simple things.

Participant Response

I have not been officially trained in TEACCH, but I have studied it myself, and we do take aspects of it here. We do the shoe box bins; we use the schedules on their desks for first, next, last. So they do follow it and we do take aspects of TEACCH as well.

Two participants spoke about verbal behavior. The general consensus is that it is used

for language development and can be used as a supplement to the intervention strategies already mentioned. Because the students often have difficulty with communication, this method is used to help the student with requesting skills.

Participant Response

I do a lot of the modeling with verbal behavior in my classroom. For example, I point to my lips, and I use a lot of response time, and withholding. I might put my hands on their hands and look at them in the eyes like I'm waiting and I won't move on – the whole world stops until they respond the way I want them to.

Participant Response

I do work a lot with verbal behavior for the language skills. We do the Language for Learning and like I said, it does take some aspects of that. We also work with it on our own – I have picture cards and we kind of just go through it on our own. But I have tried to work with them on it a little bit as far as how to implement a little bit of it with the kids – with the TACTs, the mand, and the intraverbals and all of that.

The researcher asked for clarification on TACT, as this was a new strategy mentioned by a participant. P8 responded in the following manner.

TACTs with verbal behavior would be labeling. To mand would be a request, and TACT would be a label. So that's all part of verbal behavior and teaching those verbal skills. So we do use – we do take aspects of a little bit of everything and whatever seems to work for our kids and we are constantly revamping in here.

Additionally, two participants spoke of a special program called Teach Town. They explained it in their responses below.

Participant Response

I also have what's called Teach Town. It is a computer program for students with autism. It's an amazing program that goes through everything from phonics to reading to social skills. It uses the same characters and it's a lot of repetition and it's a lot of socialization things. The program does the simple things we take for granted the things we don't think of. I have seen that it teaches you how to interact with students. Most need that visual. They need to be able to see two people interacting to be able to apply it to a real life situation.

Participant Response

Teach Town is a little bit of everything. We really utilize it. They have four volumes. This one is a social skills aspect, so that's why (the pictures) they are up there to show emotions. They have a short video for the social skills of what the social skill is so there is a model. Then they also have the Teach Town basics for the computer. It does the cognitive, the language. It gives you the goal, the objectives, and related skills. It even has a video model.

When asked to describe the supplemental intervention strategies that were used in their classrooms with students with autism, participants were eager to share what they have used as effective teaching practices. All eight participants responded by simultaneously using social stories while teaching social skills. In particular, participants noted the importance of providing the students with a visual aide to assist with language barriers, but also social and behavioral situations. They noted the stories are made specific to each child and can be used over and over again for retention of learning. This method provides a lot of structure, and it was noted with

structure and expectations, they are teaching the students' independence. As a result, they will gain the skills they need so the teachers can fade back from the prompts.

Participant Response

I use a lot of social stories to teach social skills, and I typically use this during transition. So if a student is going from my room to the general education setting for a gym class, I provide social stories that transition them into the classroom, but also providing them with those social skills with the modeling so that if they walk into the gym class they know that they are able to greet the teacher, they know that they are able to find their spot on the mat. They know exactly the structure of the lesson so I am able to decrease that anxiety but increase their participation.

Participant Response

We use both social skills and social stories and we teach social skills using a variety of methods. There are some really nice videos available online and we have some books that are specifically designed for social skills. That's certainly an area of need for our students, so anything that we can come up with to teach them is great. That's primarily because children with autism don't automatically understand it or get the appropriate information from watching their peers. Our students have to actually be taught them. So that's why it's a very big area.

Participant Response

The social stories we do. I have a bucket over there and I pull out social skills books. We just did one *My Mouth is a Volcano*. We were working on interrupting an erupting and it was a really good example. A student would interrupt me during the book, which is exactly what the kid in the book was doing, so then he figured it out and he raised his

hand when he had a question in the middle of the book. They definitely make an impact on the kids.

Participant Response

I look at the kid and I see what social skills they need to be working on. We work a lot with engaging with others, engaging with peers, both in the classroom and in the general education classroom, and engaging in appropriate ways. We do a lot of social stories.

There are some good ones out there that are already produced for you, but usually I create them on my own. I try to use digital camera pictures of the students as opposed to board maker pictures because I think they are more meaningful for the kids.

As with social skills and social stories, six participants utilize modeling and video modeling together. They believe that modeling is the most fundamental thing they do because the students need a visual reminder to help make appropriate choices.

Participant Response

I can definitely say that modeling is number one. You have to model for the kids what your expectations are since the very beginning of school – like how to sit in a chair and how to push your chair in. There are so many little things that need to be modeled that sometimes get overlooked. In the past, I've done the video modeling. I tie it in with my social skills and my PATHS unit. We work on making appropriate choices. I would videotape the kids making those choices and then let them watch themselves. I found it effective because I could show them the positive video modeling – it did make an impact because they saw themselves making that choice.

Participant Response

Modeling, we have done this especially with interacting with peers. We model how to do that.

Participant Response

We do a lot of modeling. We can have a meltdown in the middle of reading and we have to stop everything and we kind of go into a social skill lesson because that's the best time to teach it is when it happens. You need to teach that social skill when it happens. It's like you have to get it immediately. If you wait until your next break they won't remember. We do a lot of modeling that way. I also have videos that show how to act appropriately.

Participant Response

I see video modeling as a very good teaching tool for the students because they are visual. If they look at themselves doing something both appropriately and inappropriately to see the difference, I think it shows them what the best way to do that particular task/skill would be. You might video the child showing the correct behavior, the behavior you are looking for. Then you show them when they are not doing the behavior and you can show them side by side. Look at the difference here and which one should we be doing. They can visually see as opposed to me standing here and saying Don't do this. It's a much better way for them to see those kinds of things.

Participant Response

In the classroom, I have done modeling with both peers and adults with both academics and social skills. I have also done video modeling. I will video tape them doing both positive and negative behaviors. For example, I will tape them working quietly and then

when they exhibit yelling, vocalization and hand flapping. We'll have them watch the video to view which is proper behavior. It gets them to stop and think. Sometimes they change and sometimes they don't, but at least it gets them to look at their behaviors and think about what they are doing.

Participant Response

Modeling for them is more important than language, I think. Just by showing them they pick it up faster even if you have to do it hand over hand. I could stand up there and give a whole lesson and it's not going to mean a thing because the repetition and the modeling of it is better for some students.

None of the participants utilized cognitive behavior therapy; however, a few mentioned using schedules and visual and picture cues as other intervention strategies that have been successfully used in the classroom.

The participants were also asked to share any intervention strategies they utilize in the classroom for their students who may have difficulties in the classroom. The participants use a variety of adaptations for both disruptive and attention seeking behaviors. It was common among all participants that there is essential to get to know the students and understand their needs and wants. This alone can help to decrease behaviors, but they also shared specific strategies they used as well. The participants shared the following information regarding attention difficulties.

Participant Response

With attention, I think the biggest is chunking. Chunking any assignment. Chunking the lesson even and having it written out or visually shown to the student that there is a beginning and end to this lesson. It's considered a non-preferred, but after this you get

maybe your preference is the iPad. Model and go through what they need to do. We need to listen, and then have them earn what they want.

Participant Response

When they have attention difficulties, you have to figure out what is going to grab their attention. I have a sand box we use. A lot of my kids don't like to write – writing is a big issue – it can be very frustrating and overwhelming, and can be too much. Even as something as simple as allowing the first graders to practice their spelling words, so we'll do it in shaving cream. If you take away the paper and pencil, so you have someone who all of the sudden likes to write. So the sand or the shaving cream or with the wiki sticks, they can spell out stuff.

Participant Response

The adaptations that we have used include visuals in the form of one picture or multiple pictures such as a schedule for either the day or for an activity. If a student is having attention difficulties, we have broken the worksheet into smaller sections. Whiteboards have also been used by copying items from the board onto a whiteboard so that eliminates distractions when trying to focus.

Participant Response

We do have plans put in place. We have figits, we have the breaks for frustration levels, and we have a bunch of things that they can utilize – wiki sticks, water bottle with glitter, a vibrating pen, a squeeze toy.

Participant Response

Attention – we use a lot of visual cues to get them back on task and a lot of prompting. We have a sensory area – we have a bubble tube, bean bags over there. We try to teach

the kids how to request that before it gets to the point where they are exploding to say “I need a break. Can I have five minutes?” Sometimes it’s just adapting the work – sometimes they don’t want to do the work or sometimes the work is frustrating and we make the adaptation in the work.

The participants shared the following information regarding disruptive behaviors. Four participants utilize some type of behavioral plan to deal with disruptive behaviors and help the students make more positive choices.

Participant Response

Disruptive behavior – this is when the behavior plan comes in. The color system I have in my room allows them to move up and down for behaviors. They all start on green and they can move up or they can move down. If they end the day on pink, they get a prize out of the prize box. That color down below is red, which is when they lose their behavior party. Even if they go to red, they can still shoot back and end the day on pink and they know that. For disruption, we use the Class DoJo program and use it on the projector in the classroom. I project the pictures onto the screen (each picture has a student’s name with it). If you click on B’s name, and he has had amazing manners, the projector will make a positive sound for everyone to hear in the class. And if you click on D, and he told me a lie, the sound will be a “bing” (or a more negative connotation). So the sound alerts the students in the class to positive and negative behavior. This helps with the disruptive behavior because it’s a visual for the students, too.

Participant Response

Adaptations with children who are disruptive – one of the first things is adding more structure. If they don’t have a schedule, we provide them with a visual schedule.

Sometimes we often have to do a schedule within a schedule. So say it's time for them to come to the morning meeting, and their schedule says to come to the morning meeting, but when they get here, they don't know what's going to happen. So provide them more structure and adding another schedule – so when we come to morning meeting we are going to listen to this song, we are going to read this book, we are going to do the calendar. So if you provide them with more detail that is often a big help.

Participant Response

Teaching the child we use social stories for a lot of those areas when there's disruption problems or attention problems. We might use social stories or we use timers – anything that might be helpful for them to see visually. Often times we use the “first/then” type of structure. We would say first we are going to do this and then provide them with something that's motivating to them so that they know what's coming up. I use the sensory room. We try to do those things proactively rather than after the behaviors have occurred so if you see them to start to escalate, you want to right away provide something. It could be the vest, or take a walk to the sensory room.

Participant Response

For disruptive behavior, I have used video modeling with showing the student how they look when they are doing the proper behavior and then how they look when they are doing the disruptive behavior.

Four participants were directly involved in writing functional behavioral assessments and shared their experiences in writing them and implementing them for their students. They believed in providing the student more structure and teaching them appropriate replacement behaviors.

Participant Response

The common theme I find it relates to the communication aspect. It's a trial and error, it's a lot of data collection but eventually it all kind of comes full circle, but even though you don't find the cure, you're able to find the antecedent for it. And again it can change from day to day.

Participant Response

There is a goal attached to a functional behavioral assessment – a behavior type goal. It's teaching them first what is the behavior you want them to learn and working towards whatever goal it is that you put in the FBA. The assessment itself gives us a lot of information about why the student is doing this particular behavior.

Participant Response

I collaborate with my paras, with the speech therapist, with the OT, because the speech therapist can look at it and tell me if it's a communication issue. The OT can look at it and tell me if it's a sensory issue. So, we collaborate a lot on those when we need to do the functional behavior assessments.

The researcher asked the participants to describe any important resources they found to be valuable in teaching effective intervention strategies. Although their answers varied greatly, every participant believed parents were their number one resource. There was a true belief that there is open communication between the parent and teacher and they were a valuable resource in setting assisting with their students. Four participants shared that they get phone calls or emails in the morning alerting them to bad evenings or rough mornings so that the teacher is aware before the day starts that there might be a potential issue with the student.

Participant Response

Parents – definitely. You get those parents that are very helpful and want you to know about their kids.

Participant Response

I like to know and talk with the parents. I communicate a lot with the parents, even throughout the course of the day. I touch base with them at least once or twice a week by phone. Parents definitely help.

Participant Response

Parents, certainly, because they are front lines. They know the child the best and what works with their child is probably different than what works with another child because these kids are all so different. It's extremely important to hear the parents and what they can provide to us as far as information.

All participants noted that other teachers and therapists were also great resources. They are able to help the teacher daily with language development, fine motor skills, sensory needs, and technology/devices, and they can help incorporate different activities into the support and general education classrooms that will assist the child with autism.

Participant Response

Therapists are a huge – I have learned a lot from them and ways to work with these students and help them with a lot of the methods that they use with either speech or OT or a lot of the sensory kinds of things.

Participant Response

Speech therapist and occupational therapist are valuable resources. The speech therapist will help us with the students' communication devices by helping us make specific

lessons on the device or basic information on how to use the device in our classrooms.

The OT helps us with the students' sensory needs or fine motor skills.

P1 and P8 also shared they specifically like to blog and follow other teachers.

Participant Response

I'm a real big fan of blogs. So with websites I follow a lot of teachers who have classroom blogs where they post different strategies they use within their classroom.

Different ways they maybe handle data collection. It's a lot of the behind the scenes stuff that they go over which allows me to focus more on the kids.

Participant Response

There are a lot of good autism blog sites out there. One I really like is Cindy's Autistic Support. She is a teacher in Pittsburgh and so she's local and she has her own website that has a lot of really great resources on it.

Four participants enjoyed using Pinterest and several other websites to find valuable information and resources to support them in their classroom.

Participant Response

I have a Pinterest account. I love finding things there. I had redone my boards because they were overflowing with school resources on them. I'll find different things, and there are some I'd like to try, but we are just not there yet.

Participant Response

Believe it or not, Pinterest – I get so many great ideas for my classroom on Pinterest. I think you have to have the want to learn and the desire, but I think the resources are endless.

Participant Response

I found Pinterest – you can type anything into Pinterest and find resources. You can type in whatever you want and get tons of information. And Pinterest will take you to those other sites, too. A lot of people re-Pin, so you find a lot of really good sites that you might not have otherwise found. So, definitely websites.

Participant Response

There is a wealth of good websites that I get teaching materials from. The two we use most often are Starfall.com and abcy.com. There are a couple of reading programs that we use – Reading A to Z is very good, and we use the News-2-You program which is good. That one is actually specifically designed for students in special education. Its current event news – a weekly newspaper that is online and it provides a huge amount of resources to go with it in all areas – math, reading, science and social studies – everything. I really like that one.

For curriculum resources, seven participants noted some of the supplemental sources they use with their students.

Participant Response

We use a lot of alternate curriculum and we use some general education curriculum materials if our students are capable, but we use a lot of alternate curriculum and find things in different places.

Participant Response

We use the Touch Math program.

Participant Response

Board maker is a necessity. Boardmaker lets you create printed materials, like communication boards, sequences, and schedules. The program allows you to choose topics, symbols, labels and color boarders. With boardmaker, I adapt worksheets, make picture cues, and write sentences/poems using pictures and words.

Participant Response

I use PECS daily. PECS is a communication program designed to develop functional communication skills in students. It is a multi-stage program that in the initial phases helps guide students to request highly desired items by delivering a single picture symbol to the hand of a communication partner. In the later phases students combine symbols on a sentence strip to exchange with a communication partner to make requests or comments. PECS is designed primarily for students who are not initiating communication or approaching their communication partners.

Participant Response

With my itinerant students, I have used a workbook called The Coping Skills Workbook by Lisa Schab. It's teaches nine steps of coping skills such as adjust your attitude, deal with your feelings, discover your choices, take care of yourself, ask for help, give yourself a break, take one step at a time, accept imperfection and plan ahead.

Participant Response

We also use Clicker 6. Clicker 6 is a reading and writing software tool. Students can type into Clicker 6 from the keyboard, or use Clicker Grids to enter words and pictures to help them. Each sentence is automatically read out as it is typed with each word highlighted as it is spoken. Students can also illustrate their own books or documents.

Participant Response

I use PATHS, Edmark, the social stories from Carol Gray, and I find a lot on the computer as well. My one kid likes Standing Tall – this is old school cassette tapes and they focus on different skills and characteristic building. There is a book that goes with it and we listen to it and we talk it out.

P3 and P8 also shared some of the books they like to use in class.

Participant Response

Books – there are many we use for social skills and activity books. One of my favorite are the file folder books because we make many file folders for the students to learn because they are highly visual and they are manipulative. So, there is a whole series of file folders you can make. I have used those extensively.

Participant Response

Books – I have a plethora of books. I do look at, I have a book that describes the whole TEACCH curriculum – I've gone through that. Any book about autism that I can get my hands on.

Summary of Intervention Strategies

All participants described numerous characteristics and ability levels of children with autism, and how the children presents unique sets of circumstances which makes utilizing intervention strategies unique to individual children. The participants described many techniques to teaching children with autism such as having visual schedules and clear routines throughout the day. They also advocate arranging an environment for the students to be successful and, they provide the students an opportunity to practice what they are learning during the school day.

All participants utilized some type of intervention strategy in their classroom with their students with autism. Some utilized the TEACCH model, while others used Discrete Trial or PECS, or some used a combination of all three. Some of the specific supplemental techniques used included social stories, video modeling, and visual schedules. In addition, participants shared strategies for making adaptations for both disruptive and attention seeking behaviors. Specifically, participants discussed utilizing behavioral plans and functional behavioral assessments.

Although the professional development experience differed among teachers, they were able to identify and observe similar characteristics of autism among their students and implement the best teaching techniques to meet the needs of the individual student. All participants shared numerous resources and found the implementation of supplemental strategies to be effective.

Summary of findings for Research Question 2 - Inclusion

Participants responded to a series of questions asking their perspectives on the effectiveness of inclusion of children with autism in the general education environment. The participants were asked about their general thoughts on children with disabilities learning in the general education classroom. In addition, the participants shared their perspectives and experiences with co-teaching, inclusion, pull-out programs, and differentiated instruction in the general education environment. The participants also shared their perspectives of children with autism learning by observing their typical peers in the in the academic and social environments. Finally, the participants were also asked about their perspectives of the challenges and rewards of inclusion and what advice they would offer to teachers in the general education classrooms about children with autism.

When the researcher asked the participants to describe their thoughts regarding the notion of inclusion for children with disabilities in the general education classroom, all participants overwhelmingly believed that children with disabilities have a right to receive their education in the general education classroom or in the least restrictive environment. They believed it will not only benefit the child with autism, but it will also benefit their typical peers. Most of the participants believed the amount of time in the general education classroom should be dependent on the needs of the child; therefore, not every child should be included in the same way or for the same amount of time.

Participant Response

First off, for inclusion I think the earlier the better at the elementary setting. Therefore, not only the child with autism, but the other elementary students are coming into their own and figuring things out and gaining the experience - the social, the emotional - and I think the earlier the better with inclusion and then students who do have autism, you can see their areas of concern and their areas of strengths compared to their typical peers.

Participant Response

All children have the right to be educated in the least restrictive environment. There are students who can get great benefit from being with their gen ed peers, and there are other students who have a lot of difficulty in that environment. It's not to say they may at some later point be able to do, it's sometimes difficult to – that's the whole thing about special education. It's individualized education, so we try to look at each child individually and what's best for them. So, there are students who do extremely well, and others may have some difficulty, but they all have the right to do that, to be included in the regular education curriculum. We, as a practice, at least in this school district, we try

to get them in the gen ed curriculum as much as possible, to the extent that whatever works best, or the amount that each of them are able to do.

Participant Response

I'm definitely a strong believer to include the students with disabilities in the regular education classroom where it's appropriate and beneficial for the individual student. For some students, having simply adaptations put into place can help them become successful within the regular education classroom. For other students with disabilities being fully included may not be the most beneficial to them academically.

Participant Response

I definitely believe that they have the right to receive their education in the regular education classroom. I also believe that it is based on an individual basis. Yes, I believe they all should be included in the regular education classroom, but at the same extent, some might not be able to for long periods of time or for all subjects. It just depends on the individual students and how the regular education teacher is able to adapt and set up their room for the environment to be helpful for them. Some students don't perform as well in the regular education classroom, but yes, they absolutely have the right.

When the participant was asked why the student might not perform as well in the regular education classroom, the participant responded:

Some of it is that's it's too much for them. It's over stimulating. It could just be as simple as the amount of students. It's just too much for them to handle. Twenty-five the thirty students is too much to handle for someone without a disability let alone for someone who hears things you don't hear. They hear the sounds in the lights, they hear the sounds of the fans in the heater, they hear what's going on outside, it can be anywhere

from the sound of the kid over there humming, or someone who is chewing gum. It can be very distracting.

The researcher asked the participants to share their experiences utilizing the co-teaching model. Surprisingly, only two participants have used co-teaching utilizing the team teaching model when the support teacher goes in to the general education classroom and works with the regular education teacher and they both teach the students together.

Participant Response

I have used co-teaching and it was more of the group co-teaching. So she would either take the high exceeding group and I would take the group that needed more interventions because a lot of my students were in there at that point. And then we would just kind of collaborate and say okay this worked and this didn't; let's move on and let's see what we need to do. So essentially it was two groups in the same classroom but my group was kind of working on different things. We taught the same topic, but I used a different way of approaching the lesson.

Participant Response

Yes, we were using that model. I thought that there were mostly positive things that I noticed. You have the gen ed teacher along with the special ed teacher co-teaching – it improves the learning experience – it gives the gen ed teacher some new ideas through the special ed teacher and the special ed teacher can help fill in so that the gen ed teacher also has more time to learn about our students with autism and how to work with them. Of course having two teachers in the classroom is going to be helpful no matter what. We saw some nice improvements with the students and it did make a very big difference. We had many parents requesting it.

When asked if the co-teaching model was successful for the autism support students, both participants agreed positively. Their responses are listed below.

Participant Response

I did because it made them feel accepted. They didn't catch on that they were in two different groups, but still they were doing the same thing but just doing it at different levels, so I think it gave them that sense of pride to be engaged in it.

Participant Response

Yes, I would say definitely. The special education teacher was able to provide more modifications and adaptations for those students, but still using the same curriculum. I think that another really positive is having the students together with typical students. It just provides that background of showing how we are all alike in many ways, but we are different in other ways and it's ok.

Six of the eight participants utilize co-teaching in their classrooms with the paraprofessional that has been assigned to their classrooms. Some also use the TSS to assist in the support classrooms. These participants do not use the co-teaching model with the regular education teacher in the general education classroom.

Participant Response

I have two wonderful aides and we have to do co-teaching in my classroom. I usually have a small group of kids and each of my aides have a small group of kids and we do from there. I usually set up the lessons, though, for my paras but they teach what I ask them to teach. Again, we do the center rotation, so I see all the kids every day and they see all the kids every day so it's not like them teaching a lesson. We are still rotating through so we all see the kids every day.

Participant Response

I have never used a co-teaching model with a teacher, but I have worked with aides and a TSS in my classroom.

Participant Response

When I'm able to get out of my classroom, when there's a time when I don't have students, which doesn't really happen much, I would go into the classroom and assist the student one-on-one. The paras will go to science and social studies and she helps them and keeps them on task, but I don't go into the regular education classroom because I'm needed here.

Participant Response

We don't have co-teaching for autism support students. Many of the students with autism in the district are throughout the different buildings. We have co-teaching with learning support teachers. We may have a student with autism in these classrooms but the majority of them are strictly learning support.

Of the six participants, they found that the challenges with this model included lack of common planning time, lack of communication with the general education teacher, lack of time in the school day to meet and organize a lesson, and lack of manpower in the building to allow the support teacher to leave the support classroom to implement this model.

Participant Response

The biggest challenge is communication with the teacher - having them provide to me what the words are, how they are going to approach them in the lesson and then I can say this may not work for this student. What if we do this? What if we kind of do that?

What if we break them into different groups? It all just depends on the lesson and the teacher. But communication – it's a challenge in itself.

Participant Response

Some challenges would be for the teachers to find the time to collaborate. That becomes a difficult thing because there's just never enough time in the day. The school district ended up starting to provide days where they would bring in subs and they would allow the two teachers to collaboratively meet and plan because the planning time is important. They were trying to make it work better that way.

The researcher then asked the participants to describe their inclusion program and the supports utilized in the general education classroom. All eight participants described a similar scenario. They all have itinerant and supplemental students throughout each day; therefore, the inclusion program is utilized for all students in some way throughout the day. For itinerant students who receive support for only 20% of the day, a paraprofessional, TSS, or one-on-one aide is often utilized in the general education classroom. Those students only report to the support classroom for additional support based on the goals in their IEP. For supplemental students who receive support for 20% to 80% of the day, autism support teachers have them in their classroom for one-on-one or group instruction. However, all autism support students, regardless of the amount of time they spend in the support classroom, are included with their general education typical peers at some point during each school day.

Participant Response

For my students, they are included with their regular education peers in the general education classroom depending on what's written in their IEP. Some of the inclusion would include morning routine, lunch, recess, specials, guidance, science, and where

behaviors are not impeding their learning or the learning of others. For some of these students, there are just adaptations that need to be made for them to be included.

Inclusion is where I utilize my aide more. For some of my students they have their wraparound with them in inclusion.

Participant Response

Currently this year my students are with me. Essentially almost a full day for the core academics. They do go to inclusion in all of their specials and then all of homeroom and then their supplemental activities, parties, crafts, group time, different things like that. In the past I did have students that were included in science and social studies and reading and math, so they were all over the building. This does differ from co-teaching because I wasn't in the classroom as much as I would like to be and I think that was just due to staffing.

Participant Response

We have students included in what they are capable of being in, so all of our students are included in the specials – art, music, library, computer, gym. We have students included in a variety of different things, depending on their ability. So some students may go for the reading or the math or the science and social studies. Again, it depends on what they are capable of doing. Supports for those students – many of them are supported by a paraprofessional. Not always, but more likely yes than no. And, any types of modifications or adaptations that need to be made we try to collaborate with the gen ed teachers and the special ed teachers together to figure it out.

Participant Response

I have two students that are out in the general education classes for academics. Again, they are out usually with one of my paras because I'm in here with another group of students. The kids that are not out for academics, I have them out for specials, lunch, recess, and any social time that I can get them out.

P7 also offered some additional insight on the role of the regular education teacher and the lack of supports for them to have a better understanding of how to teach a child with autism.

I don't think our school offers enough support for teachers, and I think it's a challenge we are going to continue to face as the rate of autism goes up. Regular education teachers are not taught enough about teaching children with autism. I think it's a problem. I also think teachers prejudge a situation, not necessarily intentionally so. They don't understand autism, and you have a student who jumps too early and someone rolls their eyes not realizing they should be clapping. They don't understand where the child has come from – they have no clue – it's their ignorance. But if that person rolling their eyes is your classroom teacher, we have a problem. That's an issue I see.

P8 is the autism support teacher for grades K-6, but she is housed in a K-2 building. She explained that the 3-6 students are only included in lunch and specials with the younger students. The students do not have the opportunity to be included with their same aged typical peers.

What's difficult in this building is this building is only a K-2 building and I have K-6 students. So some of my older kids that I could possibly send out, it's not necessarily grade level appropriate, so it gets a little sketchy there. The kids that are not out for academics, I have them out for specials, lunch, recess, and any social time that I can get them out.

When asked if the parents ever had an issue with this, P8 replied:

They have all had the opportunity to come in and observe what goes on in here so they know that I'm not teaching a group of K-6 students all in one group – that we are splitting them up. They have all been ok with it. But it does get crazy and I have put my two cents in about it a lot – I think the kids need to be separated.

The researcher asked the participants to describe strategies used in a pull-out program and when this type of program works best for the students. The participants believed that the pull-out program works well for the students, but they also believed the amount of pull-out depends on the needs of each student. The participants shared that the amount of pull-out is dependent upon how close the student is to grade level material. If they are reading close to grade level, for example, then they remain in classrooms with paraprofessional support. If they are reading below grade level, the students need pull-out in order to provide basic skills so that they can be more successful in the general education classrooms in the future. In the pull-out classrooms, the participants work on individual goals with the students as well as pre-teaching and re-teaching activities in order to support the student in learning the concept.

Participant Response

I think the main focus of a pull-out program is so you can kind of hit those deficits that the student needs, you know whether it's focusing on word building skills or simple number recognition. I think when a student does have those areas of concern that fall almost more than a grade level or two behind, that's when a pull-out program works best along with behaviors.

Participant Response

We have many of our students who are being provided with speech and OT and some even with PT so they are regularly taken out and most of them do those two times a week. There can be a great deal of pull out time happening.

Participant Response

The small group, the one-on-one, and the replacement curriculum. It's the same thing with dividing the tasks into chunks, the repetition, having breaks. There are some sensory needs that need to be addressed, so we have those in place, too. The behavior system. It works because it's so routine. They are very familiar with it and they understand the expectations even with negative and positive consequences. I try to teach them to make those positive choices.

Participant Response

I think every kid should be part of a pull out program at some point. It's my personal belief – I think we all have aspects of learning that are difficult and I think with children with autism, specifically, when you are looking at their goals, they are going to be different than other kiddos and I think if there is a hierarchy of what's most important, those top three things would be beneficial for every child to have in a separate environment. But when you are in a regular education classroom, there are a lot of distractions and a lot of peer interaction. So, for example, I think sensory should be in a separate room for sensory regulation. I think communication should be taught in a separate room and then practiced in a room with regular education students. Those two specific things should be our two priorities.

Participant Response

I've seen push-in programs that work very well for a lot of kids but then there are some kids that just need that one-on-one pull out. So I do think that it really depends on the specific individual student.

The researcher asked the participants to describe their comfort level in implementing the IEP goals in the regular education setting, and the researcher wanted to understand if it was possible to meet all goals utilizing inclusion. The answers to this question varied greatly because the ability levels of the students also varied greatly. For some students, they are capable of doing some academic goals utilizing inclusion in the general education classroom. For other students, they work on their academic goals in the support room, but have IEP goals for socialization, communication, and behavioral concerns that can be implemented during inclusion with specials, lunch, and recess. Yet for other students who are in the support classroom the majority of the day, IEP goals are primarily achieved in the support classroom. All participants felt comfortable implementing IEP goals, but they also have to rely on the general education teacher and the paraprofessional to provide feedback on the goals when the autism support teacher is unable to attend the class on a regular basis. Also, participants believed the students showed progress if they were able to work in the regular education setting on their IEP goals.

Participant Response

If we talk about their socialization or coping skills goals that I have in the IEP, those can be very difficult in the regular education classroom just due to the fact that something may happen right there but it doesn't get addressed until later on because I don't know about it right away. It is possible to meet all goals, when I'm talking about socializing. Academic goals are a little harder. It has to be evaluated on an individual basis.

Participant Response

I have to really depend on the gen ed teacher and the paraprofessional to give me the information from the goals because I can't be there all the time to see what's going on, so I think that is a challenge as a teacher because I would prefer to know firsthand what's going on.

Participant Response

I think that goes back to depending on the student and their ability level. If the students are higher functioning both academic and behavioral, they may be in the gen ed classroom for the majority of the day. Goals can be both monitored by the general education teacher and myself. However, some students get the basics from the general education teacher and then will be pulled out to pre-teach or reteach certain concepts. This is because the grade levels are so fast paced that a lot of time our students need that extra time to be able to learn a concept. They are then able to come to my room for that extra support. It also depends on the IEP goal. Many IEP goals can be done in general education classroom and some can't.

Participant Response

I'm able to address them; I'm able to help reinforce them. But to actually meet them without some pull-out, probably not the goals that I have written. Now I could write goals that would be more for the classroom, but for social goals –that would be for the classroom, but academic goals, it depends on the student.

Participant Response

For my kids, all of their IEP goals cannot be met with inclusion. Their academic goals they get those with me when they are in here. If it's part of their social skills goals or life

skills goals, those are opened up more so with the regular education teacher and I inform them at the beginning of the year. I give them a copy of the IEP and the goals that they are working on. For every nine weeks, I ask them for their input related to the goals that they can provide information and feedback for.

Participant Response

The IEP is so important. But I think it takes everyone to implement it and everyone needs to be on the same page. I would have liked to have seen every teacher at the IEP – the music teacher, the art teacher, the librarian – let's go through this plan for everyone.

They don't make teachers readily available to come to those meeting. Everyone should be there so we all understand – so there is a clear understanding of what the child needs.

When the participants were asked to describe how they differentiated the instruction for children with autism, all participants explained that they utilize the data on their students to help prepare them for differentiating the instruction. They believe that in order to be effective, the teacher needs to build on what the students already know and activate prior knowledge. Because the instruction is so individualized, it can be different for each student. Outlined below are some of the strategies the participants use when differentiating instruction.

Participant Response

Probably the most often used is breaking it down into smaller parts. It changes everything and it becomes a whole different feel for them. They are much more willing because it's not totally overwhelming. So that's probably one of the most often used.

We do that on a daily basis. Breaking it down so they only see what we are working on right now. I think providing increased visuals are also another important one. You need to try to break it down for them into words and pictures and things that make more sense

to them. If you provide them with a few sentences and maybe some visuals it makes a great deal of difference, too.

Participant Response

Because my classroom is a support classroom, all of my instruction is differentiated. I will teach the concept either individually or in small groups. Paras will then reinforce and practice that concept that I've taught. Within my small groups I also differentiate instruction. If the lesson is to build words, one student can learn the beginning sounds and another student can learn middle or ending sounds. I also differentiate supports within the classroom. One student may need a picture schedule, but the next student may not.

Participant Response

Less verbalization, a lot of hands on. In the regular classroom, you could teach a whole lesson and it's a lot of language. So, with them the less you talk and the more you show and illustrate, the more you can get through. They need repetition and sometimes using hand over hand, especially at the beginning of the lesson.

Participant Response

Tasks that I have in here are broken down into smaller chunks. When I do reading, I do ten minute center rotations. I move at their pace, so all their academic goals are based off their own individualized education plan. So, I'm able to work more on-on-one with the students doing the centers in each one is on a different pace. They also have centers in the back of the room – a listening center, the sound machine where some practice letters and sounds. It's a recording so they practice the sounds when they hear it and say it. The other one is sight words – that would also be with the differentiated instruction.

Participant Response

I like to keep a visual schedule and I will audio the schedule so we will talk about the schedule. For example I would explain the first thing we are doing today on the schedule, and now we are moving on to the second thing. Children with autism like regiment and scheduling.

Participant Response

I don't group them by grade level, I have them grouped by ability level and we work on the standards that are appropriate for them. We have the SRA reading curriculum. I have kids that can do the SRA, but they need additional phonemic awareness skills or those additional skills like fluency and comprehension – we definitely go beyond what's in those commercial curriculum, so to speak.

P3 also spoke about the use of electronic devices and how they are utilized for differentiating instruction. Her response is listed below.

We use a lot more electronic devices like the iPad or the computer programs, or things that are more interesting to the students to improve their interest level and the desire to do the work. The special teacher often times tries to get the information from the gen ed teacher ahead of time so that we can look at all these things and determine how it can be presented to the student in a way that makes sense to them.

The participants were then asked to describe their thoughts on whether students with autism can increase their achievement levels by interacting with general education students. All participants believed that their students' achievement levels increased by interacting with the general education students. Four saw an increase in their confidence, and they thought the peer modeling was a benefit because they would see other students working on

certain activities and hopefully the student with autism would want to do the same activities.

Participant Response

I think they become more aware of their peers. They are able to feel more comfortable within their regular education setting. Sometimes students with autism have a level of anxiety that we don't know about that can be in their natural environment. But by increasing them in inclusion, they are able to feel more comfortable and I think that's where the academics can really shine through. And again it's just becoming more aware of the teacher, the routines, the procedures of the class, the processes of the lesson and then moving forward from there.

Participant Response

Yes, absolutely, a lot of the students go off of what they see. If I have a student who can visually see other students having a conversation and playing together, he is seeing this modeling and it can definitely improve their achievement levels that way. Also, by seeing how they stay on task, or just that typical behaviors of those same aged peers, definitely helps. If they consistently see that day after day, they may grasp that concept.

Participant Response

Yes, I definitely think they can. There are peer models that are very good at helping the students both socially and with turn taking skills. Sometimes that they will respond better to another student to do something than a teacher asking them to do the same. They form those relationships and friendships which can help.

Participant Response

I think the absolutely can. I think a lot of that is observing and modeling. I think when a child with autism – because they are smart – they understand what other kids are doing.

They may not be able to express that, but I have seen kids do better when a peer is interacting with them.

P8 also believed it depended on the student. P8 has some lower functioning students who are not aware of their surroundings or peers; therefore, the modeling that occurs is not necessarily beneficial for them.

I have some students that are very unaware of their peers. They are very unaware of what's going on around them, so they are not looking at their peers and understanding they should be doing what their peers are doing.

The participants were then asked to describe their thoughts on whether students with autism can improve their social skills by interacting with general education students. All participants agreed that students with autism can improve their social skills by interacting with their typical peers. They believe in setting up an environment where the student can find some success with those interactions because they have models that demonstrate appropriate behavior.

Participant Response

Yes, I definitely think that they can. I think that sometimes they don't know what to do or how to do it. One way you can teach them social skills is to begin with the foundations of what to do in a situation or how to act in a situation. This could be done through peer modeling in the general education classroom or at recess. We also have a lunch bunch group. During lunch bunch, both support and general education students learn social skills. These skills are practiced in the lunch bunch small group setting. The goal is to then have these skills generalized into the classroom or recess setting.

Participant Response

Yes, the peer modeling, there are more peer interactions available. In here, there is more parallel play. Or it has to be a structured play where in the regular room there is someone beside him who will talk to him rather than just play beside them.

Participant Response

They absolutely can. We teach the skills here in my classroom, but being able to see them apply it and use them and carry them over are the things I'm looking for.

Participant Response

Absolutely. They are getting real world experiences on both ends. I think general education students need it as much as kiddos with autism. As a matter of fact, I think teachers need it as well. I think everybody should really understand and interacting together is the only way everyone will understand. It's not a lack of desire, it's a lack of experience and it's a lack of understanding the child.

P8 took a more personal approach with her answer. She believes in teaching tolerance in addition to social and communication skills.

Having children of my own that are typically developing, I want them to be tolerant and understanding of others who are different, so I think it's necessary to teach the typically developing kids here that there are people that are different, whether it's autism or anything else. I think it's necessary to teach them how to interact and be kind to someone who is different than them.

The researcher also asked the participants to describe their beliefs on whether children with autism can learn by observing and modeling other children and adults. If this was true, the participants were also asked to describe when the modeling has taken place in their classroom. All participants believed that children with autism can learn by observing and modeling other

children and adults. They believed it helps the child to become more aware of what other students are doing. It also provides the students with positive role models who are modeling positive and appropriate behaviors. On occasion, students also pick up behaviors that are not acceptable, but the participants believed those can be redirected because it is not frequent.

Participant Response

I think it can hit the social aspect. It can also hit the academic aspect. I truly believe that they can observe by modeling other children and adults. Typically students have communication issues or social issues so therefore they need to be put into an environment where they can practice and it can be modeled for that.

Participant Response

I think it's very true even within my classroom. It's certainly true with gen ed peers because they are seeing ways that they should be doing things, not as much in the core classrooms. Often times because we have varying levels of students within the classroom they may see another student learning to read words and I think that does help— they see that another child is doing something that they may want to learn to do.

Participant Response

I think they can learn through observation. In my classroom, we will use peers to model proper behaviors. For example, if you have a student who is yelling and being disruptive, you can redirect the student to look at how this student is sitting and being quiet. Peer modeling can be used in both the support room and the general education classrooms. Many students know a lot more than what we think. They learn from observing others both positive and negative behaviors.

Participant Response

Sometimes it has to be planned in advance and it has to be a created opportunity.

Participant Response

I think it depends on the student. I have students that absolutely do learn by modeling other children and other adults. I have two that just seem completely oblivious to everyone around them, so it depends on that student.

When discussing inclusion, there can be a lot of challenges for children with autism, as well as their typical peers. The participants were asked to describe the most challenging part of teaching a child with autism. Four participants all shared similar feelings on the challenge with teaching children with autism. They believed that it is difficult because it is constantly changing due to the behaviors. They never quite know what they are going to get from one day to the next or from one lesson to the next.

Participant Response

It is constantly changing. The behaviors, in general, are probably the most challenging. I think that the most challenging thing for me is that they are all different and it is constantly changing.

Participant Response

I would say it's the inconsistency of the behaviors. If you're focused on one thing and the student has resurface behavior three weeks down the line it may come back or it may be a new behavior. Anything going on could change from day to day which means that you are constantly evolving.

The other four participants shared very different outlooks on the challenges of teaching a child with autism. Their responses are listed below.

Participant Response

I think the challenging part of teaching a child with autism is – it is not the child, it is everything else you have to deal with. I would move a mountain for any one of these kids. It is the non-compassionate people, not the child. You are the one they love, the one they hate, the one they cry to, the one to cuddle with.

Participant Response

The most challenging part is not to take a behavior personally. It was hard for me to learn at the beginning because you get caught up in the emotions of what they are feeling and you feel like you are the reason they are acting the way they are. It is their way of trying to express and communicate.

Participant Response

I think that there is never a permanent solution. There will never be a day when your answer is forever. Just as all children change and all needs change, I think it's the same with autism.

Participant Response

So I think it's definitely getting in there and figuring out even how to just reach them.

They are so very different and I have kids that are just so withdrawn into themselves and trying to pull that information out that you know is in there sometimes can be a difficult thing.

Likewise, when discussing inclusion, participants were asked to describe the most rewarding part of teaching a child with autism, and what, if anything, they have learned from the child. All participants agreed that the most rewarding experience in teaching a child with autism is when they finally understand a concept they have been working to accomplish. It is when they

make connections and achieve their goals.

Participant Response

Seeing the little milestones and the little things they are able to achieve.

Participant Response

I would definitely say it's those "ah-ha" moments. When you have been practicing a skill and you see that they got it and you can see their excitement and how proud they are of themselves.

Participant Response

It's extremely rewarding when you do see progress and you look back – not so much over a week or a month – but when you look back over an entire year and see what kind of progress is being made, it's amazing and it's very rewarding to me.

Participant Response

The most rewarding part is the independence that they have acquired and you can see that when they complete things independently. They get the smile on their face. They understand that they have started a task and they have finished it without any help.

As far as what the child has taught the participants, they all agreed that it was to be patient and that it is acceptable to change their plans based on what the child may need in that moment.

Participant Response

I've learned patience I should say.

Participant Response

They have taught me over the years to understand them better and to look at things from their perspective rather than my perspective. My favorite saying of all time is "If they

don't learn the way you teach then, teach the way they learn". It becomes very pertinent to these children.

Participant Response

Patience – definitely. And just learning how to completely, all the time, revamp what I'm doing. Something that may work one day may not work the next, so you have to be able to think on your toes and change it up midway through a lesson.

Generally speaking, the participants were asked what advice they could provide to another teacher, either general education or special education, who would work with a child with autism in the future. Six of the participants noted that the teacher needed to be flexible and patient, and each participant also shared some advice from their personal perspective. Their individual thoughts are outlined below.

Participant Response

Things may not go as you planned but you have to be very, very flexible with it.

Whether its behaviors, academics or communications with another teacher, you have to be flexible. And the number one thing to focus on is the safety of the child. If the child is not safe at that point, demands should not be placed on them. Always put the child first.

Participant Response

Have patience, and don't look for that big moment of that reward. You have to give yourself the credit to enjoy the little things. Some days are going to be a lot tougher than others. You have to keep the same routine and structure. You have to talk to the kids as a human being, not as someone with a disability.

Participant Response

Be flexible. You have to be extremely flexible to work with these children and be willing to, again, look at things from a different perspective. They need to spend some time getting to know the child and about what some of the characteristics of autism are. They are not behaving that way in their class to be bad, that they are behaving that way because of a reason and I think knowing a lot of those kinds of things can make a huge difference.

Participant Response

Be patient. Be understanding. Be flexible. Some of the students with autism, they are going to have the behaviors, they are going to have a hard time focusing, and you have to be understanding and realize they have difficulty too. They are trying.

Participant Response

Be flexible. Your lesson plans will never be followed, so don't be upset. Be very patient. You will be using the calm down strategies that you teach. Be firm but loving.

Participant Response

Don't give up. I mean, if one trail doesn't work, there is another way. I think it's just to take one step at a time. You aren't going to be able to solve every problem. My biggest thing is the acceptance. That's what I look for, for these kids.

Participant Response

I think the biggest advice I would have is to research, research, and research. Research the child, research their needs, and be prepared. You can't wing it with a child with autism. There will be moments when it's frustrating, but the rewards are so great if you do the work.

Participant Response

So I would definitely say to just have patience and not to give up. My first year of teaching I had a teacher say to me, about half way through the year, can you see yourself doing this long term? And my answer was no. And eleven years later I can't imagine doing anything else and so just working through it and learning how to deal with it. Not just dealing with the kids but dealing with it yourself and growing as a teacher.

Summary of Inclusion

All participants were supportive of inclusion for their students with autism. Specifically, participants believed all children with disabilities had a right to be included in the general education classroom, or the least restrictive environment. But participants also believed the amount of time spent in the general education environment was dependent upon the needs of the children and what their individualized education plan specified. Even though each child has a different set of needs with regard to inclusion, all participants saw a benefit from spending some portion of their day with their general education peers.

Participants also believed that even though all goals cannot be met in the general education classroom, differentiated instruction can meet the needs of all learners. Specifically, the information being taught needs to be broken down into smaller parts and the concepts need to be taught individually or in small group settings.

Although experiences utilizing the co-teaching model differed greatly, all participants used this method when teaching their children with autism. Although it is less often used with the general education teacher, the autism support teachers have been successful implementing the co-teaching model in their support classrooms with the assistance of paraprofessionals and wraparound service providers.

All participants also believed that most children with autism can learn by observing and modeling general education peers both in the classroom and in special environments throughout the school day. The participants experienced similar challenges and rewards with respect to teaching in an inclusionary environment, and all shared positive advice for both special education and general education teachers with regard to working with children with autism.

Summary of findings for Research Question 3 – Alternative Methodologies

Participants answered a series of questions asking their perspectives on the effectiveness of alternative methodologies used to assist children with autism in the areas of communication skills, socialization, and repetitive behavior. In an effort to elaborate on these three important areas, the participants were also asked about the perspectives on language development and sensory input. In addition, participants were asked about their perspectives regarding relative services which included speech, occupational therapy, wraparound services, and nutrition and diets for children with autism.

The researcher asked the participants to describe the techniques they would use to encourage language development in students with autism. The participants utilized a variety of strategies to encourage language development with their students with autism. Several of the participants use the TEACCH method and do not give an immediate response as a good way to increase their communication and encourage them to use their language to request what they truly want or need. The participants mainly agreed that no matter what method was used, repetition and reinforcement needed to be used to encourage independent practice and generalizations across all settings with peers and adults in the school and in the community. The various methods are outlined below.

Participant Response

Setting up the environment and that is having the student ask or mand for different things appropriately. You know if they need something, not just giving it to them right of way. Having them ask for what they need and this can be done across all settings. And also teaching them; modeling the biggest, showing them those words, explaining those words, explaining what they mean and how they can be used in different settings.

Participant Response

A lot of my students do receive speech and language. As far as expressive language – we ask them to use their words, tell me what you want. I need you to tell me what's wrong, tell me what's bothering you, if you tell me then we can fix it.

Participant Response

Many times just having the student repeat words as I say them is very simple, but it's also to slow down and ask them to say the words that I'm asking them. If they say it incorrectly, then try to have them repeat it. . One of my favorite things that I learned from my TEACCH training many years ago, is after you get to know the students and some of the things that they really like or are reinforcing to them, instead of just handing it to them, we hold back. Say I have a snack in front of them, but don't just hand it to them because they know they want snack. If I just sit here and hold it, after a while, eventually, they will make some sort of communicative approach and try to get my attention.

Participant Response

We have used the sentence strips, picture cards, and just encourage words to request.

“Use your words” – it’s a famous quote in here. I think the floor time has helped with the language development.

Participant Response

Asking questions. I know that on our Monday routine we share our week in events.

They want to share but at the same time we work on listening skills and who can repeat back what the student did. The puppets are another thing to encourage language development. I’ll *read Goldilocks and the Three Bears* and I’ll pull the puppets and the play stuff and I’ll show them how to play and retell the story. They just want to retell the story the way that it was modeled.

Participant Response

Manding. Manding all the way. You have to start small and get them to mand their wants. I think manding is the best way to teach kids to express their wants, and then you have to branch off from there.

Participant Response

We do take aspects of the verbal behavior and we teach request and we teach the labeling. I encourage all of my kids to use complete sentences. We encourage the vocal – you need to tell us what you want, especially when it comes to behavior. A lot of our behavior issues come from that communication and language barrier. And so we do work a lot on that. We have a wonderful speech therapist that works a lot with the language – both receptive and expressive – with the kids.

The researcher then asked participants to describe their experiences and strategies they used to assist a child with autism in the area of communication, utilizing both expressive and receptive language. The participants were also asked to describe their experiences utilizing communication devices in the classroom, and they were asked to share potential challenges they faced with implementing the devices. Three participants shared some specific strategies they use to assist children with autism in the area of communication. As an extension of the previous question, all participants encouraged language development utilizing any means possible, in all environments. Some of the examples are outlined below.

Participant Response

I think the best strategy is just setting up opportunities. Having them practice; having them model with different peers; doing it at different times during the day. Having them engage not only with the teacher, but with maybe the TSS or maybe another teacher, you know, peers. So basically just setting it up and modeling and teaching them.

Participant Response

Expressively it's more difficult. I think it's all up there, but it's difficult getting it out. The picture cards help a lot for me.

Participant Response

I like to work one-on-one when I'm working with a kiddo. And when I want him to communicate and he's not, I stop the world. I stop, put my hand on his hand, and I give him response time. He knows what that means. If he wants a specific song or a video, I make him mand for it. I practice a lot of reciprocal with rewards – can you clap your hands, can you do that? Then I always immediately respond. I think if a child with

autism has a rapport with you, then you can do a lot with receptive and expressive language.

Participant Response

I have had nonverbal kids in the past. In which case, we tried to get them to communicate in any means necessary. Sometimes we would use the device and sometimes we used the visual cues, gestural prompts. We use whatever is best for the kids. We have done some sign language. I've had kids that just weren't physically capable of using sign language. I've had kids that couldn't sign and were nonverbal, but could write. So, we use whatever method of communication we can. We have used communication devices.

When asked to identify some of the communication devices that are used with their students, most have used the iPad or iPad mini. Participants shared a few apps they found useful as well. In addition, there were a variety of other devices and computer programs that were used. Most said it depended on the student and each device lends to different language abilities. The devices are used to express their wants and needs according to their ability levels. The participants' responses are outlined below.

Participant Response

I've used the Dynavox and I've used the Pro Lo Quo to Go. It's an iPad app for assistive technology. Kind of like the Dynavox but it's for the iPad.

Participant Response

Previously, I have used in the classroom the Mo, Mini Mo, DynoVox. Currently, I use the Vantage Lite, Touch Chat with Word Power, Nova Chat. The trend now is going towards

using the iPad. Size and weight of the iPad is easier for mobility. It's socially more acceptable.

Participant Response

We have done Go Talk, DynaVox, and Vontage Light. Go Talk is the little board where you have to change out the papers. There are some boards that have 6-8-12 choices. My child grew out of that one because he had more verbal words. You were very limited with it and you had to set them up what the choices were. The Vontage Light is little friendlier than the DynaVox, to be honest. With the device, what's nice about it is we'll use it for her academics. Even if her speech gets in the way, this is her voice. I also use Razz Kids as part of my centers. It's a program that has reading books that are based on their individual reading level. I really like it.

Participant Response

I use the iPad almost exclusively. We do have some really good language apps that we use. There are some really good math apps out there. There's one that I use a lot with some of my kids – it's a time telling app. It has an analog clock and a digital time. What I have found is that a lot of the kids don't know how to tell time with the analog clock anymore. Everything is digital. So we use a lot of apps. I have used it for reading and there was an app on there for sentence building and dragging the pictures to appropriately make a sentence. So we have used it for reading. We have used it for phonics.

The challenges were similar across the board. With most devices, there is so much information included on them. It becomes difficult to navigate through all the pages when the students are looking for words or phrases to express their needs. Also, the participants have to rely on the speech therapist or technology director to add pages and that can be time consuming

as well. The participants also expressed that it can be challenging to implement new ideas when they have not had time to train on the device.

Participant Response

I think the challenge is that there is so much at one time. When you download the program and it's there right in front of you. There is so much on it, and there are some things that the student may not even have been taught yet. Maybe they cannot recognize this word or recognize this picture.

Participant Response

I have a lack of resources in my room. I don't even have a Smart board. All I have is a projector. I can't even imagine if I had a smart board – to be able to allow them to walk up and touch it and interact. The things I could do would be phenomenal.

Participant Response

The devices are a challenge because someone needs to show the student or provide that model for them often times to get them started until they are really at a point where they can use it on their own. It becomes difficult unless you have a paraprofessional or someone who can guide them to use it. It's difficult as a teacher when you are trying to teach several students and you have to stop to try to help to do that, so that becomes a challenge sometimes.

Participant Response

The challenges for those devices is being able to have time to learn the device, programming that device, knowing how to use it, and then being able to show the students how to use it.

Participant Response

There are some challenges using devices. The most important is they need to be introduced at an extremely young age, I think around two or three, because that when typical child is starting communication.

Participant Response

Another issue with the devices, too, is unless the parents are on board with it and they are taking it – it's one of those things to be able to go out in the community and use it and to be able to use it functionally outside of the classroom – families really need to be on board with it. The same with the iPad. A lot of kids don't have access to that at home, so to be able to use it as a communication device, it's all well and good if they can use it in the classroom, but to have that functional communication outside of the classroom – you really have to have families on board with it.

The participants were then asked to describe their experiences and strategies used to assist a child with autism in the area of socialization. In addition, the researcher asked how they could incorporate a communication device with socialization. All participants shared that they utilized a variety of strategies to initiate socialization for their students. Each participant shared a vast number of options to include students with autism as well as their typical peers in the general education environment. In some cases, the teachers purposely set up scenarios so the students could successfully socialize with their peers. Other times, the environment lends to more natural socialization among the students. Listed below are some of the strategies the participants used to promote socialization for their students.

Participant Response

With that, it's setting up the environment. You know having maybe certain students come over and ask the student something so that student can practice pinpointing what they want. With the DynaVox and the Pro Lo Quo to Go I think it automatically starts with wants and their needs and what they like at that time and what they need. So basically getting those core things that the student has in their language. And then incorporating it.

Participant Response

We just start little, and one day we'll talk about how to ask a student to play with them. A lot of it is modeling and they have to be able to see it in order to comprehend it all. It doesn't take a big elaborate lesson, it's what you take for granted – the simple things that they learn more than when you present a lesson. Sit down and play a game with them that requires turn taking, interaction, adding, figuring out the rules of the game. They learn a lot more from that.

Participant Response

We have actual books that have lessons for teaching socialization. A lot of it is acting out or showing them visually with a video or with you showing them different actions of what they look like. Children with autism don't see beyond themselves much. They don't necessarily know what it looks like, or what they are doing, which is why the video modeling is a really nice program. I've used a variety of different things; the social stories are extremely good. I've seen a lot of good come from those. It's something that's used a lot especially with socialization issues.

Participant Response

We use social stories and peer modeling with students. We also have lunch bunch group. Lunch bunch is a group of both support students and general education students. During lunch, these students work on different social and communication skills. Students may use their communication device to converse with their peers.

Participant Response

This is when we do the social groups and we do the video modeling. I play games for turn taking. We do like playing games because there is a lot of socialization. It's kind of like the floor time. That goes hand in hand, kind of. The group activities.

Participant Response

They have to be planned. I have created opportunities for children to have social opportunities. They have to be – I mean, they are not going to happen naturally until the peers understand what the needs are and how to communicate with that kiddo. So if you pick one kid in particular that may be drawn to another child, then you plan an opportunity. You may show a social story - here is so and so playing cars with us. So it really has to be planned and scripted. But I think it's extremely important because we want them to have bonds with kiddos in their classroom and we want those kiddos in their classroom to bond with them. That's how they will make lifelong friends – they will always know each other.

Participant Response

I went into the general education classrooms and gave a brief in-service, so to speak, just describing what autism is. I explained this is why so and so always has their fingers in his ears, and this is why so and so always runs around screaming when they are out on

the playground. What I saw with that was the general education kids weren't so nervous about my students and I saw them engaging my kids a little bit more, and in turn my kids started to engage with them a little bit more. It's a two way street with the socialization with our kids because I think a lot of times you do get those kids that don't necessarily know how to interact with my students, and vice versa. Teaching both sets of kids how to interact with one another sometimes is what needs to be done.

Four of the participants utilized the communication device when setting up scenarios for the students to initiate verbalizations. They shared that they set up pages on the device that would help to initiate a conversation with another student, or they may have questions set up to ask something about the student. P3 shared that her only experience using the device for socialization is for initiating greetings or for saying hello. P6 does a lot of modeling and showing expectations for the device.

It's their voice and I have to teach that to them. But what I really like is when we do group things there are questions on here – on how to ask questions to another peer, especially when they peer can't understand what they are asking. It gets the other children to understand why they are using this device and how to include the kids socially.

P7 had some concerns with teaching the typical peer how to use the device to interact. Her comments are below.

I think it's difficult to incorporate a communication device unless you teach the other peer on how to use it. I think the student has to be very comfortable using the communication device and comfortable with sharing it.

The participants were then asked to describe their experiences and strategies used to

assist a child with autism in the area of repetitive behavior and sensory input. All participants responded that they definitely saw a need for sensory input in the students' day. Some students had a more serious need for sensory integration than others, but all participants utilized some type of strategy to assist with sensory needs. Some of the strategies are outlined below.

Participant Response

I think with sensory input it needs to be built into the day as a means of prevention rather than a means of reward or self-calming. It needs to be built in the day so you are almost able to eliminate it or reduce that sensory input.

Participant Response

Sensory input we use a variety of things within the classroom to help with those kinds of things. That would be the weighted vest, or the squeeze vests, or the seating options, or the seat cushions, the brushing program. We have trampolines to give them some input. Within our classroom, there's lots of things we can use to provide them that input. We also have a sensory room in the building that has a lot more. We have a large swing and tunnels and balls and blocks and all sorts of different sensory items to give them some of the input that they need on a daily basis.

Participant Response

The sensory room has been used in different ways. If a student needs a break throughout the day, they can go to the sensory room. While in the sensory room, students may just take a break or other students have certain steps that they complete when they are in the sensory room such as jumping in squares, hopping on one foot, tossing a ball, bear crawl, crab walk, or pushups on the wall.

Participant Response

We have the sensory bins and more of the sit down sensory. We use the bins. We also use rice, sand, some seeds, and they have different things – one has cars, one has sand toys.

Participant Response

Sensory input, to me, is number one. It is the number one thing that every teacher who has a child with autism should have a list of sensory integration activities that could be readily available at all times. They may be some that the kids can self-impose or self-soothe and it can also be some the teacher can do.

For repetitive behavior, four participants shared their experiences and background with implementing strategies to reduce or eliminate repetitive behaviors. They stressed the importance of finding the function of the behavior and then finding a replacement behavior for the student who was experiencing difficulty.

Participant Response

If a student does have a repetitive behavior of hand flapping, you have to – it's the teacher's responsibility along with the parents and any school personnel – OT, PT – to find a replacement behavior with that. My big thing is with this repetitive behavior, if it's not impeding the student's language, education, functional components, I don't see it as a major area of concern. However, if it hits all three of those, then I think that's where you need to intervene at that point.

Participant Response

Repetitive behavior is difficult – you just can't stop it on a dime – it's a long term type of things, but it's basically providing them with an alternate way or whatever it is they are

seeking by doing those repetitive behaviors. We try to provide them with an alternative means of getting that input. That could look a lot of different ways.

Participant Response

If a student has vocalization repetitive behavior, we use gum, bubbles, blowing activities such as blow cotton balls with a straw. If a student needs oral sensation, we may use chewy snacks. If they exhibit hand stims, we use figits or put Velcro under the desks. There are also different types of sensory grips you can put on pencils or use vibrating pens.

Participant Response

One of the things I learned to do when someone would constantly do the repetitive movements and if someone would just do it with the student and then count – we are going to walk on the count of three – 1, 2, 3 then walk, the student would break out of the repetitive behavior.

Participant Response

Repetitive behavior I normally give a number to. So, you are allowed to say that five more times, but after five times, you can't talk about it anymore and I'll either ignore or redirect. Repetitive behavior seems focused on anxiety and I find a way to relieve an anxious situation, so redirection usually helps.

The researcher asked the participants to describe their thoughts and experiences utilizing speech and OT in the school setting for children with autism. In addition, the researcher wanted to know if speech and OT are positive supports. The participants utilized the speech and occupational therapist daily to help with student interactions and language development. Some students had speech once a week, while others might have it several times a week. The

same was true for the occupational therapist. In addition, some students had services that included physical therapy. The schedule for speech and occupational therapy services varied greatly depending on the need of the student and the availability of the therapist. The students were either pulled out of the classroom to receive services utilizing a one-on-one concept, or the therapist pushed-in to the classroom to work with the student alone or with small groups. In the support classroom, the speech therapist would often times teach a group lesson to include everyone in the support classroom. The occupational therapist was used more with individual cases. On occasion, the speech therapist might assist during inclusion, but this scenario was only utilized if the general education teacher needed support as well. The OT, however, often visited the general education classroom to offer ideas for the teachers and paraprofessionals and supplies for the student to use in the classroom. All participants stated they either had speech and OT on staff, or they had one therapist on staff, usually speech, and they contracted the other service through the IU, usually OT and PT.

Participant Response

My experience in teaching autistic support is that your speech therapist is going to be one of your biggest assets. They may be able to give you recommendations on how to work with this particular student who has expressive or receptive concerns. I co-teach more with the speech therapist than I do with the regular education teacher. And OT, recently we've worked a lot with the sensory input. So they are able to give me recommendations and strategies that I'm able to use within the classroom to reduce any behaviors or concerns that may happen.

Participant Response

The kids also go out for speech and language which is also a good thing for the socialization. She normally takes them in groups. The OT, she's the one who comes to me to say we need a compression vest, we need a weighted vest, we need some sensory things. She's the one who will come in and give me the putty, give us the stuff to work with and help the students.

Participant Response

Both Speech and OT have individual pull out sessions. They will also have group sessions where they will take a small group of students who have similar goals. We also have a combination group of both speech and OT activities. The speech therapist and occupational therapist will also give the support teachers and general education teachers' strategies to implement in the support or general education classrooms. It is a very positive collaboration.

Participant Response

We have a wonderful speech therapist and a wonderful occupational therapist. We collaborate on the kids a lot. Speech we collaborate daily. She comes in at the end of the day and asks what we need to work on and how I feel about certain things. Occupational therapy as well. We have so many sensory needs – it's not even so much those fine motor skills, it's a lot of times those sensory needs that I really need her assistance with. So it has been very positive.

P7 had a slightly different viewpoint on speech and occupational therapy in the school setting. Even though her students utilize speech and OT, she didn't necessary see the benefit in it the way it is currently being used.

I understand the need for one, but I don't always think they are appropriate in the school setting. The reason I say that is because school is a routine and if we are doing inclusion, I don't know, I have kids that run when they hear it's time for speech and they don't want to leave what they are doing to go to speech. I understand the point of it, and I think it makes sense, but it's a separate classroom and it's in a separate area and it's another change in their routine.

P7 was then prompted to explain where she thought speech and OT would be best utilized in her school. She responded in the following manner.

I think it would be better if it was done in the autism support room, not in a separate room. I think OT is great, but what if no one is there to learn it. The classroom teacher isn't there learning it and there's no transfer of skills, especially at the elementary level. You can't say to the kiddo, ok, go home and try this. So I'm kind of torn. I always feel like there is drama with in-school speech and OT.

The participants were asked to describe their experiences working with wraparound personnel in the classroom and the collaboration between the school and service provider. The responses from the participants were quite a mix of positive and negative experiences. The participants noted that the wraparound personnel should only be in school to work on student behaviors. They found the best time to utilize wraparound is when they would go to the regular education classroom with the students. This procedure allowed the support teacher to work with the children with autism in the support classroom, while allowing a child who was participating on grade level, to be included in the regular education classroom with the support of a TSS. The participants also believed there was a nice collaboration between home and school by having the wraparound service in both environments.

Participant Response

I think teaching autistic support we don't have as much contact with any wraparound personnel and I think that is partially due to they have the services in the school that we are able to go through. With wraparound, they work on specifically behavior. And I think a lot of the times districts don't want as many outside people inside the classroom.

Participant Response

For the most part, the best part of that is the collaboration between home and school. What are the things the service provider is working on and what are the things we are working on at school and we can try to work together and support each other with those kinds of things we are working on.

Participant Response

Wraparounds are invited to visit the schools. If there is a wraparound in the classroom, the wraparounds are only to be working with behavior problems. They cannot work on academics. Collaboration between the schools and wraparound services are very beneficial. If a student was having problems at home, the school can be informed and offer suggestion and/or visuals for the home setting such as schedule for morning routine. We can make pictures and then we can send it home and they can do it there, too.

Participant Response

A TSS might go to specials with them, too. They do help when they are outside of this class, especially with the transfer skills.

Participant Response

I have really great wraparounds this year that are really on board with things, and they sit with the kids and they really work with them. I have had other ones who just sit in the

back of the room and just put their time in and that's it. I have had wraparounds that come in late and leave early and expect me to sign off on their timesheets. When you get somebody who is really on board and really likes the kids and really wants to put that effort in – it's a great thing. It's good when you get someone who is really committed to the job.

Each participant also noted that they have also had some negative experiences with using wraparound services. The biggest concern is the turnover rate. Children with autism need consistency, and there is a high turnover rate for TSS services. Also, the participants thought there was a concern in dealing with the insurance companies. P5 thought there could be more collaboration on setting goals to be achieved in both the school and home environments. P6 also thought it was important to set the expectations for the TSSs in her classroom. Their responses are outlined below.

Participant Response

The only challenges are they are not here or if it's a different person every other day or when they don't know how to work with kids with autism. That seems to be a big issue. I get a lot who have never worked with kids with autism before. Another battle is the insurance companies. Ultimately, they decide if this child gets services or not. It boggles my mind. How does the insurance company decide?

Participant Response

There is collaboration. I wish there was more. They seem to set goals for the student and then we tend to set goals for the student. I wish that we could set goals more together so we are working more on the same thing. I feel like the more we are working on the same

things, the better off we will be because the wraparound is going to utilize it in the regular classrooms, not just in here. And at home.

Participant Response

I have definitely learned as I have had several TSSs and wraparound services in here, that I'm going to set my expectations and tell them what my expectations are for them in here and what to do. I've had experiences that have not been very good, so having that communication with them of when and where it's appropriate, too. I let them know if the student is working one-on-one with me or the aide, they just need to observe. If they are working independently, the TSS can redirect them, and they know that. It keeps a smoother transition.

Participant Response

I think that there is a disconnect between the school and the service provider. Schools can be reluctant to having them and I feel like there really is a lack of communication before the service even begins. And that's part of the problem. Teachers are reluctant to have people in their classroom observing them and interacting. I think the principal is an important part of that. I would call a meeting – let's all talk and invite the TSS and the BSC and let's have a conversation – here's what you are going to do and here's what you are not going to do, here's what I'm going to look at. It has to be thrown on the table before the TSS walks in the door.

The participants were asked to describe their experiences in working with nutrition and diets for children with autism. P5, P6, and P8 did not have students on any special type of diet. They noted they have had picky eaters and students with allergies in the past, but they did not have any experience with students on specific diets where they had restrictions. The other five

participants currently have students who follow several different diets, specifically the casein and gluten free diets, or some form of them. Most agree that it is the parent preference and it is just another form of intervention that can be utilized to benefit the student. The researcher asked each participant if they noticed a difference in behavior when students were on the special diets. All participants noted they either did not have the student long enough to make that determination, or the student arrived to their class and was already on the diet, so they really didn't know if was working for the student. P2 noted that nutrition is a balance of what the child is willing to eat.

Participant Response

I've seen all sides of spectrum. I have students who are on gluten-free/casein-free. I have one student who is completely vegan. I think it's all cultural preference and I think it's all parental preference. Particularly I haven't been with the students long enough to see any behavior changes. You know the parents have reported to me that they have done this when they were younger and then they were put on the gluten-free diet and their behaviors have improved, but again, I haven't been with the student long enough to see that.

Participant Response

Yes, I have some that are gluten-free. I have some that are can't have red food dye. I have some that are lactose – they have to have their special milk. Their parents bring it in. I have always questioned the gluten-free – I don't know if it really does work. I just don't personally have enough knowledge or experience with it to say one way or the other.

Participant Response

Many of my students are on certain diets – the casein and gluten free diet is the most common. They are not allowed milk products or gluten products. Most often times the parent will provide the food from home; however, in the past few years our cafeteria has started providing gluten free meals for the students. My experience is that many parents have tried them. I don't think that I know of any that have continued for extended periods of time. It's extremely difficult to follow completely. Some of them do, and they try to watch very carefully what their child has to eat.

Participant Response

We have many students on special diets such as gluten free, casein free, dairy free, peanut allergies. It's basically being aware of the students' restrictions and then monitoring them at lunch, snacks, and parties. Parents are great at sending in snacks and/or lunch. Most of the time the students are not allergic to gluten. It is the parent's choice to put them on a gluten free diet. Many parents put their child on a gluten free diet because of behavior problems. Most of the time when they come to me, they have already determined if they wanted to follow a gluten free diet.

Participant Response

I have had families that have gone casein and gluten free and they swore they saw a difference, but I didn't necessarily see a difference. But, I mean, I think it's a personal choice. There's not a lot of scientific proof to show that it works, but if a family says it works and it makes their life better, then do it. Who am I to say not to?

Summary of Alternative Methodologies

All participants utilized alternative methodologies in some way with their students with autism. Language development was a significant area of need for children with autism and the participants focused on utilizing this through communication and socialization. In order to do this, the participants agreed they needed to be focused on both receptive and expressive language development. The use of communication devices was popular, but not consistently used throughout all environments. The participants needed more training on the devices, needed assistance in setting up pages for the device, and often times spent considerable time trying to navigate through the numerous pages on the device to find what they needed for their students.

Sensory input is also a significant area of need, and all participants utilize the speech and occupational therapist as often as possible for assistance and ideas for their students. Most agreed that utilizing a functional behavioral assessment assisted with sensory integration. The assessments assisted participants by helping to learn the function of the behavior of the students and then find a replacement behavior for those students experiencing difficulty. All participants agreed that the occupational therapist played a significant role with the implementation of sensory integration for their students with autism.

Wraparound services are used in most schools, but the participants have had both positive and negative experiences using service providers. Although having the assistance of a therapeutic support staff member can be useful in the classrooms, the participants had concerns with the experience of the staff and the significant turnover rate. In addition, the participants had limited experience with limited diets and nutrition for their students, mainly because most diet modifications have occurred prior to starting school.

Summary

This chapter represented a review of the data collected from in-depth, semi-structured interviews with the eight participants. The data were analyzed and coded for review. Chapter 5 will examine the importance of the results as they answer the research questions in this study. It will also include recommendations for future actions and it will offer suggestions for further study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The primary focus for educating children with autism is the same as educating all children; there is an emphasis for developing their academic potential as well as their personal independence and self-sufficiency (Volkmar & Weisner, 2009). Additional challenges exist for children with autism in the areas of communication and socialization difficulties, as well as problems with sensory integration and behavioral issues. Because children with autism process information and respond in different ways, utilizing interventions strategies in an inclusive environment has proven to provide positive outcomes for these children. Inclusion allows teachers to use a variety of instructional strategies and supports to maximize students' participation in the general education environment (Sharp, 2014). This study sought to understand the effectiveness of intervention strategies used in an inclusive environment with elementary-aged children with autism. The purpose of the study was to have a better understanding of the intervention strategies that are utilized and how they are implemented with children with autism and to provide comprehensive information to inform educators and parents of interventions that are available.

The objective of this chapter is to reexamine the purpose of the study and understand the significance of the results as they apply to the research questions. The data collected from the interview protocol served the purpose of answering the research questions in relation to the perceptions of elementary and special education teachers about the effectiveness of intervention strategies used in inclusive environments with elementary-aged children with autism. As a result, the researcher interviewed the teacher participants to ascertain perceptions on how

specific strategies can assist children with autism and whether or not inclusion is the best environment for delivery of those interventions. Furthermore, participants had an opportunity to provide supplementary information after reviewing the transcripts which prompted additional conversations between the participants and the researcher.

Summary of Purpose of the Study

With the number of children diagnosed with autism in the public school system continually on the rise, there are more students who require special services and interventions in the school curriculum and in the classrooms. As a result, public educators must be prepared to properly implement intervention strategies by using effective inclusion models to incorporate appropriate accommodations and placements for elementary-aged children with autism. This study explored the perceptions of eight highly qualified elementary and special education teachers in Western Pennsylvania on their experiences utilizing intervention strategies in inclusive environments with elementary-aged children with autism. The intention of this qualitative case study was to gain a better understanding of specific interventions and strategies that were used with children with autism and if those strategies were effective in inclusive settings.

Summary of Research Methodology

A qualitative approach was selected for this study as it provided the researcher an in-depth look at how the participants perceived the effectiveness of intervention strategies used in inclusive settings to support elementary-aged children diagnosed with autism. A semi-structured interview format was used by the researcher for this study to allow the participants to answer in open-ended design. Furthermore, the researcher developed and piloted an interview protocol which helped to manage and answer the research questions. The primary vehicle for collecting

data for this study was through the use of face-to-face, in-depth interviews with eight teachers who worked specifically with children diagnosed with autism. The interviews were conducted with participants selected utilizing an intermediate unit's database which helped to identify eligible participants who met the requirements of the study. Once teachers consented to participate, the researcher interviewed the participants exploring the answers to the following research questions:

1. What are teachers' perspectives on the effectiveness of intervention strategies that are used with elementary-aged children diagnosed with autism?
2. What are teachers' perspectives on the effectiveness of inclusion of elementary-aged children with autism in the general education environment?
3. What are teachers' perspectives on the effectiveness of alternative methodologies used to assist with communication skills, socialization, and repetitive behaviors of elementary-aged children diagnosed with autism?

The research questions were explored through a series of interview questions (see Appendix A) which were discussed at a location of the participants' choice. The researcher utilized triangulation to validate her research by corroborating with different teachers who offered diverse perspectives by deriving from multiple sources of information. The researcher also used member checking as a process to check the accuracy of the study to be sure the description was clear, fair, and complete (Creswell, 2012). In addition, the researcher consulted with experts in the field of education and autism to ensure the validity of the study (see Appendix B).

Limitations

This study was limited to highly-qualified elementary and special education teachers who hold full-time positions working with elementary-aged children with autism in one intermediate unit in Western Pennsylvania. The interviews were conducted specifically with eight individuals; therefore, limiting the findings to their experiences only.

Because a qualitative study approach was selected and specific teachers were the focus, there was the potential the findings may not be easily applied to all students, intervention programs, and school districts. However, the intent of the study was to learn the perspectives of the people who work closely with elementary-aged children with autism, and their insight could be very valuable and enlightening to any instructional program, outpatient service organizations, or districts that might be implementing new strategies and programs for children with autism.

The data collected were a result of teaching strategies, interventions, and inclusion practices used with elementary-aged children diagnosed with autism. The research clearly states the earlier a child with autism receives intervention services, the more likely the child will overcome some, if not all, of the developmental delays (Aronson-Ramos, 2014; Holmes, 2009; Nuner & Griffith, 2011). Because the focus is on elementary ages, another limitation was the study was not applicable to students at the secondary level.

Finally, each child diagnosed with autism presents different skill levels and abilities; therefore, when interviewing teachers the research was very vast in nature and allowed for additional questions to be developed as they did not appear on the original interview protocol. Furthermore, it was necessary to expand upon the interview protocol which provided extensive material.

Conclusions

The qualitative data that were collected through the interview process were analyzed and both similar and opposing beliefs were examined. There were a few common themes that materialized during the interview process that were relevant to the responses given by the participants. Because each child with autism is so different and each child has unique skills, there is not one specific strategy or intervention that will work with every child. Also, there was a strong belief that inclusion is beneficial for children with autism and they should be included with their typical peers, but also a belief that inclusion should only be done to an extent that is appropriate for each individual child. In addition, there was a consensus among participants that there isn't enough formal training for general education teachers regarding special education, specifically how to work with children with autism. Therefore, it was noted that general education teachers struggle with implementing interventions in the regular education classroom. Finally, there is strong commitment on behalf of autism support teachers to implement new strategies and interventions and to provide a variety of supports to assist their students with autism.

Summary of findings for Research Question 1 – Intervention Strategies

This question referred to the teachers' perspectives about the effectiveness of intervention strategies that are used with children with autism. The participants made statements that revealed the characteristics of autism are unique to each child and the students' ability levels varied greatly as a result, particularly in the areas of communication, socialization, sensory input, and academics. Aronson-Ramos (2014), Asher et al. (2010), Autism Speaks (2014b), Brown, Gerber and Olivia (2014), James (2013), and Nuner and Griffith (2011) all describe the characteristics of this disorder, with varying degrees, as having difficulties with verbal and

nonverbal communication, with social interactions, and with repetitive behaviors. Therefore, numerous intervention strategies were utilized in participants' classrooms with their students with autism.

Visual Schedules

The participants made statements that one of the most important intervention strategies for teaching children with autism is utilizing visual schedules. Because students with autism are visual learners, a visual schedule allows them to understand and manage expectations, prepare for transitions, and understand the routine of their day. The participants expressed the importance of knowing their students and then developing visual instructions and schedules to meet their individual needs. According to Davies (2008) and Mirenda (2001), research indicates that the most positive aspect of using visual schedules is that it can increase the child's independence, and visual schedules allow the students to understand and follow a sequence of activities while in school. Children with autism can learn to transfer from one activity to another using a daily schedule which is organized to assist them as they prepare for new activities in their school day. In addition, visual schedules are a valuable component of the TEACCH model.

Training and Education of Autistic and Related Communication Handicapped Children (TEACCH) Model

Seven of the participants referred to the TEACCH Model as an effective intervention strategy used with children with autism. Particularly, the model focuses on increasing the students' independence so they are able to complete basic tasks on their own. Participants found that utilizing independent work stations have increased the students' confidence and provided a structured routine for success. Participants also believed TEACCH was an effective tool used to differentiate instruction for students because their ability levels can be vastly diverse. TEACCH

used structured teaching which was designed to capitalize on preferences for processing information visually for children with autism. The TEACCH model creates a highly structured environment to help children transition through activities and work independently (Guldborg, 2010; Loiacono & Valenti, 2010; Rao & Gaggie, 2006; The Watson Institute, 2013; and Zane, Davis & Rosswurm, 2008). While the TEACCH models fosters a level of independence, the picture exchange communication system also helps to build on this by providing children a system to use their words to formulate sentences.

Picture Exchange Communication System (PECS)

The participants in the study also advocated the use of the Picture Exchange Communication System (PECS) as a valuable intervention tool to support the use of visual schedules and communication for students with autism. This method helped to prompt and reinforce strategies that helped lead to independent communication for the students. Therefore, the students utilized the picture exchange by using words and/or sentences to express their wants and needs or to make requests. Because children with autism have limited communication skills and have high needs in both receptive and express language, Bondy and Frost (1994), and Vicker (2002) describe the use of PECS as a system which was developed to assist children with autism to acquire a functional means of communication. This method allows children to exchange pictures for items or activities they want, which can be utilized with different people and in different places. According to Autism Speaks (2012), Guldborg (2010), Loiacono and Valenti, (2010), Rao and Gaggie (2006), The Watson Institute (2013), and Zane, Davis and Rosswurm (2008), the children eventually use the pictures and symbols to formulate sentences. Although a visual tool, a major component is verbal reinforcement and communication. While PECS utilize

a functional means of communication, social stories also offer functional means of interacting with others.

Social Stories

The participants overwhelmingly agreed that the use of social stories was a widely practiced intervention strategy used with children with autism because the story provides a visual for the students, and the story also helps them learn transition skills and social interactions. The social stories, made specific to children's needs, help the students with barriers in language as well as social and behavioral expectations. As noted by Wilkinson (2013), the objective of this strategy is to "enhance a child's understanding of social situations and teach the appropriate behavioral response that can be practiced" (p. 1). Other researchers agree this method could be used for teaching social skills and helped children focus on what to expect with transitions and what they will be asked to do (Hughes-Lynch, 2012; Rao & Gagie, 2006). In addition, it was noted by all participants that modeling was also a strategy that can be used with teaching social stories and social skills. Again, participants believed that children with autism need a visual reminder to help them make appropriate choices; therefore, any form of modeling helps the students understand the expectations. Modeling can be used when interacting with peers and adults with social interaction and within the academic environment. Hoaglund (2014a) describes modeling as having a typical peer show children with autism how to behave or how to complete a task. This method could be used to assist with game playing, taking turns, greetings, and academic tasks.

Summary of Findings for Research Question 2 - Inclusion

In accordance with research question two, participants were asked numerous questions regarding their perspectives on the effectiveness of inclusion of children with autism in the

general education environment. Specifically, the researcher asked the participants to describe their thoughts involving the inclusion of children with disabilities in the general education classroom. All participants overwhelmingly agreed that children with disabilities have a right to be educated in the general education classroom or in the least restrictive environment. This type of placement allows children with autism a continuum of service in a setting with their typical peers and an opportunity to receive their instruction in the least restrictive environment (Mastropieri & Scruggs, 2010; Potts & Howard, 2011). More specifically, they believe children with autism will benefit from the environment with typical peers, but the amount of time spent in the general education environment depends on the specific needs of the children. Bryant, Smith, and Bryant (2008) and Loiacono and Valenti (2010) define inclusive education as a setting in which students with disabilities have access to the general education curriculum, participate in activities with their typical peers, and attend their neighborhood school, whenever possible. When discussing inclusion, all participants agreed that each plan was individualized to the needs of the students, and an inclusive environment will benefit children with autism. However, when discussing the general education environment for students with autism, an unexpected discovery was uncovered. The autism support teachers believed the general education teachers have a lack of training and background knowledge to properly support children with autism in the general education environment. Even when adaptations and modifications are made and the materials for the classroom environment are prepared for the teacher, the general education teachers are not always sure how to assist children with autism, especially in the areas of communication and sensory integration. There is a misconception that students with autism have behavioral issues. In reality, there is a need for alternative interventions to assist the children with autism in the general education classroom. Sanford (2009) researched general education classroom supports

for children with autism and found the majority of the teachers believed supports were important, but few reported utilizing those supports in the classroom. In Sandford's study, teachers expressed a need for additional practical training. The respondents understood best practice strategies and supports, but were unlikely to implement them effectively without hands-on training. Baker (2012) reported that few educators receive training on evidence-based practices, even though students with autism are also served in the general education classrooms.

Inclusion and Achievement Levels

The participants made statements which revealed they believed students with autism could increase their achievement levels by interacting with their general education peers. Participants believed the students became more aware of their peers and this made them more comfortable and confident in the classroom. They also believed that peer modeling was a benefit because the students would witness their typical peers completing academic activities, and their example could lead to greater success for the students with autism. In addition, the modeling could help the students with their social interactions and turn taking skills because they typically understand and observe what other children are doing. Goodman and Williams (2007) suggested there is evidence that children with autism, who demonstrated higher abilities, can increase their academic gains by utilizing inclusion with general education peers. If the students are given the appropriate supports and accommodations, they can increase their achievement levels in the general education classroom. When achievement levels increase, students are more than likely becoming comfortable in the classroom and environment; therefore, social learning can be introduced as well.

Inclusion and Social Skills

The participants strongly supported the idea that children with autism can increase their social skills by interacting with typical peers in the general education classroom. Participants also believed there needs to be an established environment where the student can be successful with peer interactions because the student models will help the children with autism understand and demonstrate appropriate behaviors. Sansosti's (2008) research indicated that it was necessary to insure that general education students and children with autism develop meaningful relationships with each other by promoting acceptance and providing support for interactions between the students. P4 spoke specifically about teaching social skills and to begin with the foundation of what to do and how to act in a situation. P4 utilizes this practice at recess and during lunch bunch groups. It is most effective when general education and support students learn social skills together and then practice them in small group settings with a goal to have the skills generalized in the classroom or recess setting. According to Trozzo (2006), it is best to engage in socialization when typical peers are talking, playing, interacting, and engaging children with autism. It helps them to gain an understanding of how to interact and hopefully develop language skills as a result. While engaging in social environments, children with autism are often observing and modeling appropriate behaviors of their typical peers as well.

Inclusion and Observation and Modeling

The participants were asked to discuss their beliefs on whether children with autism can learn by observing and modeling other children and adults. All participants responded positively by agreeing this was an essential way for children with autism to learn because they become more aware of what other students are doing and this method provides positive role models who are modeling appropriate behaviors. According to Bandura, learning can also occur by

observing the actions of others in their environment. There is a social element in his inclusion theory which meant children can learn new information and model behaviors by watching people around them. The goal was then for the children to eventually imitate the behavior, noting that this type of observational learning, or modeling, can be used to help children with autism in an inclusive setting in the general education environment (Cherry, 2014; Sincero, 2011).

Co-Teaching

A surprising revelation regarding the use of the co-teaching model was discovered. There were only two participants who had experience utilizing the co-teaching model with the general education teacher. For those two participants, co-teaching was a positive learning experience because they collaborated a great deal and had an opportunity to work with all the students in small groups. Their approaches to teaching the groups were different, but they utilized the model in the way it was meant to be implemented. According to Brown, Howerter, and Morgan (2013), Cook (2004), Friend (2008) Friend and Bursuck (2012), Ploessl and Rock (2014), SERC (2014), Shumway, Gallo, Dickson, and Gibbs (2011), the co-teaching model is effective when it takes place in the general education classroom with shared teaching responsibilities between the general and special education teachers.

An additional revelation was revealed when the participants suggested there were many challenges to implementing the co-teaching model with the general education teachers. The participants stated that the biggest hurdle was a lack of time to communicate with the general education teachers because they did not have common planning time. They did not have time built into their day to meet, discuss, and organize a common lesson, and they often times could not leave their classrooms because of the growing number of students who receive supplemental support from the autism teacher. Friend (2008) reiterates that if co-teaching is going to be used

as a successful strategy, teachers' schedules must permit co-planning time to allow for collaboration and for teacher relationships and classroom roles to be established.

All eight participants report they utilize a form of the co-teaching model in their support classroom with the special education teacher and the paraprofessionals or the therapeutic staff support personnel. All expressed the background knowledge to implement it in their classroom using small groups to work on centers or specific goals for the students. Additionally, participants also utilized paraprofessionals in the general education environment for their autism support students, but the paraprofessionals did not co-teach with the general education teacher. According to Giangreco (2003), providing paraprofessional support for a student with a disability is a way to facilitate inclusion in the general education setting. Paraprofessional support can ensure that students with autism receive the appropriate amount of attention without allowing them to fall behind in the general education curriculum.

Summary of findings for Research Question 3 – Alternative Methodologies

In accordance with research question three, participants answered a sequence of questions that were related to their perspectives on the effectiveness of alternative methodologies used to assist children with autism in the areas of communication skills, socialization, and repetitive behavior. All participants used a variety of alternative methodologies with their students, and because students have such unique sets of circumstances as well as diverse levels of the disorder, the participants discussed numerous intervention options. According to MIU4 (2014), autism disorder is so diverse that treatment plans require numerous interventions that utilize “speech, language, occupational therapists, assistive technology therapists, and positive behavior specialists” (p. 1) just to name a few.

Communication

All participants utilized numerous methods to encourage language development. In order to increase communication and encourage children with autism to use their language for requests, wants, and needs, participants agreed that repetition and reinforcement would encourage independent practice for the students. Participants also agreed that preparing the environment so that they have the opportunity to teach, model, explain, and use words and phrases with the students was very helpful. They also utilized repetition, sentence strips, picture cards, labeling, gestural prompts, visual cues, sign language, and manding. According to Kids Health (2013) and Nuner and Griffith (2011), most children diagnosed with autism have some type of language disorder which inhibits their ability to communicate effectively. Children with autism can have difficulty with receptive language, which is understanding or processing the language that is spoken, and with expressive language, which is the ability to put words together to vocalize their wants and needs and to use language in an appropriate way (Kids Health, 2013; Mauro, 2013). Because this language disorder could hinder their ability to communicate, assistive technology could assist in this area of need.

Assistive Technology

A common theme among participants was that assistive technology has had an impact on language development for children with autism, particularly with expressive language. With the increase in modern technology in today's world, most students use an iPad or an iPad Mini to help facilitate communication. According to Autism Family Services (2012) and Fin (2012), Apple iDevices have become more popular than any other speech generating device because of selection of applications (apps) available to meet the individual needs of students. They are also easy to navigate and are socially acceptable.

Participants have also used other devices such as the DynaVox, Mo, Mini Mo, and Vontage Light. Additionally, the use of computer programs that are available to the students using a computer in the school environment have also developed and increased. Some of those options include Clicker 6, Pro Lo Quo to Go, Touch Chat, Razz Kids, and Go Talk, just to name a few. Fan (2012) describes an assistive technology device as “any item, piece of equipment, or product system, whether acquired commercially, off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a child with a disability” (p. 16). Even though language abilities differ for each child, all participants agreed that assistive technology can assist with the expression of the students’ wants and needs. This type of intervention can include a wide range of strategies to help the students communicate more effectively with others (expressive communication) or help the students understand what others are saying to them (receptive communication) (Mirenda, 2001; PBS, 2013b; Quill, 1997).

A surprising revelation occurred when participants discussed some of the limitations to using assistive technology. Because the device used for each child is based on their needs, there could be several devices for the teacher to use, and there was a learning curve for the support teacher on how it is utilized in the classroom. It is a challenge for teachers to have the time to learn the device, learn how to program the device, and then show the students how to use it. They rely heavily on the speech therapist to assist with programming and training, and then modeling for the teachers and students. Also, there seems to be a lack of transfer of skills between school and home; therefore, the device is not used as a functional communication tool outside the classroom and the only place the students were using the device was at school. In order to use the device successfully, it needs to be used functionally across all environments

throughout the student's day. As a partner to assistive technology, speech services can offer a variety of other methods to enhance communication needs.

Speech Services

All participants partnered with the speech therapist daily to integrate best practices for speech and language development into the student's day. Services varied greatly depending on the needs of the students, and some students worked with the therapist once a week, while others worked with the therapist more often. The speech therapist integrated into the support classroom and provided group instruction, or the therapist removed the students and work one-on-one to assist with individualized goals. All participants utilized speech therapist to help with assistive technology and worked collaboratively to develop specific plans and outcomes for each student. According to Autism Speaks Family Services (2012), Kids Health (2013), and The Early Learning Institute (2014b), speech therapists will develop language intervention activities where the therapist will interact with children to stimulate language development. They will build speech and language skills by modeling correct pronunciation and articulation therapy for children with autism. As important as it is to build speech and language development and skills, it is equally important to assist children with their social skills. The more language they develop, the more likely they will seek others to engage in interactions.

Socialization

Although the participants use a variety of methods to assist children with socialization, the most common theme among teachers is arranging an environment where students can be successful and providing them the prompts and modeling to aide with their interactions. The participants modeled by using social stories, student peers, and video modeling. Because socializing typically does not happen naturally, the opportunity to set up an environment for the

students was important among all the participants. According to Autism Speaks Family Services (2012), Gallagher (2004), and Guldberg (2010), support of social interaction by the teacher and/or therapist was an important piece of students' educational plans. Most students with autism want to interact with others, but they lack the necessary skills to engage appropriately. They need to be taught social interactions and how to interpret social cues.

Four participants also utilized the assistive technology to help initiate conversations for the children with autism. Typically, pages would be created on the device to initiate a conversation with another student, ask questions about another student, or initiate a simple greeting with students and teachers. These scenarios would help the student initiate verbalizations which could ultimately lead to an interaction between the student with autism and their typical peers, with an ultimate goal of providing a means of socialization for the student. And when students can't initiate verbalizations on their own, they often time seek self-stimulatory behaviors, or repetitive behaviors, as a means of finding comfort.

Repetitive Behaviors

Another common theme among participants was a need to reduce repetitive behaviors and utilize sensory integration as an alternative intervention strategy. The participants stressed that importance of learning the functions of the repetitive behaviors and finding an alternative to replace the behaviors that may be impeding the students' learning environment. Some sensory preferences reflect self-stimulation for children with autism and these behaviors were usually repetitive in nature. These behaviors provide sensory stimulation and can include rocking, hand flapping, and gazing at the lights (Nuner & Griffith, 2011).

Participants agreed that redirection often helps the students. In addition, collecting data to develop a functional behavioral assessment can assist in this area of need. In order to develop

interventions for certain behaviors, teachers must learn the function, or the cause, of the behavior. The behavior usually serves a purpose for children with autism, and they act a certain way to get a desired outcome (Jordan, 2014; Morin, 2014; Mueller, 2014; Starin, 2011).

Sensory Integration

Common among all participants was the need to implement sensory integration and breaks into the student's day. Some students have a more severe need than others, but all participants utilized this technique with their students. Some participants believed sensory breaks needed to be built into the students' day as a means of prevention of behaviors and a way to self-calm. All participants used a variety of items in the classroom including weighted vests, seating options, brushing programs, fidget toys, and sensory bins. Estimates show that between 45 and 96 percent of children with autism demonstrate sensory difficulties such as processing, interpreting, and responding to sensory stimuli (Ben-Sasson et al., 2009; Lane, Young, Baker & Angley, 2010; Schaaf et al., 2013). While some children experience difficulty in processing sensory input and cannot respond to tasks and environmental demands, sensory modulation occurs when a child is unable to respond to sensory information with behavior that is relative to the intensity of the input (Miler et al., 2007; Zimmer & Desch, 2012).

Six participants had a sensory room in their building and sensory breaks could be provided to the students in a separate area with support. The sensory room was used for scheduled breaks or when students would become overwhelmed by something and needed time to decompress. The equipment varied among schools, but most sensory rooms included swings, tunnels, trampolines, large balls, sensory chairs, blocks, stationary bikes, scooters, large foam shapes – any piece of therapeutic or recreational equipment that could be used to provide the

student with the input they were seeking at the time. Sensory integration and occupational therapy are collaborative in nature as they both assist children with environmental demands.

Occupational Therapy

All participants shared the importance of utilizing an occupational therapist (OT), not only for sensory integration and repetitive behaviors, but also for assistance with fine and gross motor skills for their students with autism. Like the speech therapist, the OT provides supports in the general education classroom, the autism support classroom, or on a one-to-one basis with the students. Depending on the needs of the students, the OT will see the students once a week or numerous times during the week. All participants believed the OT was a valuable resource to help develop strategies for intervention for the students. The OT could include recommendations to reduce behaviors or implement new ideas in the general education and support classrooms. According to Vann (2014), occupational therapists in the education field often work on fine motor control, such as handwriting, and therapy can occur in the classroom while the child is among their peers, or the child can be pulled-out to work one-on-one with the therapist. The OT can also help students learn the skills they need or how to structure their day effectively and be as independent as possible, while still focusing on the individual goals of children with autism (Therapeutic Early Intervention Services, 2014; Vann, 2014; WebMD, 2014a; Wonder Kids, 2011). Likewise, a service provider can also provide the same one-on-one support for children with autism and assist in making school and home goals overlap in both environments.

Wraparound Services

As an alternative methodology that supports behaviors in children with autism, wraparound services and supports were a common theme discussed among participants. All participants utilized wraparound services in their classrooms and in the general education classrooms at some

point during the day. Because the service providers' main responsibility is to work on student behaviors, participants mainly used the therapeutic staff support (TSS) in the general education environment, much like a paraprofessional would be used. Wraparound service provided support for the general education teacher as well, so the child who was achieving at grade level could participate more often in the general education classroom. According to Autism Transition Handbook (2013), Pennsylvania Health Law Project (2011), The Watson Institute (2013), The Watson Institute (2010), and Vocational & Psychological Services (2013), wraparound services focus on behavioral interventions and services are provided in the home, in school, or in the community. Services are individualized to meet the unique needs of children and families, and services build upon the strengths of the individual children to develop positive intervention strategies.

The participants also believed there was a nice transition of services between home and school when utilizing a TSS in both environments. Wesley Spectrum Services (2014) states that some of the best outcomes and work can be achieved in the child's home environment where the work and successes were shared with the entire family and by utilizing a wide variety of therapies that "include auditory, visual, and tactile modalities in collaboration with structured schedules and visual strategies" (p. 1).

Despite the use of wraparound services, a surprising discovery was uncovered. Participants shared common concerns regarding the service. Because children with autism need structured routines and consistency, the participants were very concerned with the high turnover rate of TSS staff. One child could have numerous TSSs throughout the year, and the participants believed, for some students, it was like starting from scratch when new personnel would begin

working with their students. When this occurred, the participants would often see some type of regression for their students with autism.

Recommendations

The results of this study offered several considerations for future research. Areas for future research includes strategies to assist administrators, general education teachers, and parents on ways to work together to implement interventions in inclusive settings for children with autism.

Administrators

As the number of students diagnosed with autism continues to increase, so does the student enrollment number for children with autism in their home school districts. Like special education teachers, administrators must be prepared to provide environments that meets the needs of these children and they must have a general understanding of the disorder to support the students. Throughout the research, it became apparent that utilizing the co-teaching model between the general education and special education teachers would be beneficial, but it was rarely implemented in the manner in which it is supposed to be. Therefore, administrators need to promote this collaboration as much as possible and provide common planning time for lesson plan design for the teachers. Likewise, it is extremely important that administrators provide the necessary professional development for teachers to learn the different strategies used with the model. Whenever possible, paraprofessional staff support needs to be increased to meet the needs of the children in the support classroom and in the general education environment.

General Education Teachers

After reviewing comments and suggestions made by the participants, it is evident that general education teachers need more training on how to work with children with disabilities

such as autism. The general education teacher plays an equally important role in the education of children with autism, as does the support teacher. The general education teacher should have consistent professional development on special education and the implementation of intervention strategies for children with autism. General education teachers also need more training to understand the children's individual education plan and how to make accommodations in the general education classrooms and how to make adaptations and modification to curriculum. It's paramount that general education teachers understand and implement differentiated instruction and this process can be done through co-teaching with the special education teacher. In addition, sensory integration, communication, and socialization are very important for general education teachers to understand. They should become familiar with the speech and occupational therapists so all interventions can be implemented across all environments. Most importantly, general education teachers can help with the negative connotations associated with autism and assist in educating others. The more general education teachers, parents, and typical peers understand the disorder, the more the child with autism will be welcomed in the typical environment.

Parents

It could be argued that future research could include the early identification process for children with autism. It is paramount that parents recognize the early signs of the disorder so they can begin interventions as soon as possible. Whenever possible, parent should utilize outpatient supports and services as well as wraparound services for their children with autism. If detected early enough, interventions could help build an early foundation of supports as children enter elementary school. As noted in this research, special education teachers believed parents are the number one resource for teachers because they know the children and their strengths and

weaknesses better than anyone. Parents then become an asset to the educational environment and can become advocates for their children. Equally important, parents should become well-versed with the academic curriculum for their children so they can be consistent with learning techniques that are used in the school environment.

Opportunities for Future Research

There are many opportunities for future research to confirm and extend upon the findings discovered in this study. There are numerous IUs across the state of Pennsylvania and this study could be replicated in any one of them. If this study would be conducted in another rural setting, it would be interesting to determine if the same findings would exist. Likewise, if the study were replicated in an urban setting, it would be interesting to determine if the same type of interventions were used with children based on a different school structure and different living environment. It would also be interesting to determine if a different level of socioeconomic class and/or setting would provide additional school resources for students.

This study was limited to highly qualified teachers who work with children with autism between the ages of six and ten. Although research does indicate the earlier intervention strategies are introduced to children with autism that there was higher potential to make gains in the areas of communication, socialization, and repetitive behaviors, it would be of interest to discover if there was the same potential for children who are identified at an older age and if they could make the same gains.

This study focused on highly qualified elementary teachers. It may be of interest to discover the types of intervention strategies that would be used if this study were replicated with highly qualified middle school and high school teachers. The type of interventions may be very similar in nature, but at different academic and social levels. The interventions could also vary

greatly, or new types of interventions might be necessary based on the age and maturity level of the students. Additional behaviors may be prevalent with older students with autism.

This study only provided one perspective. All the information that was provided and the data analysis were based on the teacher participants' perspectives. Future research could be completed utilizing the perspectives of intervention strategies from parents of children with autism, from siblings of children with autism, from therapists who work with children with autism, and from directors and administrators of school districts who approve and help implement these strategies. Their perspective may either refute or support the findings. In order to understand the best way to implement these strategies across all environments, it would be necessary to include the perspectives of all the stakeholders who work with children with autism.

Finally, one of the serendipitous findings of this study was the lack of formalized training programs for general education teachers in the area of teaching intervention strategies to children with autism. For this reason, an additional qualitative study that could add to future research would be the perspectives of implementing intervention strategies by general education teachers. The study would focus on training programs for teachers of children with autism and the professional development for this population of educators.

Summary

The purpose of this study was to explore the perspectives of teachers on intervention strategies used in inclusive settings with elementary-aged children with autism. After analyzing and evaluating the data, this study sought answers to several questions regarding the effectiveness of those interventions and how they are implemented in inclusive instructional environments. The broad perspectives gathered from this study examined a few major themes of alignment that emerged significant to the responses given by the participants. Each child with

autism has a unique set of skills and deficiencies in the areas of communication, socialization, and behaviors. Therefore, it was confirmed that there was not one specific strategy or intervention that worked for all children identified with autism. With multiple interventions available to assist in all three deficit areas, participants utilized the most common approaches such as TEACCH, PECS, DTI, social stories, and modeling, to help children with autism with every aspect of their day. While not all interventions worked the same for all children, a variety of methods were used consistently to assist the children with their individual goals and needs. In addition, autism support teachers were strongly committed to developing and implementing new strategies and interventions to provide the supports necessary to assist their students.

There was a strong belief that inclusion is beneficial for children with autism in the areas of achievement, socialization, and observation and modeling. Teachers believed students with autism should be included with their typical peers, but there was also a belief that inclusion should only be done to an extent that is appropriate for individual children. The participants believed the benefits outweighed any negatives by including their students with their typical peers.

Surprisingly, there was a consensus among participants about the lack of formal training for general education teachers regarding special education and how to specifically work with children with autism. Therefore, it was noted that general education teachers struggled with implementing interventions in the regular education classrooms. Subsequently, the co-teaching model was not utilized by all participants in the general education classrooms, and the model could provide vast supports for the teachers and students if it is implemented correctly and in a collaborative setting.

By utilizing some of the intervention strategies that are identified in this study, all stakeholders involved in the lives of children with autism can better assist with the challenges that face these children across all settings in the home, school, and community environments. When intervention is implemented across all settings, there is an opportunity for all participants to work collaboratively to do what is in the best interest of children with autism, as well as to work to meet all of their needs.

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APPENDIX A

TEACHER INTERVIEW QUESTIONS

General Teaching Background

1. How many years have you been a teacher?
2. How many years of experience do you have working with children with autism?
3. What does it mean to you to be a teacher of elementary-aged children?
4. Describe any professional development training you have taken regarding autism.

Beliefs about Autism in Education

5. Describe your thoughts regarding the notion that students with disabilities have a right to receive their education in the regular education classroom.
6. If you had to describe autism to another teacher, what words would you choose? Why?
7. Describe some of the characteristics have you observed in children with autism.
8. Describe your feelings about when you first learned a child with autism was assigned to your classroom.

Teaching/Intervention Strategies

9. There are many approaches to working with children with autism. Describe the techniques and approaches that have worked best for you.
10. Describe your experience using intervention strategies in the classroom with children with autism. (Discrete trial teaching, floortime, PECS, TEACCH, Verbal Behavior)
11. Describe your experience using supplemental intervention strategies in the classroom with children with autism. (social skills, modeling, video modeling, cognitive behavior therapy, social stories)
12. Describe how you utilize the co-teaching model and how it is implemented for children with autism. What are the challenges, if any?
13. Describe your inclusion program and the supports utilized for children with autism in the general education classroom. How does this differ from co-teaching?
14. Describe your comfort level in implementing the IEP goals in the regular education setting. What are the challenges? Is it possible to meet all goals utilizing inclusion?
15. Describe your thoughts on whether students with autism can increase their achievement level by interacting with general education students.
16. Describe how you differentiate the instruction for children with autism.
17. Describe strategies used in a pull-out program and when this works best for the student. Should some services be delivered in a separate classroom? If so, why?
18. Describe the techniques you would use to encourage language development.

19. Describe your experiences and strategies used to assist a child with autism in the area of communication (expressive and receptive). Also, describe your experience utilizing communication devices in the classroom. Are there challenges using devices?
20. Describe your experiences and strategies used to assist a child with autism in the area of socialization. How do you incorporate a communication device?
21. Describe your thoughts on whether students with autism can increase their social skills by interacting with general education students.
22. Describe your experiences and strategies used to assist a child with autism in the area of repetitive behavior and sensory input.
23. Describe your thoughts and experiences in utilizing speech and OT in the school setting for children with autism. Are they positive supports?
24. Describe your experiences working with wraparound personnel in the classroom and the collaboration between the school and the service provider.
25. Describe our experience in working with nutrition and diets for children with autism.
26. What adaptations do you make when teaching a child who is disruptive or has attention difficulties? Describe your experience working with a functional behavioral assessment.
27. Describe your beliefs on whether children with autism can learn by observing and modeling other children and adults? Describe when this has taken place in your classroom.
28. Describe any important resources you have found to be valuable in teaching a child with autism (other teachers, parents, therapists, curriculum, books, websites, etc.)
29. Describe the most challenging part of teaching a child on the spectrum.
30. Describe the most rewarding part of teaching a child on the spectrum. What have you learned from the child?
31. What advice can you provide to another teacher who will work with a child with autism in the future?

APPENDIX B

EMAIL TO EXPERTS IN THE FIELD

Dear Dr. **,

I am writing to you as a doctoral student at Indiana University of Pennsylvania. I am the high school principal at Slippery Rock Area School District, and I am an advocate for special education students, specifically those children diagnosed with autism.

I have become very passionate about studying the best intervention strategies used in an inclusive environment for these children, which was certainly inspired by your research. For the past year, I have been researching the implementation of intervention strategies for elementary-aged children in an inclusive setting. Recently, my advisor, Dr. Kelli Paquette, and I have discussed a research approach to my dissertation in this field. Through my research, I noticed that there are many ideas for implementing interventions; however, the process seems somewhat fragmented because each child with autism has a unique set of needs. There is no doubt in my mind (especially after reading your book and articles) that intervention is beneficial to students.

As a result, the focus of my research is directed toward the perspectives of teachers on the implementation of intervention strategies for elementary-aged children diagnosed with autism. My overall goal is to learn about what works best and to provide a framework and basic understanding of the developmental process and assessment of autism, as well as interventions available to assist in making appropriate placement options for children with autism. I am in the early stages of planning my qualitative study, and I plan to interview eight highly qualified elementary teachers.

I write to you, an expert in this research, to ask if you see the merit in this study? Any information, advice, or other contacts that you feel would be helpful to me would be so greatly appreciated!

Thank you very much for your time!

Sincerely,

Kristie Shulsky

APPENDIX C

EMAIL TO INTERMEDIATE UNIT DIRECTOR

Dear Dr. **,

I hope this letter finds you well and enjoying a successful school year. My name is Kristie Shulsky, and I am a doctoral student in the Administrative and Leadership Studies program at Indiana University of Pennsylvania. I am also the high school principal in the Slippery Rock Area School District, and I am conducting a research study that examines the perspectives of teachers on implementing intervention strategies in inclusive settings with elementary-aged children with autism.

I have become very passionate about this topic, as I am an advocate for special education students, specifically those children diagnosed with autism. For the past year, I have been researching some of the best practices used with this population of students. Through my research, I noticed that there are many ideas for implementing interventions; however, the process seems somewhat fragmented because each child with autism has a unique set of needs.

As a result, the focus of my research is directed toward the perspectives of teachers on the implementation of strategies to best meet the needs of their students. My overall goal is to learn about what works best and to provide a framework and basic understanding of the developmental process and assessment of autism, as well as interventions available to assist in making appropriate placement options for children with autism.

I am writing today to request your assistance. I am seeking a purposeful sample of teachers from Western Pennsylvania who will be eligible to participate in my study. I am hopeful you will be able to assist me in developing a list of potential participants, along with their email addresses, so I may continue with the process of my research. Each teacher will be sent, via email, an invitation letter along with the consent protocol. If they choose to participate, they will return the signed consent to me.

The following list is the criteria to be eligible for participation.

- *Highly Qualified Status (certified in special education and elementary education)
- *Minimum of three years experience
- *Works with elementary-aged children (six to ten years old) diagnosed with autism

The potential participants can be the classroom teacher and/or the autism support teacher.

Can you please confirm your assistance by responding to this email. I anticipate IRB approval of my study in early February, and I will contact you directly to request the names and email addresses of potential participants shortly thereafter.

Thank you very much for your time and cooperation with this important matter. If you have any additional questions regarding this request or my study, please feel free to email or contact me at the information provided below:

Work Phone: (724) 794-2960 X2000
Cell Phone: (412) 915-0005
kristie_shulsky@slipperyrock.k12.pa.us

Your assistance is very much appreciated.

Sincerely,

Kristie Shulsky

APPENDIX D

TEACHER'S INFORMED CONSENT COVER LETTER

Dear _____,

I hope this letter finds you well and enjoying a successful school year. My name is Kristie Shulsky, and I am a doctoral student in the Administrative and Leadership Studies program at Indiana University of Pennsylvania. I am conducting a research study that examines the perspectives of teachers on implementing intervention strategies in an inclusive setting with elementary-aged children with autism. The sample from which I seek to collect data has the criteria to include adult individuals who work as teachers in a school district in Western Pennsylvania. Teachers will have a minimum of three years of experience with highly qualified teaching status, and will work with children (ages six to ten years old) diagnosed with autism.

You are invited to participate in this study. In order to help you make an informed decision as whether to participate, additional details and information regarding the research methods used in this study are below:

This study will use a face-to-face interview method that solicits responses from currently practicing elementary teachers utilizing the attached interview questions. Specifically, I would seek to interview you for approximately 45 minutes at a mutually agreed-upon location that is convenient for you. The interview will be recorded using a small audio recording device. After concluding the interview, you will receive a transcript of your responses. You will then have the opportunity to review the transcript to verify its accuracy, as well as communicate to me any necessary clarifications via email, phone, or personal conversation. Your responses in this study will remain confidential. If you are willing to participate in the study, you will sign a consent form indicating your agreement to participate prior to your involvement in the study. You are free to refuse to answer any question, as well as withdraw from the study at any time, by contacting me through personal conversation, written communication, phone call, or email.

If interested, please complete the consent form and either scan it and send back to me in email, or return it to the address listed on the next page.

If you have any questions regarding this study, you may contact me by phone or email at the information provided below:

Cell Phone: (412) 915-0005

Work Phone: (724) 794-2960 X2000

Email: pgdh@iup.edu

Your time and cooperation is very much appreciated. Thank you for considering my invitation to participate in the study.

Sincerely,

Kristie L. Shulsky

Principal Investigator:

Kristie L. Shulsky
Doctoral Candidate, IUP
104 Hibernia Drive
Harmony, PA 16037
(724) 368-4884

Faculty Sponsor:

Dr. Kelli Paquette
Professor/Assistant Chairperson
Professional Studies in Education
329 Davis Hall
Indiana University of Pennsylvania
Indiana, PA 15705
(724) 357-2400

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730)

APPENDIX E
INFORMED CONSENT

Title of the Study:

The Perspectives of Teachers on Intervention Strategies Used in Inclusive Settings with Elementary-Aged Children with Autism

Researcher:

Kristie L. Shulsky
104 Hibernia Drive
Harmony, PA 16037
pgdh@iup.edu
Cell: (412) 915-0005
Work: (724) 794-2960 X2000

Advisor:

Dr. Kelli Paquette
Professor and Assistant Chairperson Professional Studies in Education
329 Davis Hall
Indiana University of Pennsylvania
Indiana, PA 15705
Phone: (724) 357-2400

Purpose of the Study:

The purpose of this qualitative study is to describe the perspectives of teachers regarding their experiences in implementing intervention strategies in an inclusive setting for elementary-aged children with autism. It will also help to determine how effective treatment plans could assist with the developmental delays of children diagnosed with autism. School districts are implementing appropriate services through different teaching strategies and classroom models to ensure the success of all students, specifically those with disabilities such as autism.

Procedures for the Study:

After your acceptance to participate in the study, I will arrange a meeting with you at a time and location of your convenience. At this meeting, you will participate in an interview focusing on your perception of the use of intervention strategies used in an inclusive environment with elementary-aged children with autism. The interview will last approximately 45 minutes in length. An audio recording device will be used to transcribe the interview after its completion. You will receive a copy of the transcript and be asked to review it to ensure accuracy and help to clear up any miscommunication.

Risks and Benefits:

There are no known risks to participate in this study.

The importance of this study lies in identifying and implementing appropriate services through different teaching strategies and classroom models to ensure the success of all students, specifically those with disabilities such as autism. This research study will be useful for school administrators, special education directors, special education teachers, regular education teachers, and especially for parents of children with autism. This study will provide a framework and basic understanding of the interventions available and can assist in making appropriate placement options for children with autism.

Compensation:

There will be no compensation for participating in this study.

Confidentiality:

The only people who will have access to my study will be me, my advisor, and my dissertation committee. All materials pertaining to the study will be locked in a cabinet in my home office. Upon compilation of the study or any reports pertaining to the study, pseudonyms will be used for all individual participants in the study. You will be able to review all transcripts prior to the printing of any of your information.

Additional communication, such as phone calls or emails, will be treated in the same manner with regard to confidentiality. In compliance with federal regulations, your informed consent document and all research data will be retained for a minimum of three years. All such materials will be locked in a cabinet in my home office.

Voluntary Participation:

Participation in this study is voluntary and you may withdraw at any time by notifying me at the provided contact information. Also, you may refuse to provide information any interview question you are not comfortable answering.

More Information:

Please contact me (pgdh@iup.edu or (412) 915-0005) or my advisor, Dr. Kelli Paquette (kpaquett@iup.edu or (724) 357-2400) for additional details pertaining to this study.

If you are in agreement with the terms stated above and are willing to participate in this study, please sign the consent form enclosed and either scan and email it to me or mail it directly to the address in this informed consent letter. A copy will be provided so that you may keep it for your records.

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730)

VOLUNTARY CONSENT FORM

I have read and understand the information on the form and I consent to volunteer to be a participant in this study. I understand that my responses are completely confidential and that I have the right to withdrawal at any time through personal conversation, written communication, phone call, or email. I have received an unsigned copy of this informed Consent Form to keep in my possession.

Name (PLEASE PRINT) _____

Signature _____

Date _____

Phone number or location where you can be reached _____

Best days and times to reach you _____

I certify that I have explained to the above individual the nature and purpose, the potential benefits, and possible risks associated with participating in this research study, have answered any questions that have been raised, and have witnessed the above signature.

Investigator's Signature

Date

APPENDIX F

RESPONSE FROM INTERMEDIATE UNIT DIRECTOR

From: Kristie Shulsky [mailto:kristie_shulsky@slipperyrock.k12.pa.us]
Sent: Monday, December 29, 2014 2:38 PM
To: 'wayde.killmeyer@miu4.org'
Subject: Doctoral Candidate Assistance

Dear Dr. Killmeyer,

I hope this letter finds you well and enjoying a successful school year. My name is Kristie Shulsky, and I am a doctoral student in the Administrative and Leadership Studies program at Indiana University of Pennsylvania. I am also the high school principal in the Slippery Rock Area School District, and we spoke briefly after a TEAC meeting at SRU this fall. I am writing to you because I am conducting a research study that examines the perspectives of teachers on implementing intervention strategies in inclusive settings with elementary-aged children with autism.

I have become very passionate about this topic, as I am an advocate for special education students, specifically those children diagnosed with autism. For the past year, I have been researching some of the best practices used with this population of students. Through my research, I noticed that there are many ideas for implementing interventions; however, the process seems somewhat fragmented because each child with autism has a unique set of needs.

As a result, the focus of my research is directed toward the perspectives of teachers on the implementation of strategies to best meet the needs of their students. My overall goal is to learn about what works best and to provide a framework and basic understanding of the developmental process and assessment of autism, as well as interventions available to assist in making appropriate placement options for children with autism.

I am writing today to request your assistance. I am seeking a purposeful sample of teachers from Western Pennsylvania who will be eligible to participate in my study. I am hopeful you will be able to assist me in developing a list of potential participants, along with their email addresses, so I may continue with the process of my research. Each teacher will be sent, via email, an invitation letter along with the consent protocol. If they choose to participate, they will return the signed consent to me.

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Can you please confirm your assistance by responding to this email. I anticipate IRB approval of my study in early February, and I will contact you directly to request the names and email addresses of potential participants shortly thereafter.

Thank you very much for your time and cooperation with this important matter. If you have any additional questions regarding this request or my study, please feel free to email or contact me at the information provided below:

Work Phone: (724) 794-2960 X2000
Cell Phone: (412) 915-0005
kristie_shulsky@slipperyrock.k12.pa.us

Your assistance is very much appreciated.

Sincerely,

Kristie Shulsky

Kristie L. Shulsky
High School Principal
Slippery Rock Area School District
201 Kiester Road
Slippery Rock, PA 16057
(724) 794-2960 X2000
(724) 794-3559 (Fax)
kristie_shulsky@slipperyrock.k12.pa.us

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From: [Wayde Killmeyer](#)
To: [Kristie Shulsky](#)
Subject: re: Doctoral Candidate Assistance
Date: Tuesday, December 30, 2014 8:14:05 AM

Hi, Kristie,

Of course I remember meeting you and I'd be glad to help in any way that I can.

Will you be looking specifically for teachers from the IU or just for teachers that I might know who fit your criteria?

Happy Holidays to you and your family,

Wayde

Dr. Wayde Killmeyer

Executive Director
Midwestern Intermediate Unit IV 453
Maple St.
Grove City, PA 16127
724-458-6700 x1203



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APPENDIX G

RESPONSES FROM EXPERTS IN THE FIELD

Subject: RE: Expert Opinion on Autism
From: MED-Faber, M.D., Scott <SFA@the-institute.org>
Date: 02/08/15 05:49 PM
To: 'Kristie L Shulsky' <k.l.shulsky@iup.edu>

Hi Kristie,

I am a developmental pediatrician, who takes a biomedical approach to children with developmental disorders, but am not an expert on behavioral or educational interventions with children with autism. I do not write in the area of your proposed research. An overwhelming amount of literature has already been published in the areas you mentioned.

Please check out the work of Dr. Dawson of the University of North Carolina, the head of research for Autism Speaks, who has created an applied behavioral analysis program for young children that helps to normalize brain physiology.

Using this approach for older children may be appropriate. A full literature search in Pub Med, Google Scholar and psychological and educational databases will be important as you create your PhD project. Qualitative research simply samples the environment and may not be a major contribution to the field. I would suggest a small trial of a previously well research modality, altered for older students. EEG biofeedback is an emerging intervention that has some research in the high school setting, but more could be done. If you are interested in learning about and performing a study in this area at the High School level, perhaps I could point you in the right directions.

Good luck with creating your thesis and performing your study.

Scott Faber MD

-----Original Message-----

From: Kristie L Shulsky [<mailto:k.l.shulsky@iup.edu>]

Sent: Friday, February 06, 2015 11:17 AM

To: MED-Faber, M.D., Scott

Cc: kristie_shulsky@slipperyrock.k12.pa.us

Subject: Expert Opinion on Autism

Indiana University of Pennsylvania

6/1/2015

RE: Expert Opinion on Autism

Subject: RE: Expert Opinion on Autism

From: Dr <Dr>, Ph.D. <geraldine.dawson@duke.edu>

Date: 05/31/15 02:28 PM

To: Kristie L Shulsky <k.l.shulsky@iup.edu>

Dear Kristie,

I think this is such an important topic and I'm glad you are focusing on it for your dissertation. I suggest you consult with Dr. Connie Kasari who has been developing strategies for inclusion and classroom based interventions for children with autism who are elementary school age. Good luck with your work!

Sincerely,

Dr. Dawson

Geraldine Dawson, PhD
Professor of Psychiatry and Behavioral Sciences, Pediatrics, Psychology and Neuroscience
Director, Duke Center for Autism and Brain Development
President, International Society for Autism Research
Duke University School of Medicine
Duke Institute for Brain Sciences
2608 Erwin Road, Suite 300, Durham, North Carolina 27705
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-----Original Message-----

From: Kristie L Shulsky [<mailto:k.l.shulsky@iup.edu>]

Sent: Thursday, May 28, 2015 10:59 AM

To: Dr Geraldine Dawson, Ph.D.

Subject: Expert Opinion on Autism

Indiana University of Pennsylvania

Department of Professional Studies in Education
724-357-2400

Davis Hall, Room
303

Internet: <http://www.iup.edu>

570 S. Eleventh Street

Indiana, Pennsylvania 15705-1087

Dear Dr. Dawson,

I am writing to you as a doctoral student at Indiana University of Pennsylvania. I am the high
<https://mail.iup.edu/Session/9823818-u3na3weleJZMmFSXs93i-kmbczav/webmail.wssp>

1/2

6/12/2015

RE: Expert Opinion on Co-Teaching/Special Education Inclusion Practices

Subject: RE: Expert Opinion on Co-Teaching/Special Education Inclusion Practices
From: Merhaut, Joseph G. <joseph.merhaut@sru.edu>
Date: 06/03/15 11:43 AM
To: Kristie L Shulsky <k.l.shulsky@iup.edu>

Dear Kristie,

The study you are proposing has tremendous potential. I have had the opportunity to work in over 100 school districts across 4 different states including the Virgin Islands. Most of our work has been in the area of inclusion and co-teaching. The one disability group that needs a close look is students with Autism Spectrum Disorder.

Because there is such an array of disability from mild to severe, there is always question as to what interventions are best for students on the spectrum. I believe you will get a mixed review of teacher perspectives which is a good thing. Typically we see a lot of students with high functioning Autism included in general education classrooms. How about those students with more severe Autism regarding communication and socialization? This study could go in several directions.

I certainly support your proposal and look forward to reading it when you are finished.

Best of luck.

Joe

Joseph Merhaut Ed.D.
Associate Professor / Chairman
Department of Special Education
Slippery Rock University
Office Phone 724-738-2461
Cell Phone 724-822-0815

Office Hours Fall 2014
Monday 12:00-3:00
Wednesday 12:00-1:00
Friday 12:00-1:00

From: Kristie L Shulsky <k.l.shulsky@iup.edu>
Sent: Thursday, May 28, 2015 10:11 AM
To: Merhaut, Joseph G.
Subject: Expert Opinion on Co-Teaching/Special Education Inclusion Practices

Indiana University of Pennsylvania

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Indiana, Pennsylvania 15705-1087

<https://mail.iup.edu/Session/12166671-HVv5WcccKMTJRKwQ9PJc-kmbczav/webmail.wssp>

1/2

Subject: RE: Expert Opinion on Inclusive Practices

From: Marilyn Friend <marilynfriend@marilynfriend.com>

Date: 02/06/15 09:34 PM

To: 'Kristie L Shulsky' <k.l.shulsky@iup.edu>

Good evening, Kristie. Congratulations on being at the point of dissertation research...the end is in sight! Your study sounds interesting, but because I am in no way an expert on autism, I'm really not qualified to offer an expert opinion. I suggest you get in touch with any of the many authors who write explicitly and extensively about ASD--they will be able to provide far more detailed input than me.

Best regards,

Marilyn

Marilyn Friend, Ph.D.
Professor Emerita
The University of North Carolina at Greensboro
m_friend@uncg.edu
336.286.7050

-----Original Message-----

From: Kristie L Shulsky [<mailto:k.l.shulsky@iup.edu>]

Sent: Friday, February 06, 2015 11:21 AM

To: M_friend@uncg.edu

Cc: kristie_shulsky@slipperyrock.k12.pa.us

Subject: Expert Opinion on Inclusive Practices