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General Education Teacher's Knowledge and Confidence Teaching Children with Autism/Asperger's Disorder

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GENERAL EDUCATION TEACHER'S KNOWLEDGE AND CONFIDENCE TEACHING CHILDREN WITH AUTISM/ASPERGER'S DISORDER

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Abstract

Increases in the inclusion of children with autism and Asperger's disorder in general education classrooms made the knowledge and confidence teachers have when teaching these students vital. This study investigated differences among elementary, middle, and high school teachers' knowledge of educational strategies and confidence in teaching students with autism and Asperger's disorder within the general education classroom. An increase in inclusion mandated by federal laws requires general education teachers to have sufficient knowledge and confidence in their ability to successfully teach children with autism and Asperger's disorder. The participants of this study included 170 general education teachers, including 67 on the elementary level, 36 more on middle school level, 56 on the high school level, and 11 who did not specify level. Data was collected using a 25-question multiple choice and Likert scale survey based on review of the literature. A one-way ANOVA used to analyze teachers' school level and knowledge of strategies found a significant difference *(F)* (2, 154) = 3.299, $p < .05$. A Tukey HSD was used to determine the difference among groups and a significant difference was found between the mean scores of high school (M = 13.50) and elementary school (M = 15.78) teachers regarding strategy knowledge. However, the differences may be due to the greater need for elementary teachers to use the strategies (i.e., picture schedules and social stories) within the elementary level. No significant differences were found among teacher level and confidence in teaching children with autism/Asperger's disorder *(F)* (2, 156) = .358, $p > .05$. Pearson correlations found that there was a positive weak to moderate correlation between number of in-services attended and teacher confidence (r)(4) = .331, $p < .01$), and a positive moderate correlation between number of students taught with autism/Asperger's disorder and teacher confidence (r)(4) = .489, $p < .01$).

Introduction

This study focused on autistic disorder and Asperger's disorder as defined in The Diagnostic and Statistical Manual of Mental Disorders IV-TR (American Psychiatric Association, 2000). Autistic disorder was defined as, "the presence of markedly abnormal or impaired development of social interaction and communication and a markedly restricted repertoire of activity and interests" (American Psychiatric Association, 2000, p. 70). In autistic disorder, impairments in one area were required to be present before age three (DSM-IV-TR, 2000). A diagnosis of Asperger's disorder was made when an individual had "severe and sustained impairment in social interaction and the development of restricted, repetitive patterns of behavior, interests, and activities" (p. 90), but does not present with a clinically significant language or cognitive delay by age three (American Psychiatric Association, 2000). However, with the publication of the most recent version of the DSM, now DSM-V (released in May 2013) these two disorders (i.e. autism disorder and Asperger's disorder) have been combined into a single classification system known as autism spectrum disorder (American Psychiatric Association, 2013). Therefore with the DSM-V individuals previously labeled with well-established diagnosis of Asperger's disorder or autistic disorder will now be considered an individual with autism spectrum disorder (American Psychiatric Association, 2013).

Interestingly, it was only recently that Asperger's disorder and autistic disorder were considered individual mental health disorders, with autism, the first of the identified disorders, considered a diagnosis in 1980, when it was called infantile autism (Hincha-Ownby, 2008). Although infantile autism was a diagnosis according the DSM-III, it was not until 1990 that revisions in educational law included autism as a separate special educational label (Moores-Abdool, 2010).

Additionally, the educational label for autism is only relatively consistent with the DSM-IV-TR diagnosis of autistic disorder and Asperger's disorder. Children who receive the educational label of autism must demonstrate a significant impairment in their education because

of the disorder (IDEA, 1990). Thus, it is possible that children who were diagnosed with higher functioning forms of autism and Asperger's disorder were not eligible for special education (Turnbull III, Wilcox, & Stowe, 2002) because their educational performance was not impacted by their disability.

Moreover, children with autism and Asperger's disorder who were eligible for special education under the label of autism, or other special education labels, may still be taught in the general education classroom as a result of inclusion, the educational reform that promotes the least restrictive environment for students with disabilities (Loefgren, 2011). In the years 2002-2003, 25% of children in special education who were labeled as autistic spent 79% of their day in a general education classroom (Loefgren, 2011). Thus, educational reform and an increase in the numbers of children diagnosed with autism and Asperger's disorder who were educated in general classrooms made the general education teachers' knowledge and confidence in teaching children with these disorders critical to the students' success in school. This study sought to investigate general education teachers' knowledge and confidence in teaching students with autism or Asperger's disorder who were placed in inclusionary general education classrooms.

Literature Review

Autistic Spectrum Disorders

History. In 1911, Eugen Bleuler, a Swiss psychiatrist, was the first clinician to use the term autism to describe the withdrawal from reality that was seen in people with schizophrenia (Crespi, 2010). Then, in 1943, Leo Kanner, a physician from John Hopkins University, published a paper on autistic disturbances arguing that autism was, in fact, its own disorder (Blacher & Christensen, 2011). Kanner identified what he believed to be the key symptoms of the disorder: "autistic aloneness, speech disturbances, preservation of sameness and rote memory, and an unusual developmental history (strange eating habits, suspicion of deafness)" (Blacher & Christensen, 2011). In 1944, only a year after Kanner's paper, a paper on a similar disorder, identified as Asperger's disorder, was published by Hans Asperger (Lyons & Fitzgerald, 2007).

Since 1943, many professionals viewed autism as a disorder placed under the category schizophrenic reaction childhood type in the original DSM published in 1952 (Hincha-Ownby, 2008). It was not until 1980, when the DSM-III was released, that autism was identified as a distinct disorder (infantile autism) with its own diagnostic criteria (Hincha-Ownby, 2008). Then, in 1987, the name infantile autism was officially changed to autistic disorder within the DSM-III-R (Hincha-Ownby, 2008).

Unfortunately, for much of American public education history, children with all disabilities were commonly denied a free public education (Itkonen, 2007), and during this time, only one out of five children with disabilities received a public education (Yen & Mao, 2011). However, between the 1950s and early 1970s, a number of federal initiatives helped fund the training of special education teachers, but it was not until 1975, when the Education for All Handicapped Children's Act (PL-94-142) was passed, that public schools were required to provide an education to all children with disabilities (Itkonen, 2007; LaNear & Frattura, 2007; Yell, Rogers, & Lodge-Rogers, 1998).

The Education for All Handicapped Children's Act required that children with disabilities be assessed in public schools, and if their education was impacted by a specific disability, the children were deemed eligible for special education and individual education plans (IEP) were required to be developed to plan for the students' education (LaNear & Frattura, 2007; Yell, Rogers, & Lodge-Rogers, 1998). By law, education for students with disabilities were required to take place in the least restrictive environment (LaNear & Frattura, 2007; Yell, Rogers, & Lodge-Rogers, 1998).

These new laws certainly helped all children with disabilities receive an education; however, autism was not considered a disability category under the Education for All Handicapped Children's Act, and sometimes, children with autistic-like symptoms were placed in educational programs for the mentally retarded (Blau, 1985). It was not until the reauthorization of the Education for All Handicapped Children's Act (when its name was changed to the

Individuals with Disabilities Act, IDEA) in 1990, that revisions were made to include autism as a specific label within special education (Moores-Abdool, 2010).

Then, in 1994, the DSM-IV was issued, and included Asperger's disorder, although similar to autistic disorder, children diagnosed with Asperger's disorder do not have the early and severe developmental delays (before age 3) associated with autistic disorder (American Psychiatric Association, 2000). Unfortunately, the special educational label criteria for autism did not match the DSM-IV's criteria for either disorder on the autism spectrum (Safran, 2008). The educational definition of autism is:

> "a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences" (US Department of Education, 2012).

The educational label for autism does not have the same criteria as the DSM-IV-TR diagnosis of autistic disorder and also does not include Asperger's disorder. Autistic disorder is defined as, "the presence of markedly abnormal or impaired development of social interaction and communication and a markedly restricted repertoire of activity and interests" (American Psychiatric Association, 2000, p. 70). In autistic disorder, impairments in one area must be present before age three (DSM-IV-TR, 2000).

The IDEA definition of autism states that children can be labeled with autism if educational impairment is shown after age three in the required areas of social interaction, verbal, and nonverbal communication (US Department of Education, 2012). Therefore, it is possible that children with higher functioning forms of autism and children with Asperger's disorder often are not made eligible for special education (Turnbull III, Wilcox, & Stowe, 2002) because the educational definition of autism requires the disorder to cause a negative impact on academics

(Safran, 2008). Children with autism may have been eligible for special education under different categories for example, emotional disturbance (Turnbull III, Wilcox, & Stowe, 2002), mental retardation, or other health impairment (Safran, 2008). However, some children diagnosed with autistic disorder or Asperger's disorder may not have qualified for special education services at all, but due to Section 504 of the Americans with Disabilities Act, accommodations for children with autistic disorder and Asperger's disorder were required to be provided (Turnbull III, Wilcox, & Stowe, 2002).

For several years, it has been suggested both within the literature and in the professional community that autistic disorder and Asperger's disorder were on a continuum of the same disorder (American Psychiatric Association, 2010, Macintosh & Dissanayake, 2004; Sanders, 2009). Additionally, symptoms were thought to differ among intelligence groups, and it was thought that individuals who have higher intelligence have less severe symptoms of autism (Mayes & Calhoun, 2004). Ultimately, in May of 2013, the terms Asperger's disorder and autistic disorder were removed and in the DSM-V, these disorders were combined under the diagnostic category of autistic spectrum disorder (American Psychiatric Association, 2013). The DSM-V notes that individuals who have "well established diagnosis of autistic disorder, Asperger's disorder, or pervasive developmental disorder not otherwise specified should receive a diagnosis of autism spectrum disorder" (American Psychiatric Association, 2013, p. 51). The combining of diagnostic label into autism spectrum disorder may help to accurately identify individuals with the disorder as the Center For Disease Control (CDC) estimated in 2012 that the prevalence of children with an autism spectrum disorder was 1 in 88 (Centers for Disease Control and Prevention [CDC], 2012) with unpublished reports in 2013, indicating a prevalence of 1 in 50 (Centers for Disease Control and Prevention [CDC], 2013).

Labeling Confusion. Using the term "high functioning autism" (HFA) commonly appeared within the professional literature related to autism. Some researchers considered a person with HFA as an individual, who although diagnosed with autistic disorder, had an

"average" or above average IQ (Macintosh & Dissanayake, 2006; Noterdaeme, Wriedt, & Hohne, 2010). For example, one study combined individuals with high-functioning autism and Asperger's disorder into one category, calling both high-functioning autism (Mayes et al., 2009). Another group of researchers differentiated between the diagnosis of Asperger's disorder and high functioning autism but combined the groups when conducting much of their study (Mattila et al., 2010).

The IQ of individuals labeled as having high functioning autism varied by study, with the lowest IQ's of participants' being 70 to 80 (Macintosh & Dissanayake, 2006; Mattila et al., 2010; Mayes et al., 2009; Noterdaeme, Wriedt, & Hohne, 2010). Despite the lack of an official definition and IQ requirement for a label of high functioning autism, it is clear with the recent publication of the DSM-V that many professionals support the spectrum view of autism (American Psychiatric Association, 2013).

Characteristics

Intelligence. Autism often has been associated with intellectual disability (mental retardation: with an IQ of less than 70) (Charman, Pickles, Simonoff, Loucas, & Biard, 2011; Dawson, Soulieres, Gernsbacher, & Mottron, 2007; Edelson, 2006). Although, a meta-analysis of articles on autism and mental retardation found that most of the articles providing rates of mental retardation in individuals with autism were not based on empirical research and, even when they were, they often failed to specify how the empirical research was conducted (Edelson, 2006).

Edelson (2006) argued that when researchers use measures of intelligence that are appropriate, the incidence of mental retardation is lower then asserted in the past. For example, a group of researchers found that one third of autistic children had mental retardation when assessed using the WISC-III, yet, when these same children were administered the Raven's Progressive Matrices to determine intelligence, only 5 percent of them were considered mentally retarded (Dawson et al., 2007). Another study involving 75 children with autism found that 55% of children with autism had an intellectual disability when assessed using the Wechsler

Intelligence Scales 3rd Edition (WISC-III) (Charman et al., 2011). Interestingly, scores on The Wechsler Scales may depend on verbal comprehension skills (Dawson et al., 2007), and communication delays are required for a diagnosis of autistic disorder (DSM-IV-TR, 2000).

It may be that the different characteristics of the individuals who were diagnosed with autism or Asperger's disorder predicted their IQ score: One study that involved "high functioning" autistic children found that those with higher verbal IQ scores than performance IQ scores, or those with even scores in both areas, have a higher full scale IQ than those with a higher nonverbal IQ than verbal IQ score (Black, Wallace, Sokoloff, & Kenworthy, 2009). However, the IQ of children with autism was found to increase until around the age of eight, and that early verbal and/or nonverbal discrepancies in young children with autism decreased over time, with children who had higher IQs showing a decrease in discrepancies earlier (Mayes & Calhoun, 2003).

Additionally, individuals who were diagnosed with Asperger's disorder were found to have higher IQs then those with high-functioning autism (Holdnack, Goldstein, & Drozdick, 2011; Noterdaeme, Wriedt, & Hohne, 2010; Sauliner & Klin, 2007). Children with Asperger's disorder (who did not typically have a language delay) had higher verbal and full-scale IQs than those with high-functioning autism (who typically had an early language delay) (Noterdaeme, Wriedt, & Hohne, 2010; Sauliner & Klin, 2007). Also, adults and adolescents with high functioning autism showed lower full-scale IQ scores on the Wechsler Adult Intelligence Scale than adults and adolescents with Asperger's disorder (Holdnack, Goldstein, & Drozdick, 2011).

Academic profile. One group of researchers found that children with Asperger's disorder did not show a pattern of academic strengths and weaknesses (Griswold, Barnhill, Myles, Hagiware, & Simpon, 2002). When the academic achievement of 100 adolescents with autism was assessed (Mean IQ = 84), 73% had either a significant strength or weakness in reading, spelling, reading comprehension, arithmetic, or mathematical skill (Jones et al., 2009).

The reading skills (decoding, reading accuracy, and reading comprehension) of children with autism were thought to vary (Nation et al., 2006). It was stated that basic reading skills of many children with autism were typically intact and were correlated with IQ until age 8, when reading becomes less focused on basic skill (Whitby, Travers, & Harnik, 2009). However, reading comprehension appeared to be a common area of difficulty for all children with autism (Jones et al., 2009; Nation et al., 2006).

In one study, reading comprehension was often discrepant from IQ and was the only academic discrepancy significantly correlated to adolescents' level of autistic symptoms and social and communication difficulties (Jones et al., 2009). Reading comprehension was also impaired in a group of autistic children ages 6-15, and was thought to be partially related to poor understanding of language (Nation et al., 2006). It was thought that individuals with high-functioning autism were less able to use previously learned information to comprehend reading material (Walhberg & Maglinao, 2004). Also, writing was found to be an area of weakness for children with high-functioning autism (Mayes & Calhoun, 2008), a difficulty that continues into adulthood (Brown & Klein, 2011). It has been said that up to 60% of students labeled with high-functioning autism appeared to have a writing disorder and that many had difficulty with the graphomotor skills related to writing (Whitby et al, 2009).

Similar to their performance in reading, children with high functioning autism were often found to average computational mathematics skills, but mathematical problem solving was an area of difficulty (Whitby et al., 2009). One study found that individuals with Asperger's disorder actually had weak mathematical skills compared to their overall ability, although their mathematical abilities were still typically in the average range (Chiang & Lin, 2007). It was thought that students with autism may have problems with mathematics due to difficulty remembering the operation they are performing and their lack of understanding of the language used in the problem (Donaldson & Zager, 2010). Also, it is important to note that children with high-functioning autism were found to have weaknesses in processing speed (difficulty

processing routine information quickly), which also could cause academic difficulties (Mayes & Calhoun, 2008).

Social and adaptive skills. Poor social development was said to be the primary deficit in all forms of autistic spectrum disorders (Flood, Hare, & Wallis, 2011; Romanczyk, White, & Gillis, 2005). Studies have shown that children with autism exhibited disturbances in social interaction early in life (Adamson, Deckner, Bakemen, 2009; Chaing, Soong, Lin, & Rogers, 2008). Successful social interaction involves numerous skills such as nonverbal communication, verbal expression, paralinguistic, and social perception (Romanczyk, White, & Gillis, 2005). However, children with autism often had difficulties interpreting nonverbal cues, initiating verbal and nonverbal social interactions, and understanding and recognizing social rules (Flood, Hare, & Wallis, 2011; Wimpory, Hobson, & Nash, 2006). Much of the research related to autism and social skills focused on deficits in "theory of mind" which is an individual's ability to identify his/her own as well as others' emotions and intentions to predict behavior (Cole, Baron-Cohen, & Hill, 2007; Williams, 2010). Additionally, children with autism were thought to lack reciprocal social skills (Downs & Smith, 2004).

It is important to note that the presentation of autistic symptoms appeared to vary depending on an individual's level of intellectual functioning (Mayes & Calhoun, 2004). Research has indicated that children with higher functioning forms of autism had the intellectual ability to function socially, but often still failed to fit in with their peers, and had lower than expected adaptive social skills (Kenworthy, Case, Harms, Martin, & Wallace, 2010; Portway & Johnson, 2005; Saulnier & Klin, 2007). One group of researchers found that children with high functioning autism who had higher verbal than nonverbal skills appeared to generally have better social and adaptive outcomes than those with higher nonverbal skills; in addition, the more discrepant the verbal or nonverbal IQ, the more severe the social symptoms of autism (Black et al., 2009). It has been suggested that as language skills increase, symptoms decreased in individuals with autism and Asperger's disorder (Kozlowksi, Matson, & Sipes, 2012).

Although social problems are the foundation of any type of autism, it was thought that many children with high functioning autism did not show obvious symptoms related to autism until they were older and demands were raised (Attwood, 2007). One study found that as IQ and age increase, children with high functioning autism recognized their own social difficulties (Vickerstaff, Heriot, Wong, Lopes, & Dossetor, 2007). Unfortunately, children with higher functioning forms of autism may have been victimized by their peers (Shtayermman, 2007; Vickerstaff et al., 2007). A study involving 37 children with autistic spectrum disorders in grades 3 to 5 reported that according to the children's parents, 72% had been bullied or victimized by their peers (Chen & Schwartz, 2012).

Co-Morbidity. Children with Asperger's disorder/high functioning autism were found to have more symptoms related to mood and anxiety disorders than typically developing children (Kim, Szatmari, Bryson, Streiner, & Wilson, 2000; Lopata et al., 2010). It was suggested that individuals with high-functioning autism or Asperger's disorder were at greater risk for developing depression than children with lower functioning forms of autism (Vickerstaff, Heriot, Wong, Lopes, & Dossestor, 2007). According to a study of 50 children with autistic spectrum disorders, 74% had a co-morbid psychiatric disorder (Mattila, 2010). Another study focused on children with higher functioning forms of autism, and found that 72.5% of children in the study had a medical, neurological, or psychiatric co-morbid condition (Memari, Ziaee, Mirafazeli, & Kordi, 2012). Anxiety and depression were often co-morbid conditions for those who were diagnosed with autistic spectrum disorders (ASD) (Kanne, Abbacchi, & Constantino, 2009). Furthermore, anxiety was thought to worsen as children with high functioning autism became adolescents (Kuusikko, 2008).

Problematic classroom behaviors. Some children with autism had academic problems due to lack of motivation, or they displayed disruptive avoidance behavior when confronted with a task they found difficult or unenjoyable (Koegel et al., 2010). Additionally, because autistic children could become overly stimulated from the environment, autistic children in a general

education classroom may have "meltdowns" and could even become violent when overwhelmed by sensations and unfamiliar people (Loefgren, 2011).

Children with autism often dislike change, which could lead to behavior problems during transition periods, particularly in the general education classroom (Banda, Gimmit, & Hart, 2009). Additionally, repetitive self-stimulatory behaviors were often displayed by children with autism and could interfere with their own academic performance, and also disrupt the classroom (Conroy, 2005; Sigafoos, Green, Payne, O'Reilly, & Lancioni, 2009). Self-stimulatory behaviors described in the literature include "stereotyped movements, stereotyped manipulation of objects, repetitive use of language, and circumscribed interests" (limited and repetitive interests) (Patterson, Smith, & Jelen, 2010, p.320).

Education Reform: Impact on General Education Teachers

In 2004, a multi-tiered approach to providing interventions to struggling children was mandated by law as part of the reauthorization of the Individuals with Disabilities Education Act (IDEA), this approach was named Response to Intervention (RtI) (Hollenbeck, 2007; Wixson, 2011). Children are monitored to see who needs help; interventions are provided to those students; and all interventions are required to be based on scientific evidence (Hazelkorn, Buchloz, Goodman, Duffy, & Brady, 2010). The purpose of RtI is to keep students in the general education setting before making them eligible for special education; it also gives an alternative model to the discrepancy model (IQ vs. achievement) and is meant to keep minorities from being over-represented in special education (Hollenbeck 2007; Wixson, 2011).

It is thought that requiring teachers to use research-based intervention strategies before referring children to special education will reduce the possibility that a child did not receive adequate instruction and thus limit special education referral (Hollenbeck, 2007). Although originally intended for students with reading problems, RtI is also a model used for children with other academic problems such as language difficulties (Hazelkorn et al., 2010), and behavioral problems (Greshmen, 2007; Hazelkorn et al., 2010).

Currently, IDEA (2004) ensures that children with disabilities are placed in the least restrictive environment that will meet their educational needs, which is often general education classrooms (Loefgren, 2011). While these children are in the general education classroom, teachers are required to follow and implement an Individualized Education Plan (IEP) based on each student's disability and needs (Loefgren, 2011). With the focus on Response to Intervention and providing academic and behavioral interventions in general education settings, teachers must know how to use and assess interventions (Reeves et al., 2010).

Not all children with autism or Asperger's disorder were eligible for special education because their disability did not always impact their academic performance (Safran, 2008). Also, some children with autism or Asperger's were served under a different special education eligibility label (Safran, 2008). However, even if they were labeled with autism, they may have still been placed in a general education classroom; from 2002-2003, 25% of children in special education labeled under autism spent 79% of their day in the general education classroom (Loefgren, 2011)

Children with autism or Asperger's disorder who were not eligible for special education were served within the general education classroom. Due to IDEA (2004), the mandate of FAPE, and the educational definition of autism, there is a high likelihood that most general education teachers were teaching students with autism or Asperger's disorder, which made teachers' knowledge of classroom interventions for students with these disorders extremely important.

Classroom interventions: High functioning autism/Asperger's disorder

Social skills interventions. School-based social skills interventions provide opportunities for students with autism to interact with their peers in a natural environment (Bellini, Peters, Benner, & Hopt, 2007; Duncan & Klinger, 2010). However, researchers have found the effectiveness of many social skills interventions varies (Bellini et al., 2007; Duncan & Klinger, 2010; Lopata, Thomeer, Volker, Nida & Lee, 2008). One meta-analysis which focused on only school-based social interventions for children with autism, found that school-based social

interventions are largely ineffective (Bellini et al., 2007). The following social interventions are methods discussed in the literature:

Social stories. Social stories help teach children which behaviors are expected in certain social situations and provided instruction to children "regarding the who, what, when, where, and why of a social situation" (Sansosti & Powell-Smith, 2006, p.44). Social stories explained social situations using simple words (Kokina & Kern, 2010), and have been a common intervention for children with autism (Hanley-Hochdorfer, Bray, Kehle, & Elinoff, 2010; Sansosti, Powell-Smith, & Kincaid, 2004).

Although social stories appeared to provide some benefit for increasing desired social behaviors in children with autism, it has been suggested that the long-term benefits of social stories interventions are unknown (Karkhaneh, Clark, Ospina, Smith & Hartling, 2010). While some researchers found that social stories did appear to improve social skills, it was unknown whether the social stories were the cause of the improved social skills or if there was another variable involved (Karkhaneh et al., 2010; Sansosti, Powell-Smith, & Kincaid, 2004). Additionally, one meta-analysis suggested that the use of social stories to improve the social skills of children with autism appeared to have low to questionable effectiveness (Kokina & Kern, 2010). However, research suggested that social stories appeared to be effective in reducing problem behaviors (Hanley-Hochdorfer et al., 2010; Kokina & Kern, 2010) and were most effective when implemented in the students' natural environment, when used with elementary school children with autism, and with low-functioning children (Kokina & Kern, 2010).

Social interventions involving peers. Interventions involving typically developing peers with children with autism frequently were related to social learning theory, whereby a typical student demonstrated and/or taught appropriate social skills to a child with autism (Disalvo & Oswald, 2002). Peer involvement in social interventions for children with autism showed that interventions using nondisabled peers to help children with autism were successful in increasing

targeted social skills (Harper, Symon, & Frea, 2007; Kalyva & Elias Avramidis, 2005; Pierce & Schreibman, 1997).

Elementary age students increased their social interaction skills when they received peer pivotal response training (Harper et al., 2007; Pierce & Schreibman, 1997). Pivotal response training occurs when one behavior is altered and the change affects other behaviors (Terpstra, Higgins, & Pierce, 2002). Additionally, research suggested that educating children about their classmates with autism, and teaching children how to interact with their autistic classmates could increase the amount of times peers initiated social contact with their autistic classmates (Owen-DeSchryver, Carr, Cale, & Blakely-Smith, 2008).

Problematic behaviors.

Many children with autism are being taught in the general education classroom; however, problematic behaviors were often displayed by these students (Loefgren, 2011; Strain, Wilson, & Dunlap, 2011). The following are some problematic classroom behaviors described in the literature along with some suggested interventions for these behaviors:

Transition problems. Research noted that children with autism had great difficulty with transitioning from one task or activity to another; it has been confirmed that picture activity schedules improved transitioning for children with autism (Banda et al., 2009; Bryan & Gast, 2000; Sterling-Turner & Jordan, 2007). Picture activity schedules are pictures or symbols that represent a sequence of activities that a child must complete (Banda et al; 2009; Bryan & Gast, 2000). Additionally, picture activity schedules have been shown to not only help children with autism follow a schedule, but also help keep these students on task (Bryan & Gast, 2000). Other successful strategies have used video modeling to decrease behavioral problems in children with autism (Schreibman, Whalen, & Stahmer, 2000; Sterling-Turner & Jordan, 2007). Research also suggested that verbal/auditory warnings (known as precorrection) may help decrease transition problem behaviors in children with autism (Sterling-Turner & Jordan, 2007).

Compliance and on-task behavior. Children with autism have problems with on task behaviors (Bryan & Gast, 2000). Picture schedules have also been shown to keep children with autism on task (Bryan & Gast, 2000), and social stories have been shown to reduce problem behaviors (Hanley-Hochdorfer et al., 2010; Kokina & Kern, 2010). One study combined both ideas by using what is called a "Power Card" to increase the direction following behaviors of students with autism (Campbell & Tincani, 2011). Power Cards were related to a child's special interest; the cards described how to respond in a situation, and asked the student to follow directions in a way that has been personalized to his or her special interest (i.e. a train, sports, etc.) (Campbell & Tincani, 2011). Also, appropriate classroom behavior was shown to increase when a teacher implemented a token economy and had children with autism self-monitor their behavior (Shogren, Lang, Machalicek, Rispoli, & O'Reilly, 2011).

Not only is compliance important for appropriate classroom behaviors, but when a student is compliant and stays on task, these behaviors also increase academic success (Banda & Kubina, 2010). To increase on-task and compliant behaviors of students with autism, one study found that pairing a preferred academic activity with a non-preferred activity increased compliance for the non-preferred activity (Banda & Kubina, 2010). For example, the student in this study was provided with his preferred math problem, which was 3-digit addition, at the same time as he was presented with non-preferred math problems (Banda & Kubina, 2010).

Stereotypic behavior. Children with autism often showed stereotypic behaviors that could upset the general routines in the classroom and may serve to isolate the student with autism (Brusa & Richman, 2008; Conroy, Asmus, Sellers, & Ladwig, 2005). Using visual cues to decrease stereotypic behaviors (repetitive behaviors) was found to be successful for children with autism (Brusa & Richman, 2008; Conroy, Asmus, Sellers, & Ladwig, 2005). However, a decrease in stereotypic behaviors did not improve academic involvement (Conroy, Asmus, Sellers, & Ladwig, 2005). Using verbal cues to direct a child to a competing option or stimulus was found to reduce stereotypic behavior in a low functioning child with autism (Hagopian & Toole, 2009).

Classroom Interventions for Academic Difficulties

Children with autism typically do not present identical academic difficulties; these differences make it important for teachers to not only be aware of some common difficulties students with autism may have, but also to be able to identify the areas of struggle for each child with autism and develop a plan to help each child on an individual basis (Whitby et al., 2009). The following academic strategies related to math, reading, and writing were found in the literature:

Mathematics interventions. Research documented the difficulties many children with autism and high functioning autism had with mathematical problem solving (Rockwell, Griffin, & Jones, 2011; Whitby et al., 2009). However, there was a lack of research on mathematical problem solving interventions for children with autism (Rockwell et al., 2011), although it has been suggested that mathematics strategies used with children who have a non-verbal learning disability could also be used with children who have autism (Donaldson & Zager, 2010). The strategies of self-regulation, direct instruction, and concrete-representational-abstract have been identified as successful strategies for children with non-verbal learning disabilities (Donaldson & Zager, 2010).

Additionally, a study that used a schema-based strategy instruction to improve a 10-year old child with autism's ability to solve basic mathematical word problems was shown to be successful (Rockwell et al., 2011). "Schema-based strategy instruction (SBI) is an intervention that uses visual representations, heuristics, and direct instruction to teach students to solve word problems" (Rockwell et al., 2011, p.88). The strategies by Rockwell et al. appear similar to those for children with non-verbal learning disabilities suggested by Donaldson & Zager (2010).

Reading. Although the reading skills of each child with autism differed, it was thought that basic reading skills may be related to IQ (Whitby et al., 2009). To improve the basic reading skills of children with autism, the use of discrete trial trainings involving three steps: "an instruction, a student response, and a consequence" were repeated until the student learns the

information and is usually beneficial for the teaching of simple facts (Gongola & Sweeney, 2011, p.184). Basic reading skills were not difficult for all children with autism; some children with autism could read words but had difficulty understanding what they have read (Jones et al., 2009; Nation et al., 2006).

Interventions for reading comprehension are important for children with autism because they often have difficulty with language and may be unable to make inferences while reading (Gately, 2008). An intervention involving peer tutoring was found to improve the reading comprehension of children with autism (Chiang & Ling, 2007). Also, anaphoric cueing (asking clarifying questions) appeared to improve the reading comprehension of students with autism (O'Connor & Klein, 2004). Additionally, the recall of story facts improved when students with high functioning autism used the technique of story mapping (Stringfield, Luscre, & Gast, 2011). Story maps provide an outline for students to remember and write down important information about the story (Stringfield, Luscre, & Gast, 2011). Strategies that are known to improve reading comprehension such as priming background knowledge, picture walks, think alouds, and visual maps may increase the reading comprehension of children with autism (Gately, 2008). However, there was a limited amount of research on the effectiveness of reading comprehension strategies for children with autism and Asperger's disorder (Chiang & Ling, 2007).

Writing. Writing was found to be difficult for many students with autism; yet, there were few studies which investigated writing interventions for students with autism, and those studies that were published focus primarily on spelling (Pennington, 2009). However, two published studies indicated that the use of self-regulatory strategy development helped children with autism and Asperger's disorder improve their writing composition skills (Asaro-Saddler & Saddler, 2010; Delano, 2007). Self-regulatory strategy development is based on three components: planning, monitoring, and motivation (Asaro-Saddler & Saddler, 2010).

Teacher Perceptions of Students with Autism

An older study found that general education teachers and special education teachers were aware of the continuum of autism and knew that the disorder often affects more boys than girls (Mavropoulou & Padeliadu, 2000). Further, 60% of general education teachers and 90% of special education teachers believed they could treat children with autism effectively (Mavropoulou & Padeliadu, 2000); however, only 37% of special education teachers and 55% of general education believed in integrating these students into the general education environment (Mavropoulou & Padeliadu, 2000).

As the number of students diagnosed with autism rise, the perception of the disorder by teachers, particularly general education teachers who may be teaching these students in the least restrictive environment, becomes increasingly important. Interestingly, special education and regular education teachers' perceptions of students with autism did not differ (Park & Chitiyo, 2011). Overall, all teachers were found to have a positive attitude toward children with autism, although younger teachers, females, and elementary school teachers had the most positive attitudes (Park & Chitiyo, 2011). Even teachers who had students with autism that required augmentative communication devices included in their general education classrooms, reported mostly positive views of their inclusion (Finke, McNaughton, & Drager, 2009).

Many teachers had a positive perception of students with autism/Asperger's disorder (Finke, McNaughton, & Drager, 2009; Park & Chitiyo, 2011). However, teacher knowledge regarding Asperger's disorder appeared to be lacking; three similar studies that used the Teacher Knowledge of Asperger's Scale (KASP) found that teachers lacked knowledge of Asperger's disorder (Arechiga, 2009; Murphy, 2005; Nicol, 2008). All three studies found that teachers who reported more contact/experience with students who have Asperger's disorder tended to score higher on the KASP (Arechiga, 2009; Murphy, 2005; Nicol, 2008). Additionally, the higher the score on the KASP, the more confidence teachers had in their ability to teach children with Asperger's disorder (Murphy, 2005).

Teacher Confidence Teaching Students with Disabilities.

Murphy's (2005) research finding that knowledge of Asperger's disorder increased teacher's confidence in teaching these students supported the general research findings in teacher confidence, (i.e. that knowledge of a disability or behavior increases teacher confidence). Similarly, the study of Zentall and Javorsky (2007) examined the effects of an in-service course for teachers designed to increase knowledge related to teaching students with Attention-Deficit Hyperactivity Disorder (ADHD); it showed that teachers' confidence in their ability to teach students with ADHD improved after the in-service training. Likewise, mental health training provided to high school teachers in Australia increased their confidence in helping students and coworkers with mental health problems (Jorm, Kitchener, Sawyer, Scales, & Cvetkovski, 2010). Additionally, teachers with more pre-service and in-service training on challenging behaviors had more confidence using strategies to address these behaviors (Westling, 2010).

Purpose of the Study

The present study investigated general education teachers' knowledge and confidence when teaching students with autism and Asperger's disorder in the general education classroom. Additionally, this study examined the differences between teacher level (elementary, middle, and high school) and confidence level. It was hypothesized that:

1) There will be no significant differences among elementary, middle, and high school teachers in their level of confidence in teaching children with autism/Asperger's disorder.

2) There will be no significant differences among elementary, middle, and high school teachers in their knowledge of strategies that have proved effective with children with autism/Asperger's disorder.

3. There will be no significant relationship between the number of reported in-service training courses and teachers' level of confidence in using strategies.

4. There will be no significant relationship between the number of students taught with autism/Asperger's disorder and teachers' levels of confidence in using strategies.

Method

Participants

The participants were general education teachers from across the United States that were employed as pre-kindergarten through twelfth grade teachers at the time of their participation in this survey. There were 170 usable surveys completed by teachers *(N = 170)*. There were 67 on the elementary level, 36 more on middle school level, and 56 on the high school level, while 11 did not specify level. Participants who gave more than one answer for a demographic question were excluded from this study with the exception of item 13. Item 13 was not reported due to the high rate of multiple responses. Participant demographic variables are reported in Table 1.

Table 1
Participant Demographics

Total Number of Participants: 170		
Characteristic	N	%
Gender		
Male	54	31.8
Female	109	64.1
No Response	7	04.1
Age		
20-26	10	05.8
27-40	46	27.0
40-55	70	41.2
55 or Older	39	23.0
No Response	5	03.0
Special Education Courses		
0	34	20.0
1-2	72	42.4
3-5	38	22.4
More than 5	21	12.4
No Response	5	02.8
School Level		
Elementary School	67	39.4
Middle School	36	21.2
High School	56	33.0
No Response	11	06.4

(*Table 1 continues)*

(Table 1 continued)

Total Number of Participants: 170		
Characteristics	N	%
Work Area		
Urban	40	23.5
Suburban	85	50.0
Rural	38	22.4
No Response	7	04.1
Type of School		
Public	142	83.5
Private	14	08.2
Charter	8	04.7
No Response	6	03.6
Children on Free/Reduced Lunch		
0-10%	18	10.6
10-25%	27	15.9
25-50%	38	22.4
More than 50%	74	43.5
No Response	13	07.6
Graduated from Teacher Preparation Program		
Yes	141	82.9
No	29	17.1
No Response	0	0.00
Years of Experience		
1-5 years	32	18.8
6-10 years	27	15.9
11-15 years	29	17.1
16-20 years	27	15.9
20+ years	49	28.8
No Response	6	03.5
Level of Education		
Bachelors	50	29.5
Masters	93	54.7
Specialist	14	08.2
Doctorate	8	04.7
No Response	5	02.9
Number of In-course Service on autism/Asperger's disorder		
0 times	88	51.8
1-2 times	51	30.0
3-5 times	18	10.6
5 or more	7	04.1
No Response	6	03.5

(Table 1 continues)

(Table 1 continued)

Total Number of Participants: 170		
Characteristics	N	%
Number of Students Taught with autism/Asperger's disorder		
0	21	12.3
1-2	44	25.9
3-5	46	27.1
5 or more	52	30.6
No Response	7	04.1

Total Number of Participants: 170
*Not all participants answered each question

Instrumentation

The instrument used to collect the data was a survey that was created based on the review of literature. A pilot survey was given to five people (two school psychologists, two teachers, and a speech language pathologist) for the purpose of readability; changes based on their feedback were made. Changes included adding a screening question to the survey, and changing the order of questions on the survey. Please see Appendix A for items on the survey.

The survey consists of 25 questions. The first question was a screening question related to current/recent employment as a general education teacher. Then there were 13 questions related to demographics. Following the demographic section, there were 11 questions assessing teacher confidence and knowledge of strategies used when teaching children with autism/Asperger's disorder. These 11 questions were on a 5 point Likert scale, with 1 indicating Strongly Disagree and 5 indicating Strongly Agree.

Procedures

Upon approval from Barry University Institutional Review Board (IRB), the researcher posted the Survey Monkey links on the Internet via the social networking site "Facebook" (i.e., National Council of Teachers of English). The link was also sent directly to individuals known to be teachers and friends were asked to send the survey link to those known to be a general

education teacher. Additionally, during the course of data collection, the researcher gained approval from IRB to use the Survey Monkey's data collection program (Targeted Audience), which finds participants for a study based on the researcher's specifications such as, the individuals must live within the United States and currently be employed as teachers. To insure confidentiality, Survey Monkey suppressed IP addresses of participants.

Once the participants read the cover letter (Appendix B) and agreed to take part in the survey, a screening question was administered. If a participant indicated that they were employed/or have been employed in the last 12 months as a general education teacher, they were directed to the survey portion of the study. The researcher emailed friends, posted the survey link of Facebook, and used Survey Monkey's targeted audience feature until 170 surveys from teachers were collected.

Data Analysis

The responses from the survey were collected from Survey Monkey in an SPSS file. The first 13 items on the survey were demographic items and there were 11 questions assessing teacher confidence and knowledge of strategies used when teaching children with autism/Asperger's disorder. SPSS version 19 was used for data analysis. The researcher used 9 questions from the survey portion of the instrument to create two scales: Teacher Confidence and Teacher Knowledge. The Teacher Confidence Scale consisted of items 1, 2, 7, and 11 from the survey. The Teacher Knowledge Scale consisted of items 3, 4, 6, 8, and 9 from the survey. For each Scale, the total number of points was computed with a range of scores for the Teacher Confidence Scale from 4 to 20 and for Teacher Knowledge from 5 to 25. An ANOVA was utilized to look at the differences among Elementary, Middle School, and High School Teachers scores on the Teacher Confidence and Teacher Knowledge Scales. Additionally, Pearson correlation between question 11 on the demographic portion of the instrument (regarding number of in-services attended) and the Confidence Scale, as well as question 12 on the demographic portion

of the instrument (number of students taught with autism/Asperger's Disorder) and the Confidence Scale were computed.

Results

Data was analyzed with SPSS version 19 using one-way ANOVAs and Pearson correlations. The results are reported for each hypothesis.

Hypothesis 1

Hypothesis 1 stated that there would be no significant differences among elementary, middle, and high school teachers in their levels of confidence in teaching children with autism/Asperger's disorder. A one-way ANOVA was computed comparing elementary, middle, and high school teachers' responses to items, from the Teacher Confidence Scale (items 1, 2, 7, 11 see Appendix A for the actual survey questions). Hypothesis 1 was supported as there was no significant differences among elementary, middle, and high school regarding teacher confidence teaching student's with autism/ Asperger's disorder (F) (2, 152) = .358, $p > .05$. Please see Table 2 for the mean and standard deviation for elementary, middle and high school teachers on the Confidence Scale.

Table 2

Means and Standard Deviations of Scales

Scale	*M*	*SD*
Teacher Confidence		
Elementary School Teachers	13.15	3.50
Middle School Teachers	13.71	3.27
High School Teachers	13.15	3.47

N= 152

Hypothesis 2

Hypothesis 2 stated that that there would be no significant differences among elementary,

middle, and high school teachers in their knowledge of strategies that are effective with children with autism/Asperger's disorder. A one-way ANOVA was computed comparing elementary, middle, and high school teachers' responses on the Teacher Knowledge Scale (items 3, 4, 6, 8, 9; see Appendix A for the survey items) (F) (2, 150) = 3.299, $p < .05$, with medium effect size of .04. Hypothesis 2 was not supported as there was a significant difference among the groups. A Tukey HSD was used to determine the difference among groups and a significance difference was found between the mean scores of high school (M = 13.50) and elementary school (M = 15.78) teachers regarding strategy knowledge. There was no significant difference between middle school teacher's reported knowledge compared to elementary school or high school teachers. Please see Table 3 for the mean and standard deviation for elementary, middle and high school teachers on the Teacher Knowledge Scale.

Table 3

Means and Standard Deviations of Scales

Scale	*M*	*SD*
Teacher Knowledge		
Elementary School Teachers	15.78	4.53
Middle School Teachers	14.44	4.56
High School Teachers	13.50	5.32

N= 150

To further clarify these results, individual items on the Teacher Knowledge Scale were examined. For example, on Item 6, " I am familiar with the use of picture schedules," 62.7% of elementary school teachers responded Strongly Agree or Agree compared to only 28.6% of high school teachers. On the Item 4, " I am familiar with the use of social stories", 39.4% of elementary teachers responded with Strongly Agree or Agree, whereas 22.3% of high school

teachers responded with Strongly Agree or Agree. The other items that composed the scale did not show any large differences between the two groups.

Hypothesis 3

Hypothesis 3 stated that there would be no significant relationship between the number of reported in-service training courses and the Teacher Confidence Scale (items 1, 2, 7, and 11) in using strategies. A Pearson *r* correlation coefficient was calculated to examine the relationship between the number of in-services attended by teachers and their confidence in teaching students with autism/Asperger's. This hypothesis was not supported as the results showed a positive weak to moderate correlation between number of in-services attended and teacher confidence (r) (4) = .331, $p < .01$).

Hypothesis 4

Hypothesis 4 stated that there would be no significant relationship between the number of students taught with autism/Asperger's disorder and teachers' level of confidence and the Teacher Confidence Scale (items 1, 2, 7, 11). A Pearson *r* correlation was calculated to examine the relationship between the number of students taught with autism/Asperger's Disorder and confidence in teaching students with autism/Asperger's. This hypothesis was not supported as the results found a positive moderate correlation between number of students taught with autism/Asperger's disorder and teacher confidence (r) (4) = .489, $p < .01$).

Discussion

The present results supported *Hypothesis 1,* which stated that there would be no difference between elementary, middle, and high school teacher's level of confidence teaching children with autism/Asperger's disorder in the general education classroom. Earlier research found that all levels of teachers had positive perceptions of students with autism; however, elementary teachers were found to have the most positive perception of these students (Park & Chitiyo, 2011). Yet, this trend was not transferred to teacher confidence in this study. It is

possible that it is not teacher perception but knowledge that increases teacher confidence. Previous studies have found that in-service training and knowledge of the disability are related to confidence in teaching children with disabilities or behavioral problems (Murphy, 2005; Jorm et al., 2010, Westling, 2010; Zentall & Javorsky, 2007). It may be that the grade level of the teacher is not related to the amount of in-service training or knowledge the teacher has regarding autism/Asperger's disorder.

Additionally, the current study supports the idea that the more knowledge and in-service training teachers have on the topic of autism/Asperger's disorder, the more confidence they have in teaching, as *Hypothesis 3* and *Hypothesis 4* showed a positive correlation. *Hypothesis 3* which stated that there would be no significant relationship between the number of reported in-service training courses and the Teacher Confidence Scale was rejected showing a weak to moderate correlation.

This finding was similar to a study that found teachers who attended an in-service on ADHD to gain more knowledge about the disorder had more confidence teaching students with the disorder (Zentall & Javorsky, 2007). Similarly, a study providing teachers were in-service for student and adult mental health found that in-service increases teachers' confidence helping those with mental health problems. (Jorm, Kitchener, Sawyer, Scales, & Cvetkovski, 2010). Confidence using strategies for problematic behavior was also positively related to in-service attendance (Westling, 2010). It appears that the more teachers are educated on topics that impact their classrooms, the more confident they become in their abilities.

Furthermore, *Hypothesis 4* stating that there would be no significant relationship between the number of students taught with autism/Asperger's disorder and teachers' level of confidence as measured by the Teacher Confidence Scale was also not supported, showing a positive moderate correlation. Previous research found that the more students a teacher has taught with Asperger's disorder, the more knowledge the teacher has regarding the disorder (Arechiga, 2009;

Murphy, 2005; Nicol, 2008). Knowledge of Asperger's disorder was also found to be related to teachers' confidence in teaching these students (Murphy, 2005).

Hypothesis 2 was not supported by the results of this study. *Hypothesis 2* stated that that there would be no significant differences among elementary, middle, and high school teachers in their knowledge of strategies that are effective with children with autism/Asperger's disorder. This hypothesis found a significant difference between elementary and high school teachers' knowledge of strategies for children with autism/Asperger's disorder. There were no differences among groups regarding middle school teachers. The greatest differences between high school and elementary teachers' knowledge of strategies were found on Item 6, which was related to picture schedules, and Item 4, which was related to social stories. Elementary school teachers showed greater knowledge of these two strategies.

It is possible that the strategy knowledge differences between elementary and high school teachers can be explained by the lack of research supporting use of picture schedules and social stories for high school students in the general education classrooms. Reviews of the research on social stories for children with autism/Asperger's disorder showed only one study that included a participant who was older than 14 (Karkhaneh et al., 2010; Kokina & Kern, 2010; Sansosti et al., 2004). Adding to the lack of support in the literature for the use of social stories in the general education high school setting is a study that found social stories to be most effective for low-functioning children with autism and elementary school students (Kokina & Kern, 2010).

Similarly, elementary teachers may be more familiar than high school teachers with the use of picture schedules because elementary teachers may be more likely to use them. The research related to picture schedules focuses primarily on elementary school students (Bryan & Gast, 2000; Sterling-Turner & Jordan, 2007) and for use with children with communication difficulties (Sterling-Turner & Jordan, 2007). It has been suggested that the use visual prompts decreases the dependence on adults prompts and promote automatic responses (Hume, Loftin, &

Lance, 2009), so it is possible that children with autism/Asperger's disorder who benefited from picture schedules do not need this support by the time they reach high school.

Although this study had 170 teacher participants from across the country, there were limitations related to the study's participants. The majority of the participants in the study were recruited using Survey Monkey's data collection program (Targeted Audience). Targeted Audience participants received donations toward a charity of their choice or the possibility of winning a contest for completing a survey. Also, because survey monkey is used for research, it is possible that teachers who are part of the Targeted Audience are more likely to read and participate in research, read journal articles, and attend educational conferences, and that this caused them to be more knowledgeable about strategies used for autism/Asperger's disorder and to have more confidence in their teaching abilities.

Additionally, due to the limited amount of research on strategies and interventions for high school students with autism/Asperger's disorder, this study may have failed to identify strategies that are used by high school teachers. It may have been beneficial to survey teachers on the strategies they use as well as their confidence using these strategies. With the publication of the DSM-V, autistic disorder and Asperger's disorder have been placed under one category, autism spectrum disorder, which also includes pervasive developmental disorder not otherwise specified (American Psychiatric Association, 2013). However, in order to be diagnosed with autism spectrum disorder individuals must have at least 2 manifestations related to restricted or repetitive behaviors and the in the DSM-IV-TR, individuals with Asperger's disorder were only required to have one (American Psychiatric Association, 2013; American Psychiatric Association, 2000). Despite some children being excluded from an autism spectrum diagnosis that may have previously been thought of as "on the spectrum" it is likely that this will not impact eligibility for special education, as the students showing only a pragmatic language disorder might receive services under language impairment. Additionally, students with either disorder still may not show an impairment in their educational functioning, as this is not a requirement of diagnosis.

Regardless, future research should focus on interventions for students with autistic spectrum disorder at the high school level and on what strategies teachers find effective for students at each grade level with autistic spectrum disorder.

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Appendix A

Demographic Information

Screening Question: I am currently employed/or have been employed in the last 12 months as a general education teacher.

a) Yes b) No

1) I am a

a) Male b) Female

2) I am

a) 20- 26 b) 27-40 c) 40-55 d) 55 or older

3) I have taken _____ number of special education courses.

a) 0 b) 1-2 c) 3-5 d) more than 5

4) I work in a _____ school.

a) Elementary School b) Middle School c) High School

5) I work in a _____ school.

a) Urban b) Suburban c) Rural

6) I work in a _____ school.

a) Public b) Private c) Charter

7) The percentage of children at my school on free and/or reduced lunch is

a) 0-10% b) 10% to 25% c) 25% to 50% d) More than 50%

8) I graduated from a teacher preparation program

a) Yes b) No

9) I have worked as a teacher for

a) 1-5 years b) 6-10 years c) 11-15 years d) 16-20 years e) 20+ years

10) My highest level of education is

a) Bachelors b) Masters c) Specialist d) Doctorate

11) I have attended an in-service course on autism and/or Asperger's disorder

a) 0 times b) 1-2 times c) 3-5 times d) 5 or more times

12) I have taught _____ number of students with autism/or Asperger's disorder

a) 0 b) 1-2 c) 3-5 d) 5 or more

13) I most often seek help from the following person when I need support teaching a child with autism or Asperger's disorder.

a) Another teacher b) Guidance Counselor c) School Psychologist d) Principal

e) Speech Language Pathologist f) Social Worker

Survey

1=Strongly Disagree 2=Disagree 3=Neither Agree or Disagree 4=Agree 5=Strongly Agree

These questions relate only to children with autism/Asperger's disorder that have the cognitive ability to be placed in a general education curriculum.

Please choose only one answer.

1) I feel confident teaching students with autism/Asperger's disorder within the general education classroom.

SD	D	N	A	SA
1	2	3	4	5

2) I am comfortable with having students with autism/Asperger's disorder placed in my general education classroom.

SD	D	N	A	SA
1	2	3	4	5

3) I feel confident in using a variety of strategies to address the behavioral problems of students with autism/Asperger's disorder who are placed in general education.

SD	D	N	A	SA
1	2	3	4	5

4) I am familiar with the concept of social stories.

SD	D	N	A	SA
1	2	3	4	5

5) I feel that learning classroom strategies targeted towards children with autism/Asperger's disorder would be useful to me as a professional.

SD	D	N	A	SA
1	2	3	4	5

6) I am familiar with the use of picture schedules.

SD	D	N	A	SA
1	2	3	4	5

7) I feel comfortable teaching all my students to be accepting of diversity in others

SD	D	N	A	SA
1	2	3	4	5

8) I know strategies to decrease repetitive behaviors in children with autism/Asperger's disorder.

SD	D	N	A	SA
1	2	3	4	5

9) I feel comfortable providing children with autism/ Asperger's disorder academic accommodations within my classroom.

SD	D	N	A	SA
1	2	3	4	5

10) My school district has provided me with the necessary strategies to teach students with autism/Asperger's disorder within the general education classroom.

SD	D	N	A	SA
1	2	3	4	5

11) I am confident that I know a sufficient number of evidence-based interventions for children with autism/Asperger's disorder.

SD	D	N	A	SA
1	2	3	4	5

Appendix B

Dear Research Participant:

Your participation in a research project is requested. The title of the study is **"**General Education Teachers' Confidence in Teaching Children with Asperger's disorder/autism**".** The research is being conducted by Amanda Hertz, a student in the Counseling Department at Barry University, and it is seeking information that will be useful in the field of School Psychology. The aim of the research is to examine general education teachers' confidence in strategies used when teaching children with autism/Asperger's disorder. In accordance with these aims, the following procedure will be used: A questionnaire called, "Teacher Survey" follows this letter. I anticipate the number of participants to be 250.

If you decide to participate in this research, you will be asked to do the following: Answer the questions related to demographic information and a survey related to your confidence in teaching students with autism and Asperger's disorder. The survey is estimated to take no more than 10 minutes to complete based on the findings from the pilot study.

Your consent to be a research participant is strictly voluntary and should you decline to participate or should you choose to drop out at any time during the study, there will be no adverse effects to you.

There are no foreseen risks associated with your involvement in this study. The following procedures will be used to minimize these risks: You can skip any questions you do not want to answer, or you can chose to stop answering the survey questions. There are no direct benefits to you for participating in this study; however, your participation will contribute to research in the area of autism and school psychology.

As a research participant, information you provide is anonymous, that is, no names or other identifiers will be collected. SurveyMonkey.com allows researchers to suppress the delivery of IP addresses during the downloading of data, and in this study no IP address will be delivered to the researcher. However, SurveyMonkey.com does collect IP addresses for its own purposes. If you have concerns about this, you should review the privacy policy of SurveyMonkey.com before you begin. By completing and submitting this electronic survey you are acknowledging that you are at least 18-years-old, are employed for the last 12 months as a general education classroom teacher, and voluntarily agree to participate in the study.

If you have any questions or concerns regarding the study or your participation in the study, you may contact me, Amanda Hertz, by email at amanda.hertz@mymail.barry.edu. You may also contact the Institutional Review Board point of contact, Barbara Cook, by phone at (305) 899-3020 or by email at **bcook@mail.barry.edu**. Additionally, you can contact my research advisor, Agnes Shine, by phone at (305) 899-3991 or by email at **ashine@mail.barry.edu**.

Thank you for your participation.

Sincerely,

Amanda Hertz

Print this page if you need proof of participation.