INCLUSION OF STUDENTS WITH AUTISM SPECTRUM DISORDER: EDUCATOR EXPERIENCE, KNOWLEDGE, AND ATTITUDES

by

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(Under the Direction of Jonathan M. Campbell)

ABSTRACT

The education of students with autism spectrum disorders (ASD) is a challenging issue for public schools. Due to legal and educational reasons, many children with ASD are included in the general education setting for all or portions of the school day. Thus, it is essential to understand the current practices used to support inclusive education and factors related to the implementation of classroom strategies and interventions. A new measure, the *Autism Inclusion Questionnaire*, is proposed to assess the constructs of experience, knowledge, attitudes towards inclusion, and classroom practices as they relate to ASD. Results indicate that education professionals ($N = 47$) report generally positive attitudes; however, educators demonstrate important misconceptions and lack of knowledge regarding ASD. Further, a significant relationship was found between knowledge of ASD and awareness of potential classroom strategies for inclusion, whereas attitudes and awareness of strategies were unrelated. Practical implications and future research directions are discussed.

INDEX WORDS: Autism, Inclusion, Teacher attitudes

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CHAPTER 1

INTRODUCTION

Autism is a pervasive developmental disorder, characterized by communication deficits, social interaction impairments, and restricted or repetitive behaviors and interests, according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition – Text Revision ([DSM-IV-TR]; American Psychiatric Association, 2000). The term autism spectrum disorder (ASD) is an umbrella term, and subsumes two disintegrative disorders (Rett's disorder and childhood disintegrative disorder) and two less severe pervasive developmental disorders (Asperger's disorder and pervasive developmental disorder – not otherwise specified), in addition to autistic disorder. Symptom expression across the autism spectrum is highly heterogeneous and can range from severe impairment to mild delay (Mesibov & Shea, 1996). ASDs, evident in the early years of life, present challenging behaviors and feature an array of associated symptoms and medical conditions (Ozonoff & Rogers, 2003).

The education of students with ASD is particularly challenging (Robertson, Chamberlain, & Kasari, 2003; Yell, Katsiyannis, Drasgow, & Herbst, 2003), due to core features and a host of associated symptoms, such as inattention, sensory dysfunction, and depression (Eaves & Ho, 1997; Jordan, 2005). According to the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA, 2004), children meeting specific criteria under the category of autism are eligible to receive special education services. These criteria are similar to yet distinct from DSM-IV-TR criteria (see Table 1 for a comparison), and no formal psychiatric diagnosis is required for

Table 1

Criteria for Psychiatric Diagnosis and Special Education Eligibility for Autism

Autistic Disorder (APA, 2000, p.75)	Autism (IDEIA, 2004)
1. Qualitative impairment in social interaction, as manifested by at least two of the following: a. marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures related to social interaction b. failure to develop peer relationships appropriate to developmental level c. a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people d. lack of social or emotional reciprocity 2. Qualitative impairments in communication as manifested by at least one of the following: a. delay in, or total lack of, the development of spoken language	1. Developmental rates and sequences: A student exhibits delays, arrests, and/or inconsistencies in the acquisition of motor, sensory, social or cognitive skills. Areas of precocious or advanced skill development may also be present, while other skills may develop at typical or extremely depressed rates. The order or skill acquisition frequently differs from typical developmental patterns. 2. Social interaction and participation: A student displays difficulties and/or idiosyncratic differences in interacting with people and participating in events. Often a student is unable to establish and maintain reciprocal relationships with people. A student may seek consistency in environmental events to the point of exhibiting rigidity in routines.

Table 1 (continued)

Criteria for Psychiatric Diagnosis and Special Education Eligibility for Autism

Autistic Disorder (APA, 2000, p.75)	Autism (IDEIA, 2004)
b. in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others c. stereotyped and repetitive use of language or idiosyncratic language d. lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level 3. Restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following: a. encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus b. apparently inflexible adherence to specific, nonfunctional routines or rituals	3. Communication: A student displays a basic deficit in the capacity to use verbal language for social communication, both receptively and expressively. Characteristics may involve both deviance and delay. Verbal language may be absent, or, if present, may lack usual communicative form, or the student may have a nonverbal communication impairment. 4. Sensory processing: A student may exhibit unusual, repetitive, or unconventional responses to sensory stimuli of any kind. A student's responses may vary from low to high levels of activity. 5. Repertoire of activities and interests: A student may engage in repetitive activities and/or may display marked distress over changes, insistences on following routines and a persistent preoccupation with or

Table 1 (continued)

Criteria for Psychiatric Diagnosis and Special Education Eligibility for Autism

Autistic Disorder (APA, 2000, p.75)	Autism (IDEIA, 2004)
c. stereotyped and repetitive motor mannerisms d. persistent preoccupation with parts of objects.	attachment to objects. The capacity to use objects in an appropriate or functional manner may be absent, arrested, or delayed. A student may have difficulties displaying a range of interests and/or imaginative play. A student may exhibit stereotypical body movements.

Note. APA = American Psychiatric Association; IDEIA = Individuals with Disabilities Education Improvement Act

special education services. Thus, use of the umbrella term, ASD, may be most appropriate when discussing special education and autism, as it refers to a larger group of students demonstrating various social, communication, and repetitive behavior deficits.

Federal law states that "all students with disabilities have available to them a free appropriate public education that emphasizes special education and related services designed to meet their unique needs and prepare them for employment and independent living" (IDEIA, 2004). Thus, special education is individually designed educational programming, which may incorporate related services, such as speech-language pathology, occupational therapy, and transportation.

If a student, through formal assessment, meets special education criteria, parents, teachers, and other professionals develop what is known as an Individualized Education Program (IEP). The IEP takes the form of a written document, updated annually, describing the services needed to meet the needs of the student, including accommodations, modifications and supports. Federal regulations explain that "the identification of autism for educational programming does not indicate a specific placement; however, it is based on the strengths, weaknesses and individual goals and objectives of the student" (IDEIA, 2004).

Special education law further mandates that all children be educated in the least restrictive environment possible (LRE; IDEIA, 2004), implying that children with disabilities should be educated with typical peers to the extent that risk for harm is not increased and access to learning is not decreased for any student. Full inclusion refers to LRE placements in which the special education student receives instruction in the general education classroom alongside typical peers for the entire instructional day. Mesibov and Shea (1996) list several important assumed benefits of full inclusion: (a) higher academic expectations, (b) access to peer models of

social behavior, (c) improved self-concept and reduced stigma, and (d) development of positive attitudes by typical peers. While these assumptions are not substantially supported by empirical research (Harrower & Dunlap, 2001; Mesibov & Shea), many experts also share the notion that children with ASD should be included in the general education curriculum to the greatest possible extent (Koegel & LaZebnik, 2004; Mastergeorge, Rogers, Corbett, & Solomon, 2003). However, due to the vast array of services available and the heterogeneity of symptom presentation, LRE environments for students with ASD may best be conceptualized as a continuum of educational settings and services (Mesibov & Shea). In this way, some students, who need a great deal of support and with certain relevant features (e.g., low cognitive ability), may be educated in more restrictive settings, such as self-contained classrooms, and other students, who may demonstrate higher intelligence or received intervention at a very young age (Harris & Handleman, 2000), may be educated in general education settings. While this model does not fit with the notion of "full inclusion" for all students, it may be important for students to receive instruction and acquire skills in segregated settings in order to practice (Mesibov & Shea) or avoid creating negative perceptions and stigma (Jordan, 2005). Williams (1995) also notes that students with Asperger's syndrome who are highly emotional and reactive may need more restrictive placements. For those students with ASD who are educated in general education classrooms, there are a wide range of practices that can be implemented to promote success.

Recommendations for Inclusive Settings

In order to help teachers and parents educate students with ASD in inclusive settings, many authors have created summaries of inclusion practices for students with autism (e.g., Dahle, 2003; Harrower & Dunlap, 2001), guides for the inclusion of students with Asperger's syndrome (e.g., Griffin et al., 1996; Jordan, 2005; Safran, 2002; Williams, 1995), and works

summarizing treatments and interventions for persons with ASD (e.g., Simpson, 2005; Simpson et al., 1997). Taken together, these recommendations are numerous and varied, such as environmental changes to the physical classroom, teacher-related variables, instructional changes, social skills interventions, and comprehensive treatment packages that may support the inclusion of a student with ASD. Regardless of the specific practices used in the classroom, it is particularly important to note that each individual student's profile of strengths, weaknesses, and behaviors should dictate the level and intensity of the supports (Harrower & Dunlap, 2001; Jordan, 2005; Dahle, 2003).

Environmental adaptations. Perhaps one of the simplest practices for the inclusion of students with ASD is to alter the educational environment to suit the student's needs. For example, students with ASD often demonstrate sensory difficulties that affect learning (Mesibov & Shea, 1996; Jordan, 2005). Thus, teachers may wish to consider soundproofing classrooms (Mesibov & Shea), adjusting the type of lighting in the classroom, or the use of alternative seating (Schilling & Schwartz, 2004). Experts suggest that class sizes should be kept small (Mesibov & Shea), and teachers should thoughtfully consider where in the classroom the student is seated. For instance, students with ASD may benefit from seating at the front of the class to avoid distractions (Williams, 1995) or next to a socially adept and sensitive peer buddy (Safran, 2002; Williams).

Furthermore, for successful classroom inclusion, authors have argued that classroom rules and procedures should be clear and consistent (Griffin et al., 2006; Safran, 2002). These rules should be clearly posted in the classroom, and in some cases, visual aides and prompts may be used to remind the student of important classroom policies (Griffin et al.; Harrower & Dunlap, 2001). Daily activity schedules should also be kept consistent, and when changes occur,

advanced notice should be proffered to the student (Safran). In the case of a special assembly or activity, the student should be well-prepared in advance (Dahle, 2003; Harrison, 1998; Williams, 1995). For occasions in which the break in routine or activity itself is over-stimulating, teachers should provide the student with a safe place or trusted staff member to reduce agitation (Safran). Harrison (1998) notes that when rules are broken or emotions are elevated, public confrontations should be minimized due to sensitivity and little motivation to please. Moreover, social sanctions may be poorly understood by students with ASD (Mesibov & Shea, 1996). Teachers are also wise to become aware of and sensitive to behaviors that may precede an emotional outburst or breakdown (Jordan, 2005; Williams) as well as the consequences that may potentially maintain the unwanted behavior. Methods such as functional behavior assessment and analysis are useful in this regard (Harrower & Dunlap).

Teacher attributes. The personality and behavior of the teacher can also promote successful inclusion for students with ASD. Based on professional opinion, teachers of students with ASD should be kind, patient, and predictable (Safran & Safran, 2001; Williams, 1995) and able to model and promote tolerance, acceptance, and understanding among the students in the class (Safran, 2002). Additionally, as students with ASD typically have difficulty developing social competence (Gutstein & Whitney, 2002; Jordan, 2005), teachers must protect their students with ASD from bullying (Griffin et al., 2006; Williams) and can serve as "social translators" in the classroom (Safran). For example, when a student with ASD has trouble with expressing ideas, the teacher can intervene to support communication. Similarly, if students with ASD do not understand non-literal speech (e.g., sarcasm), the teacher can translate the communicative intent.

Knowledge of practice is another highly salient variable related to successful inclusion (Dahle, 2003; Harrower & Dunlap, 2001; Jordan, 2005). Dahle recommends teachers who have students with ASD in their classroom should receive training on instructional techniques and interventions for students with ASD. As ASDs are complex developmental disorders with variable presentation and a countless list of practices and strategies for education, teachers must demonstrate accurate and adequate knowledge of ASD for inclusion to be successful.

Instructional techniques. Nearly all students with ASD will require some degree of specialized instruction (Mesibov & Shea, 1996), and authors have recommended an array of useful adaptations to instruction. Simple practices include modifications to assignments, both homework and class work. For example, when students are resistant to the quantity of work assigned, teachers can shorten assignments or introduce timed work sessions (Williams, 1995). Likewise, assignments can be divided into smaller, component parts (Griffin et al., 2006; Koegel & LaZebnik, 2004; Williams), and tasks can be strategically ordered to increase motivation and success (i.e., pre-task sequencing; Harrower & Dunlap, 2001). For students with Asperger's syndrome or high-functioning autism, teachers may wish to adjust their instruction to capitalize on the students' excellent rote memory (Williams).

When conducting class instruction, teachers should be aware that many students with ASD learn best when information is presented visually (Jordan, 2005; Mesibov & Shea, 1996). Using computers and other assistive technologies are recommended (Safran, 2002), and these supports can be incorporated into a student's IEP (IDEIA, 2004). For students with limited verbal ability, sign language can be an effective practice (Dahle, 2003). Additionally, teachers may wish to encourage students to use visual learning aides, such as graphic organizers, to manage class content (Griffin et al., 2006). As mentioned previously, students with ASD may

have deficits with receptive language or the implied meanings of communications (Jordan) and teachers must be sensitive to these learning styles both as they conduct academic lessons and manage the behavior of their students.

Other instructional practices can be considered more complex; however, they do not require an extensive amount of expertise to implement. Antecedent strategies, for example, require the teacher to provide a piece of information, prior to instruction or an assignment, such that the information brings focus and attention to the relevant requirements of the task (Harrower & Dunlap, 2001). Prompting and priming are two commonly used methods, and incorporating these strategies with pictures appears to be quite successful (Harrower & Dunlap; Koegel & LaZebnik, 2004). Studies have shown that using picture schedules can reduce resistance to activity transitions (Dettmer, Simpson, Myles, & Ganz, 2000) and increase on-task behavior (Bryan & Gast, 2000). Antecedent procedures can also take the form of highlighting relevant cues in assignments (Koegel & LaZebnik). Due to their proactive and preventative nature (Harrower & Dunlap), antecedent strategies are useful in facilitating inclusion and can be systematically faded over time (Koegel & LaZebnik).

Peer interventions. The most widely researched strategies related to inclusion of students with ASD are peer-mediated interventions (Simpson et al., 1997; Harrower & Dunlap, 2001). These strategies make use of an important benefit to inclusion, namely access to peer models (Mesibov & Shea, 1996). As authors have noted, integration alone will not necessarily facilitate acquisition of positive social behaviors for students with ASD (Mesibov & Shea; Ochs, Kremer-Sadlik, Solomon, & Sirota, 2001; Strain, 1983). Thus, typically developing peers are actively incorporated into classroom practices that promote social and academic development. Empirical

support exists for a variety of peer-mediated interventions (e.g., peer-initiation; cooperative learning groups).

Peer-initiation strategies involve training typically developing peers to engage in social interactions with students with ASD (Simpson et al., 1997). Early studies of peer-initiation strategies found that preschool children without social deficits could be trained to initiate interactions with preschoolers with autism at a specialty school (Odom & Strain, 1986). The intervention was successful at increasing the social responses, but not social initiations, of the students with autism. Using high-status peers (Sasso & Rude, 1987), verbal prompts to the trained peer (Odom & Watts, 1991), self-evaluation (Sainato, Goldstein, & Strain, 1992) and reinforcement contingencies (Mastergeorge et al., 2003) have been found to improve the results of this strategy. The use of high-status peers as peer-initiators, for example, not only increased interactions between the student with ASD and the trained peer, but also interactions between the student with ASD and untrained classmates (Sasso & Rude, 1987).

Peer tutoring is another effective way of engaging socially competent peers in intervention for students with ASD (Simpson et al., 1997; Harrower & Dunlap, 2001). This practice differs from initiation strategies in that the trained peers are taught to not simply interact with the student with ASD, but to also teach a behavior and provide reinforcement. Tutoring sessions are organized to include both instructional time and free play (Simpson et al.). The benefit of this practice is exemplified by Kamps and colleagues (1994), who demonstrated that a class-wide peer tutoring strategy implemented in a general education classroom not only increased sight-word acquisition but also interactions between students with ASD and typically developing peers. This appears to be a promising strategy; however there is limited research on its generality (Harrower & Dunlap). Cooperative learning groups (Dugan, Kamps, Leonard,

Watkins, Rheinberger, & Stackhaus, 1995) and peer incidental teaching (McGee, Almeida, Sulzer-Azaroff, & Feldman, 1992) are similar strategies which have also resulted in positive gains for students with ASD.

Pivotal response training (Koegel, Schreffirnan et al., 2001; Rogers, 2000) is an intervention which focuses on increasing specific behaviors (e.g., asking questions) that eventually lead to the acquisition of more complex and desirable behaviors. Research has shown that typically developing peers can be taught these procedures resulting in increases in positive social behavior (Pierce & Schreibman, 1995; 1997).

Other interventions. Related services, through special education, are common provisions for students with ASD. For example, many students with ASD will receive occupational therapy, speech-language therapy, and/or physical therapy (Dahle, 2003), typically in one-on-one or small group settings. While these services do not necessarily occur in the classroom, they promote inclusion by improving the specific skills that students with ASD need to succeed in the classroom. One related service that does occur in the classroom is the assistance of an adult aide or paraprofessional. According to Williams (1995), these adults can help students in any number of ways in the classroom, including coping with emotional stress; however, the use of paraprofessionals lacks empirical support and several authors have argued that the presence of the paraprofessional should be faded over time so as to foster independence (Giangreco & Broer, 2005; Safran, 2002).

For older and high-functioning students, professionals purport that self-management strategies are well-suited for inclusive settings (Harrower & Dunlap, 2001; Rogers, 2000). For this technique, one or several behaviors are selected, and the student with ASD is trained to monitor and reinforce his own behavior (Koegel & LaZebnik, 2004). In the most thorough self-

management implementations, the first step is to identify the reinforcement contingencies of a particular unwanted behavior through functional assessment and analysis (Harrower & Dunlap). A replacement behavior, serving the same function as the unwanted behavior, then becomes the targeted behavior for self-management. Though not conducted in general education settings, prior research has shown that unpredictable schedules of supervision increased the on-task behavior of students with ASD (Dunlap & Johnson, 1985). Additionally, using an unpredictable schedule of supervision plus a self-management intervention has been shown to increase appropriate behaviors and decrease unwanted self-stimulatory behaviors (Stahmer & Schreibman, 1992).

In some situations, teachers may wish to directly teach social skills (Jordan, 2005; Safran, 2002; Williams, 1995). An important aspect of direct skill instruction is task analysis, during which the teacher must decompose the social skill or behavior into small component parts, and teach each part in succession (Simpson et al., 1997). A significant benefit of direct instruction is that it can be incorporated with a variety of other strategies including peer-mediated interventions (Simpson et al.) and self-management strategies. Social stories can also be used in the classroom to promote positive behaviors and reduce unwanted behaviors such as anxiety or aggression (Safran; Griffin et al., 2006).

Inclusive classrooms should also consider the level of openness and information presented to students and educators in the classroom. Disclosing the diagnosis to the educator and classmates can facilitate a more positive inclusive environment (Ochs et al., 2001), and efforts to educate peers about ASD is recommended (Williams, 1995; Harrison, 1998). Research findings, however, suggest that explanatory information about autism delivered in isolation may

be insufficient to produce positive attitudes in typical peers (Campbell et al., 2004; Swaim & Morgan, 2001).

Moreover, as many students with ASD have a special interest or fixation, teachers can use the student's strong knowledge base to promote inclusion (Safran, 2002). Authors recommend using the fixation to broaden the student's current interest and knowledge (Williams, 1995) or to facilitate conversations with peers (Griffin et al., 2006); teachers, however, must incorporate either self-management strategies or another behavior management plan to ensure the special interest remains appropriate (Koegel & LaZebnik, 2004). Researchers have documented that preferred activities can be used to motivate decreases in social avoidance (Koegel, Dyer, & Bell, 1987).

Comprehensive treatment packages have been developed for the education of children with ASD (Rogers, 1998; Simpson, 2005). Behavioral therapy, such as applied behavior analysis (ABA) and discrete trial training (DTT), can target a variety of behaviors and teach functional, social and academic skills (Lovaas, 1987; Simpson; Rogers). Incidental teaching strategies, which make use of ABA techniques, can be implemented in a naturalistic environment and is believed to promote skill generalization (McGee, Krantz, Mason, & McClannahan, 1983; Simpson). Similarly, children can be taught various "pivotal" behaviors which make subsequent behaviors more likely to be learned (Koegel, Koegel, & McNerney, 2001). Some classrooms have adopted a program called Treatment and Education of Autistic and related Communication handicapped Children (TEACCH), which emphasizes altering the educational environment to meet the learning needs of students with ASD (Simpson). Other treatments, such as floor time or relationship development intervention, may also be used in the classroom (Simpson).

Knowledge of ASD

From the above overview, it is clear that educators have many interventions and practices from which to choose. The literature consistently recommends that educators be knowledgeable of and have access to these practices (Dahle, 2003; Jordan, 2005) in order for inclusive education to succeed for students with ASD (Harrower & Dunlap, 2001). In particular, teachers and other educational professionals should focus on assessing and responding to the individual factors, psychological processing, and educational barriers that impede successful inclusion of students with ASD (Jordan). Some efforts have been made to assess the knowledge base of teachers and other educational professionals about ASD. For example, Stone and Rosenbaum (1988) found that teachers held incorrect beliefs about students with autism, particularly in the area of cognition, when compared to autism specialists. Other studies have shown that speech-language pathologists demonstrated inadequate knowledge of strategies for inclusion (Cascella & Colella, 2004). Furthermore, despite demonstration of accurate knowledge about autism, medical professionals have been shown to make recommendations inconsistent with their knowledge (Kennedy, Regehr, Rosenfield, Roberts, & Lingard, 2004). With legal requirements mandating that teachers be qualified to educate students with ASD (Yell, Katsiyannis, Drasgow, & Herbst, 2003), this is clearly an area in which more research is needed.

Educational Professionals' Attitudes towards Inclusion

A fundamental assumption held by many educators and researchers is that the attitudes educators hold toward the practice of inclusion is an important determinant of the success of inclusive education for students with ASD. That is, personnel responsible for making inclusion successful should hold encouraging views towards the policy in order to maximize its chances of success. While there is limited research on attitudes towards the inclusion of students with ASD,

much research has been conducted on the attitudes that educational professionals hold towards the general concept of inclusion (Avramidis & Norwich, 2002; Scruggs & Mastropieri, 1996). The following review will briefly describe the documentation of the attitudes of general education teachers and school administrators, and comparisons between education professionals, as well as discuss salient variables that may affect attitudes towards inclusion.

General education teachers. Reviews of international research investigating teacher attitudes towards mainstreaming, integration, and inclusion suggest that teachers hold positive views towards the general concept (see Avramidis & Norwich, 2002; Scruggs & Mastropieri, 1996 for reviews). However, there are a variety of factors which influence the opinions of teachers, including type of disability; severity of disability; experience and contact with students with disabilities; training, experience and knowledge of disability; and access to resources and support (Avramidis & Norwich; Hannah & Pilner, 1983).

In general, teachers hold the most positive attitudes towards including students with less severe disabilities who will not require extensive services and specialized skills (Center & Ward, 1987; Ward Center, & Bochner, 1994). These results suggest that teachers feel inclusion is best suited for students with physical impairments, whereas students with cognitive deficits and social-emotional disorders are viewed as least suited for successful inclusion (Avramidis & Norwich, 2002). Furthermore, teachers do not always believe social benefits will occur for students with mild disabilities who are placed in general education settings (Semmel, Abernathy, Butera, & Lesar, 1991).

In one experimental study, experimenters used brief vignettes to simulate inclusion decisions (Myles & Simpson, 1989). Teachers read a short description of a student who was either educable mentally handicapped (EMH), behavior disordered (BD), or learning disabled

(LD), and for each condition, the child in the vignette was either labeled or unlabeled. Myles and Simpson found that the presence or absence of a label did not affect teachers' decision of whether or not to include the student in their classroom. Rather, teachers requested more modifications when the student was described as EMH or BD than LD, and, in general, teachers were willing to accept the hypothetical student into their class. The authors concluded that teacher participation and involvement in the inclusion process and procurement of resources and modifications is an essential aspect to inclusive education success.

Soodak, Podell, and Lehman (1998) also posed a hypothetical inclusion question to a large sample of general education teachers. Teachers were told that their principal was planning to include a student with a disability in their class. Teachers were randomly assigned to respond to one of five disabilities: hearing impaired, learning disabled (LD), intellectually disabled (ID), behavior disordered (BD), or physically handicapped. Responses indicated that teachers felt more negatively towards including students with LD, ID, or BD than students with a physical handicap or hearing impairment.

Contact, the amount of experience one has with a student with a disability, has been suggested as an important method of altering attitudes from negative to positive (Avramidis & Norwich, 2002; Corrigan, River, Lundin, Penn et al., 2001). Early correlational research suggested that teachers at schools with special classrooms for students with disabilities reported less positive opinions about mainstreaming (Center & Ward, 1987). Similarly, researchers have reported strong support for the practice of using resource rooms to meet the educational needs of students with mild disabilities (Coates, 1989; Semmel, Abernathy, Butera, & Lesar, 1991). While these findings may seem to contradict the contact hypothesis, authors have proposed that teachers may have viewed these readily available segregated placements as a more preferable

setting than their own classrooms (Center & Ward). Moreover, self-contained or resource placements allow teachers to avoid contact with students with disabilities, thus denying opportunities for contact to alter attitudes. More recently, research has shown that teachers with active experience with inclusion reported more positive attitudes in terms of their behavioral intentions, beliefs, and emotional reactions (Avramidis, Bayliss, & Burden, 2000a). In addition to contact and experience with students with disabilities, frequency of contact with a special education teacher may promote more positive attitudes (Savage & Weinke, 1989)

Self-efficacy can also be considered an important factor in the development of attitudes towards inclusion, and studies have document that general education teachers often view themselves as lacking skills necessary for successful inclusion of students with disabilities (Semmel et al., 1991). Level of professional training has been found to be significantly related to attitudes (Avramidis, Bayliss, & Burden, 2000a), whereby teachers with special education training expressed more positive attitudes than those without such training (Center & Ward, 1987). Years of experience as an educator may produce variable attitudes; some researchers have reported more negative attitudes towards inclusion policies among teachers with more experience (Savage & Weinke, 1989), whereas other studies report that years of experience was related to improved attitudes towards including students with learning disabilities (Soodak et al., 1998).

Related to ASD, Cook (2001) demonstrated in a correlational design that teachers felt indifferent to a disproportionate number of students with obvious disabilities (e.g., autism) and felt rejection toward a disproportionate number of students with hidden disabilities (e.g., attention deficit-hyperactivity disorder). Cook suggests that teachers may be unaware of how to provide instruction to students with obvious disabilities and therefore feel indifferent towards

them. Indeed, teachers' rationale for their selections supports this theory (Cook, Tankersley, Cook, & Landrum, 2000).

Attitudes towards inclusion are additionally affected by the teacher's perception of support (Center & Ward, 1987), particularly in terms of financial resources (Semmel et al., 1991) and personnel (Robertson, Chamberlain, & Kasari, 2003). A recent descriptive study investigated twelve classrooms each containing a student with high-functioning autism who were educated in general education settings for their entire school day (Robertson et al., 2003). Interestingly, the authors found that teachers reported generally positive relationships with their students with ASD, and there was no difference found in level of social inclusion between students with ASD and their typical peers. It is also important to note that half of the students in the sample were accompanied by paraprofessionals in the classroom, yet this service did not affect teacher perceptions of closeness, conflict or dependency with the included students. While these results are highly encouraging and optimistic, the generalizability of the findings is limited by factors such as small classrooms, small sample, and favorable staff-student ratios (Robertson et al.).

Administrators. While teacher attitudes have been widely investigated, principal (and other administrator) attitudes have received less attention. Principals are the leaders of schools and thus, have been acknowledged as the agents of change (Barnett & Monda-Amaya, 1998). Furthermore, an administrator's attitudes toward inclusion policy has a direct effect on opportunities for special needs students to be educated in general education settings (Praisner, 2003). Thus, it is critical to understand principal's opinions about inclusion.

Early efforts to document administrator attitudes sampled school principals (Center, Ward, Parmenter, & Nash, 1985) and preschool directors (Bochner & Pieterse, 1989). These correlational studies reported similar findings to the general education teacher studies, indicating

that, in general, attitudes towards the concept of inclusion are positive and a variety of factors (e.g., experience, training, severity of disability) influence the direction of such attitudes. Administrators with special education qualifications report the most positive attitudes, particularly when relating opinions about the inclusion of a student with a mild disability (Bochner & Pieterse; Center et al., 1985).

Similarly, in a more recent study of 65 principals, survey data suggested that few principals (less than 33%) would apply inclusive practices to students with severe or profound handicaps (Barnett & Monda-Amaya, 1998). In the same study, investigators also found that the sample produced little agreement on a definition of inclusion and that most principals felt that teachers were not adequately trained and prepared to implement inclusive practices. Another descriptive study of principals' attitudes towards inclusion found that only about 20% of participants demonstrated clearly positive attitudes towards inclusion, and most reported uncertain opinions (Praisner, 2003). Interestingly, when asked to choose the most appropriate placement for students of various disability categories, principals placed students with ASD in regular education settings only 30% of the time and in the most restrictive settings 50% of the time. Further, nearly 30% of respondents reported no experience with students with ASD.

Comparative studies. Several studies have sampled groups of educational professionals and compared their attitudes using correlational designs. A study comparing special education teachers to general education teachers found pronounced differences between the groups (Buell, Hallam, Gamel-McCormick, & Scheer, 1999). For example, general education teachers expressed more need for inclusion training than special education teachers. Moreover, special education teachers expressed greater confidence in performing inclusion related tasks such as adapting curricula, participating in IEP meetings, and writing behavioral objectives.

Some studies have found similar attitudes between regular and special education teachers (Semmel et al., 1991; Vaughn et al., 1996). While these reports indicated hesitancy with the practice of inclusion, it is important to note that the participants in the Vaughn et al. study were teachers not participating in inclusion models. Involvement with inclusion has been shown to be a significant factor in attitudes towards inclusion (Forlin, 1995). Principals of schools with inclusion policies reported less stress regarding inclusion practices than teachers, whereas principals of schools without inclusion policies reported more stress than teachers (Forlin). Another finding is that administrators tend to report more positive attitudes than teachers (Garvar-Pinhas & Schmelkin, 1989), particularly that inclusive education would result in positive effects for students with mild disabilities, such as learning disabilities (Cook, Semmel, & Gerber, 1999).

In relation to the inclusion of students with ASD, McGregor and Campbell (2001) surveyed both specialist and regular education staff. About half of the regular education teachers reported having experience with students with autism. Teachers with autism experience reported similar positive views on inclusion as specialist teachers, who were comprised of special education teachers and teacher aides. Severity of disability emerged as an important factor for inclusion. The study also found that specialist teachers believe to a greater extent that the staff attitudes were an important factor in the success of an inclusion program. Communication deficits, in comparison to socialization difficulties and repetitive behaviors, were rated as most problematic in the classroom.

Conclusions. While few studies investigating educator attitudes towards inclusion have focused on inclusion for students with ASD, several hypotheses can be made based on the related literature. In chief, as type and severity of disability have been shown to influence attitudes, it is

likely that attitudes towards inclusion of students with ASD would be less positive than other disabilities. As stated in the DSM-IV-TR (2000), ASDs "are characterized by severe and pervasive impairment in several areas of development" (p. 69). Additionally, the relative rarity of ASDs to learning disabilities, for example, may lead educators to report less desirable attitudes. As educators may have had few contacts and experiences with students with ASD, contact theory predicts less positive attitudes towards including them in the general education setting. On the other hand, educators who have special education training and/or specific experience with students with ASD (Robertson et al., 2003) will likely demonstrate stronger positive opinions about inclusion for such students than educators without such training and experience.

Purpose of the Present Study

In light of the literature reviewed above, the purpose of the present study is to assess the experience, knowledge, attitudes and current practices of educational professionals as they relate to the inclusion of students with ASD. Specifically, the current study focuses on the following questions and associated hypotheses:

(a) Do special education administrators, special education teachers, and general education teachers differ regarding their knowledge of ASD? I predict that special education teachers will demonstrate the most accurate knowledge of ASD when compared to the other groups.

(b) Do the groups differ on attitudes towards the inclusive education of students with ASD? I predict that, while all groups will report generally positive attitudes, general education teachers will report the least positive attitudes.

(c) What is the relationship between experience, knowledge of ASD and attitudes as they relate to the awareness and use of strategies for including students with ASD in general education settings? I hypothesize that experience, knowledge, and attitudes will be positively

correlated, and experience and knowledge will make a significant contribution to the prediction of awareness of classroom practices.

(d) Do the groups differ in their awareness and use of classroom strategies to include a student with ASD? I predict that special education teachers will be aware of the greatest number of strategies. Additionally, I hypothesize that special education teachers will report using strategies that have stronger empirical support than strategies used by general education teachers.

(e) What is the effect of type of school (i.e., elementary, middle, or high school) on attitudes and classroom practices? I predict that more positive attitudes will be held by educational professionals in elementary schools, and that high school professionals will report using the fewest strategies.

CHAPTER 2

METHOD

Participants

One-hundred and fifty schools were selected to participate in the study. From the Georgia Department of Education website, 50 elementary schools, 50 middle schools, and 50 high schools were randomly selected. The sample represented schools from 73 counties across the state. Educators from 24 schools (16.0%) across 22 counties (30.1%) participated in the study, yielding a total sample size of 47 (out of 450; 10.4% return rate).

Eighteen questionnaires were completed by administrators (38.3%); nine by general education teachers (19.1%); and twenty by special education teachers (42.6%). The majority of respondents were women (85%) and of Caucasian background (89%). Many participants had earned master's degrees or higher; however, administrators were significantly more likely to hold higher educational degrees, $F(2,44) = 11.4$, $p < .001$. Educators from elementary schools represented 21% of the sample ($n = 10$), while 43% ($n = 20$) worked in middle schools and 36% ($n = 17$) worked in high schools. See Table 2 for complete demographic characteristics of the sample.

Development of the Autism Inclusion Questionnaire

The *Autism Inclusion Questionnaire* (AIQ) was developed for the present investigation and contains six sections. The first section, Demographic Information and Experience, collects information regarding present and past educator experience, special education training and

Table 2

Description of Participants

Demographic Variables	% or *M (SD)*	*n*
Female	85.1	40
Age (in years)	42 (10.5)	42
Ethnicity		
Caucasian	89.4	42
African American	8.5	4
Highest Degree Earned[a]		
Bachelor's	23.4	11
Master's	40.4	19
Specialist's	29.8	14
Doctorate	6.4	3
Time in Current Position (in years)	5.5 (5.8)	47
Certified in Special Education[b]	57.4	27
Specific ASD Training	36.2	17
Specific ASD Experience	57.4	27
School Type		
Elementary School	21.3	10
Middle School	42.6	20
High School	36.2	17

Note. [a] = Significant educator group differences, with Administrators reporting higher levels of education than General Educator Teachers or Special Education Teachers, $F(2,44) = 11.37$, $p < .001$; [b] = No General Education Teachers reported having special education certification.

experience, and key demographic variables (e.g., sex, age, ethnicity). Items for this section were adapted from the surveys used in the Praisner (2003) study and the McGregor and Campbell (2001) study. Two forms of the AIQ, a Teacher Form and an Administrator Form, were created to allow different questions to be posed in Section I; the remaining sections of the AIQ are identical between forms (see Appendices A and B).

The second section, Knowledge of Autism Spectrum Disorders, contains 15 items proposed to measure one's knowledge of ASD in three areas: diagnosis and symptomatology; treatment; and etiology. Knowledge items were adapted from Stone (1987), Shah (2001), and Furnham and Buck (2003). The questions in this section are presented as True/False statements; however, a 'Don't Know' option was included and respondents were instructed to select this response rather than guess. Internal consistency of this scale is adequate in the study ($\alpha = .862$).

Section 3, Opinions about Inclusive Education, contains 27 Likert-type scale items. Six response choices range from Strongly Agree to Strongly Disagree, and a seventh option, "No opinion or neutral," is available. On eleven items, respondents evaluate whether various factors (e.g., the severity of disability) are important for successful inclusion. Eight statements measure participants' attitudes towards inclusion in general and inclusion of students with ASD in particular. Additionally, four items were selected to allow comparison of attitudes towards disabilities other than ASD. On these four items, the disability identified was changed to either ADHD or Special Education Needs. Items in this section were adapted from McGregor and Campbell (2001), Furnham and Buck (2003), Praisner (2003), and Stone (1987).

The fourth section, Classroom Behaviors, presents 20 behaviors related to ASD. Participants are asked to rate how disruptive each behavior would be if exhibited by any student in their classroom. Each behavior contained five response choices ranging from Highly

Disruptive to Not At All Disruptive. Items in this section were adopted from the DSM-IV-TR (American Psychiatric Association, 2000), CARS (Schopler et al., 1988), and the McGregor and Campbell (2001) study.

Section 5, Classroom Practices, contains a list of 37 strategies, interventions, and practices that may be useful in the inclusion of a student with ASD in the general education setting. These practices were acquired from a variety of sources including Simpson and coauthors (2005), Alberto and Troutman (2003), and guides for parents and teachers (e.g., Safran, 2002; Harrower & Dunlap, 2001; Williams, 1995). In particular, 19 interventions are summarized by Simpson (2005) who has rated each practice as "Scientifically Based," "Promising," "Limited Supporting Information," or "Not Recommended." For each practice in the list, participants are asked to note whether they have heard of a particular practice, whether they have used the strategy, and whether they think it could be effective in better including a student with ASD in the classroom. The final section of the AIQ contains one item offering the participant an opportunity to participate in future research such as focus groups discussing inclusive education for students with ASD.

AIQ item tryout. An initial pilot study was conducted to evaluate the content validity of the knowledge section, to estimate the length of time it take to complete the survey, and to identify unclear items, items which could be eliminated, and items which could be added. Five participants were identified as autism experts based on affiliation with The University of Georgia and either research or teaching interests in the area of ASD. Six teachers were recruited to serve as a control group. Experts correctly answered 83% of the original 13 knowledge items, whereas teachers correctly answered 73% of the original items. Based on the results, two items (items 3 and 9) were reworded, and two items were added (items 5 and 13). Additionally, all experts

reported awareness of all three strategies identified by Simpson (2005) as "Scientifically Based Practice" that were presented in the questionnaire.

Procedure

One-hundred and fifty public schools (50 elementary schools, 50 middle schools and 50 high schools) were randomly selected from a list of public schools in the state of Georgia. From this list, located on the Georgia Department of Education website, the name of the school, the school address, phone number, school principal, and principal electronic mail address were identified. Packets, containing three questionnaires (one AIQ – Administrator Form and two AIQ – Teacher Forms), were mailed directly to school principals with the instructions to distribute, if necessary, the packet to the school administrator responsible for overseeing the school's special education program. The administrator was instructed to complete the AIQ – Administrator Form, and to distribute one AIQ – Teacher Form to a general education teacher and one AIQ – Teacher Form to a special education teacher. Each survey contained a consent form for the participant's records and an addressed stamped return envelop. To increase return rates, three follow-up contacts were made. The first contact was an e-mail sent to principals roughly one week after the initial mailing. A second contact, via e-mail, occurred one month later, and a final reminder e-mail to participate was sent roughly six weeks after the initial mailing.

Data Reduction and Analysis

Survey data was analyzed using SPSS software. The proposed hypotheses were evaluated using ANOVA and multiple regression procedures. For the purpose of analysis, several total scores were created. An Experience Total Score (EXP) was calculated by summing a participant's affirmative responses to having special education certification, specific autism training, and specific autism experience. Thus, EXP could range from 0 to 3. A Knowledge Total

Score (KNOW) was calculated by summing the number of correct responses to the 15 knowledge items. In addition, the number of 'Don't Know' responses was summed, and a Percent Correct Score was calculated by dividing KNOW by the difference between 15 and the number of 'Don't Know' responses [Percent Correct Score = KNOW / (15 - # of Don't Know)]. Missing data from the Knowledge of ASD section were recoded as 'Don't Know' responses.

From the Opinions about Inclusive Education section, eight items (item 2, 8, 18, 21, 22, 23, 25, and 27) comprised an Attitude toward ASD Inclusion Total Score (ATT). Responses to items 21 and 23 were reverse scored such that positive attitudes were reflected in lower scores. Scores for ATT could range from 8 to 56. Scores falling between 8 and 24 reflect positive attitudes (average score of 3 or below, suggesting Slightly Agree or stronger); scores between 40 and 56 reflect negative attitudes (average score of 5 or higher, suggesting Slightly Disagree or stronger); and scores falling between 24 and 40 represent attitudes that are neither positive nor negative. Cronbach's index of internal consistency for this scale was .693.

Finally, two total scores were calculated based on responses to the Classroom Practices section. An Awareness of Practice Total Score (AWARE) was calculated by summing the number of strategies for which participants indicated awareness. A Use of Strategies Score (USE) was calculated by summing the number of strategies for which participants indicated current or prior use. It is important to note that only the 19 strategies discussed in the Simpson (2005) treatment guide were included in the Use of Strategies score, and strategies were weighted according to Simpson's categorization. Thus, use of Scientifically Based Practices was scored as 3; use of Promising Practices was scored as 2; use of Limiting Supporting Information practices was scored as 1; and use of Not Recommended practices was scored as 0. Using this scoring procedure, USE could range from 0 to 33.

CHAPTER 3

RESULTS

Relationships between EXP, KNOW, ATT, AWARE, and USE

Total scores for autism experience (EXP), knowledge of ASD (KNOW), attitude towards inclusion of students with ASD (ATT), awareness of practices for inclusion of students with ASD (AWARE), and use of empirically supported strategies (USE) are reported in Table 3. Groups differed with respect to experience, $F(2,44) = 10.1$, $p < .001$, with general education teachers reporting significantly less experience with autism than both special education teachers or administrators. Similarly, the groups differed with respect to awareness of practices to include students with ASD in the classroom, $F(2,42) = 6.5$, $p = .004$, with general education teachers reporting significantly less awareness of practice options. However, as shown in Table 3, educators groups did not differ in their knowledge of ASD, their attitudes towards the inclusion of students with ASD, or their use of strategies evaluated by Simpson (2005).

Correlation analysis revealed several significant relationships between the variables (see Table 4). First, EXP was significantly related to KNOW ($r(46) = .50$, $p < .001$), AWARE ($r(44) = .58$, $p < .001$), and USE ($r(44) = .57$, $p < .001$). KNOW was also significantly related to AWARE ($r(44) = .35$, $p = .018$) and USE ($r(44) = .37$, $p = .012$). ATT was not significantly correlated with any of the other four factors (i.e., EXP, KNOW, AWARE, and USE). Interestingly, ATT was significantly related to the number of "Don't Know" responses from participants ($r(45) = .33$, $p = .027$), such that respondents who reported less positive attitudes

Table 3

Total Scores for Autism Experience (EXP), Knowledge of ASD (KNOW), Attitude towards Inclusion of Students with ASD (ATT), Awareness of Practices to Include Students with ASD (AWARE), and Use of Strategies (USE)

	Total Scores				
	EXP	KNOW	ATT	AWARE	USE
Administrators (*n*=18)	1.50 (1.3)	6.83 (3.4)	18.72 (5.1)	23.76 (5.2)	11.88 (6.5)
General Education Teachers (*n*=9)	0.22 (0.4)[a]	5.56 (3.0)	23.67 (7.0)	16.13 (7.1)[b]	6.00 (7.1)
Special Education Teachers (*n*=20)	2.10 (1.0)	8.00 (3.7)	19.84 (4.7)	24.80 (6.0)	11.75 (7.4)
Total Sample (*N*=47)	1.51 (1.2)	7.09 (3.5)	20.15 (5.5)	22.87 (6.6)	10.8 (7.2)

Note. Data is presented as mean (standard deviation); [a] = General Education Teachers with significantly less experience than Special Education Teachers and Administrators, $p < .001$; [b] = General Education Teachers with significantly less awareness of practices than Special Education Teachers and Administrators, $p = .004$

Table 4

Correlations between Total Scores for Autism Experience (EXP), Knowledge of ASD (KNOW), Attitude towards Inclusion of Students with ASD (ATT), Awareness of Practices to Include Students with ASD (AWARE), and Use of Strategies (USE)

	EXP	KNOW	ATT	AWARE
EXP	---	---	---	---
KNOW	.502**	---	---	---
ATT	-.208	-.232	---	---
AWARE	.582**	.350*	-.114	---
USE	.574**	.370*	-.131	.809**

Note. * $p < .02$ (two-tailed); ** $p < .001$ (two-tailed)

were more likely to supply more "Don't Know" responses to knowledge items. A multiple regression analysis, in which EXP, KNOW, and ATT (independent variables) were hypothesized to predict AWARE (dependent variable), suggests that autism experience is the only salient predictor of awareness of inclusion practices, accounting for 39% of the variance, $b = 3.4$, $p < .001$. A second multiple regression analysis was conducted, in which EXP, KNOW, and ATT (independent variables) were hypothesized to predict USE (dependent variable). Similarly, this analysis suggests that autism experience is the only salient predictor of use of empirically supported strategies, accounting for 34% of the variance, $b = 3.5$, $p < .001$.

Descriptive Analysis of Knowledge of ASD Responses

Educator groups did not significantly differ on the Knowledge of ASD Total Score, their number of 'Don't Know' responses, or their Percent Correct Score. On average, participants answered seven (out of 15) Knowledge of ASD questions correctly, and responded correctly 71% of the time when 'Don't Know' responses were omitted from the denominator. Most of the sample demonstrated correct knowledge that not all children with ASD are alike (74.5%, $n = 35$) and treatment effects are not the same for all children with ASD (87.2%, $n = 41$). Only one participant reported correct knowledge that sensory impairment is not a diagnostic criterion of ASD (see Table 5 for complete results).

Subgroup Analysis of Awareness of Practice Options

Although general education teachers were aware of significantly fewer classroom practices ($M = 16.1$ out of 37) than administrators ($M = 23.8$) or special education teachers ($M = 24.8$), $F(2,42) = 6.5$, $p = .004$, participants reported great variability in the practices of which they were aware and their use of such strategies (see Table 6 for complete results). For example, nearly two-thirds of the sample reported awareness of Applied Behavior Analysis (ABA), a

Table 5

Descriptive Results for Educators' Performance on the Knowledge of Autism Spectrum Disorders Questionnaire

Knowledge of ASD Items	% correct	% don't know
Symptoms and Diagnosis		
The diagnostic criteria for Asperger's syndrome are identical to high-functioning autism.	25.5	51.1
ASDs are developmental disorders.	34.0	48.9
ASDs only exist in childhood.	80.9	17.0
Children with ASDs are very similar to one another.	74.5	19.1
Most children with ASDs have cognitive abilities in the intellectually disabled range.	12.8	31.9
Most children with ASDs have special talents of abilities.	25.5	27.7
The core deficits in ASDs are Impaired Social Understanding, Language Abnormalities, and Impaired Sensory Functioning.	2.1	42.6
Treatment and Intervention		
Behavior therapy is an intervention most likely to be effective for children with ASDs.	55.3	34.0
Early intervention demonstrates no additional benefit to children with an ASD.	68.1	27.7

Table 5 (continued)

Descriptive Results for Educators' Performance on the Knowledge of Autism Spectrum Disorders Questionnaire

Knowledge of ASD Items	% correct	% don't know
If an intervention works for one child with an ASD, it will definitely work for another child with an ASD.	87.2	12.8
Medication can alleviate the core symptoms of ASDs.	40.4	44.7
With proper intervention, most children with an ASD will eventually "outgrow" the disorder.	66.0	34.0
Etiology		
Genetic factors play an important role in the causes of ASDs.	44.7	48.9
In many cases, the cause of ASDs is unknown.	61.7	38.3
Traumatic experience very early in life can cause an ASD.	29.8	57.4

Note. $N = 47$

Table 6

Educators' Awareness and Use of Inclusion Practices

	Heard Of		Used or Using[a]	
Inclusion Practices	%	*n*	%	*n*
Simpson – Scientifically Based Practice				
Applied Behavior Analysis	61.7	29	86.2	25
Discrete Trial Training	23.4	11	54.5	6
Pivotal Response Training	14.9	7	57.1	4
Simpson – Promising Practice				
Assistive Technology	91.5	43	83.7	36
Augmentative and Alternative Communication	63.8	30	63.3	19
Incidental Teaching	36.2	17	76.5	13
Joint Action Routines	6.4	3	100.0	3
Picture Exchange Communication System	51.1	24	75.0	18
Play Oriented Strategies	53.2	25	60.0	15
Sensory Integration	63.8	30	73.3	22
Social Stories	61.7	29	75.9	22
TEACCH	48.9	23	65.2	15
Simpson – Limited Supporting Information				
Art Therapy	74.5	35	51.4	18
Floor Time	46.8	22	59.1	13
Gentle Teaching	21.3	10	80.0	8

Table 6 (continued)

Educators' Awareness and Use of Inclusion Practices

	Heard Of		Used or Using[a]	
Inclusion Practices	%	*n*	%	*n*
Relationship Development Intervention	17.0	8	50.0	4
Cognitive Scripts	38.3	18	51.1	11
Van Djik Curricular Approach	2.1	1	0.0	0
Simpson – Not Recommended				
Facilitated Communication	48.9	23	65.2	15
Other Approaches				
Behavior Management Strategies				
Behavior Contract	95.7	45	91.1	41
Choice Making	87.2	41	95.1	39
Edible Reinforcement	59.6	29	100.0	28
Functional Behavior Assessment/Analysis	72.3	34	91.2	31
Token Economies	72.3	34	94.1	32
Verbal Reinforcement	93.6	44	95.5	42
Instructional Techniques				
Extra Time on Assignments	95.7	45	97.8	44
Priming	34.1	16	81.3	13
Prompting	89.4	42	90.5	38
Visual Activity Schedules	63.8	30	96.7	29

Table 6 (continued)

Educators' Awareness and Use of Inclusion Practices

	Heard Of		Used or Using[a]	
Inclusion Practices	%	*n*	%	*n*
Classroom Modifications				
Preferential Seating	93.6	44	93.2	41
Providing Students a Homebase	51.1	24	91.7	22
Providing a List of Schedule Changes	80.9	38	86.8	33
Providing a List of Classroom Expectations	91.5	43	93.0	40
Peers/Social Skills				
Direct Instruction of Social Skills	83.0	39	94.9	37
Educating Peers about ASD	51.1	24	54.2	13
Peer Initiation Strategies	57.4	27	70.4	19
Peer Tutoring Strategies	93.6	44	93.2	41

Note. [a] = 'Used or Using' percentages are based on respondents who reported awareness of the particular practice.

scientifically based practice, according to Simpson (2005). However, less than one-quarter of the participants were aware of other scientifically based practices such as Discrete Trial Training and Pivotal Response Training, both of which are based upon ABA principles. Interestingly, nearly half of the sample indicated they had heard of Facilitated Communication, a strategy not recommended by Simpson, and of those reporting awareness, nearly two-thirds had used or were using this strategy. It is also interesting to note that the vast majority of those who reported awareness of various behavior management strategies also indicated some experience with using the particular strategy. For example, 72% noted that they had heard of Token Economies, of whom 94% reported past or current use of Token Economies.

Descriptive Analysis of Attitudes towards Inclusive Education

In comparison to special education administrators and special education teachers, general education teachers reported less favorable attitudes to the statement, "Children with ASD should be integrated in general education settings (Item 2)," $F(2,44) = 5.5$, $p = .007$. However, educator groups did not differ significantly on the Attitudes Total Score, $F(2,43) = 2.1$, $p = .08$. The majority of respondents agreed that inclusive education enhances the learning experience of students with disabilities (94%) and students without disabilities can benefit from contact with students with an ASD (89%). Eighty percent of respondents disagreed that students with classic autism are too impaired to benefit from the activities of a regular school. However, few educators believe that all students with an ASD should be included in general education settings (26%). See Table 7 for complete results.

Educators also endorsed a variety of factors that would contribute to the successful inclusion of a student with an ASD (see Table 8). A mixed-model analysis of variance was conducted to determine if educator groups rated factors differentially and if particular factors

Table 7

Descriptive Results for Educators' Attitude toward Inclusive Education for Students with ASD

Attitude Total Score items	Mean*	% Agreement	*n*
Inclusive education enhances the learning experience of students with disabilities (Item 18)	1.89	93.6	47
Students without disabilities can benefit from contact with students with an ASD (Item 25)	1.96	89.4	47
Discretionary financial resources should be allocated for the inclusion of students with an ASD (Item 23)[a]	2.02	87.0	46
A good general education teacher can do a lot to help a student with ASD (Item 22)	2.11	89.4	47
It is important for children with an ASD to receive special education services at school (Item 27)	2.26	83.0	47
Students with classic autism are able to benefit from the activities of a regular school (Item 21) [a]	2.36	80.9	47
Children with an ASD should be integrated in general education settings (Item 2)	2.72	78.7	47
All students with an ASD should be included in general education settings (Item 8)	5.04	27.7	47
Attitude Total Score	20.15		46

Note. [a] = Items 21 and 23 have been reworded to reflect positive statements; * = Lower scores reflect stronger agreement range 1 (Strongly Agree) to 7 (Strongly Disagree)

Table 8

Factors for Successful Inclusion of a Student with Autism Spectrum Disorder

Factors for Successful Inclusion of a Student with ASD	Mean*	% Agreement
Attitude of the staff (Item 7)	1.40	95.7
Use of reinforcement schedules (Item 12)	2.13	85.1
Severity of disability (Item 5)	2.15	89.4
Encouraging students to interact with typically developing peers (Item 11)	2.26	83.0
Help of an auxiliary teaching professional (Item 3)	2.34	83.0
Academic ability of the student (Item 4)	2.45	80.9
One-on-one intervention (Item 10)	2.77	72.3
Student's personality (Item 6)	3.13	74.5
Medication and drug therapy (Item 13)	3.70	46.8
Teachers with extensive special education experience (Item 17)	4.81	29.8
Special schools specifically designed for ASD needs (Item 26)	5.32	12.8

Note. $N = 47$; * = Lower scores reflect stronger agreement; range 1 (Strongly Agree) to 7 (Strongly Disagree)

would emerge as rated stronger than others. Using a Huynh-Feldt correction for violation of the sphericity assumption, the within-subjects analysis suggests that while the interaction between educator groups and factors was non-significant, $F(14.3,314.6) = 1.585$, $p = .08$, there was a main effect for factors for success, $F(7.2,314.6) = 37.4$, $p < .001$. In particular, the attitudes of the staff emerged as the factor with the strongest agreement across educator groups ($M = 1.40$), and this item was rated more positively than all other factors ($p < .005$).

Similarly, a mixed-model analysis of variance was conducted to determine if educator groups rated potentially disruptive behaviors differentially and if particular behaviors would emerge as more disruptive than others. Using a Huynh-Feldt correction for violation of the sphericity assumption, the within-subjects analysis suggests that while the interaction between educator groups and disruptive behaviors was non-significant, $F(26.6,559.6) = 1.18$, $p = .25$, there was a main effect for disruptive behaviors, $F(13.3,559.6) = 31.17$, $p < .001$. Table 9 presents the mean ratings for each potentially disruptive behavior and the percent of respondents who rated the behavior as highly disruptive. Aggression ($M = 1.60$) and screaming ($M = 1.69$) emerged as two of the most disruptive behaviors, significantly differing from all other potentially disruptive behaviors ($p < .05$) except for non-compliance ($M = 1.93$) and hyperactivity ($M = 2.27$).

Influence of School Type on Experience, Knowledge, and Attitudes

Educators did not differ in their experience with ASD, attitudes, or knowledge of strategies depending on the age of students with which they worked. However, middle school educators were significantly less knowledgeable about ASD as compared to educational professionals from elementary schools and from high schools, $F(2,44) = 3.21$, $p = .05$.

Table 9

Educators' Ratings of Behaviors associated with Autism Spectrum Disorders

Disruptive behaviors	Mean[a]	% Highly Disruptive
Aggression (to peers or adults)	1.60	68.9
Screaming, crying, or tantruming	1.69	60.0
Non-compliance to teacher authority	1.93	44.4
High levels of activity	2.27	31.1
Inappropriate emotionality	2.49	20.0
Off-task behavior	2.51	15.6
Preoccupation with touching, smelling, or tasting objects or people	2.60	20.0
Repetitive, bizarre, or echolalic speech	2.64	22.2
Resistance and negative reaction to changes in the schedule	2.84	20.0
Rudeness in making requests	2.89	13.3
Sensitivity to sounds	3.04	6.7
Problems with non-verbal behavior	3.16	6.7
Strange or unusual body movements	3.20	4.4
Fear of harmless objects	3.31	8.9
Preoccupation with one particular object or toy	3.40	4.4
Poor peer relations	3.51	2.2
Aloofness of lack of awareness of what the teacher is doing	3.58	0.0

Table 9 (continued)

Educators' Ratings of Behaviors associated with Autism Spectrum Disorders

Disruptive behaviors	Mean[a]	% Highly Disruptive
Difficulty in reciprocal conversation	4.02	0.0
Lack of peer relations	4.20	2.2
Eye contact avoidance	4.60	0.0

Note. $n = 45$; [a] = Lower scores imply the behavior is more disruptive; range 1 (Highly disruptive) to 5 (Not at all disruptive)

CHAPTER 4

DISCUSSION

The present study represents an attempt to investigate the constructs of experience, knowledge, and attitudes as they relate to inclusive education for students with autism spectrum disorders. These variables were predicted to positively relate to practice, such that educators with more experience, greater knowledge, and positive attitudes would report greater awareness of practices used for the inclusion of students with ASD. Furthermore, I hypothesized that different types of educators would report different levels of knowledge and attitudes towards inclusive education, with special education teachers reporting greater knowledge and more positive attitudes than general education teachers. Several main findings emerged as a result of the study.

The primary finding is that while experience and knowledge significantly relate to awareness and use of practice options, attitudes do not. General education teachers, as a group, reported the least experience with ASD and awareness of the fewest inclusion strategies; special education teachers and administrators, on the other hand, did not differ significantly. Furthermore, experience with ASD, rather than knowledge or attitudes, was most predictive of the number of inclusion practices of which educators were aware and their reported use of treatments categorized by Simpson (2005). These results are particularly interesting given that across educator types, of a group of eleven possible factors for successful inclusion, the attitude of the staff was ranked as the most important and special education experience was ranked

among the least important. Thus, while the results suggest that attitudes are unrelated to practice and experience is strongly related, the views of educators endorse the opposite perspective.

Knowledge did not differ between educator groups, and on average, participants responded correctly to seven knowledge items. Education professionals readily recognized the heterogeneity of ASD, both in terms of its presentation and individual response to treatment. On the other hand, knowledge of the cognitive and core features of ASD was less evident, consistent with previous findings (Stone & Rosenbaum, 1988). However, the implications of these findings must be contextualized in terms of validity evidence.

Content validity was evaluated in two primary ways. First, knowledge items were derived from both previous studies assessing knowledge of ASD and are largely based on the DSM-IV-TR (APA, 2000) description of pervasive developmental disorders. Second, an initial item tryout suggested that researchers and experts in the field of ASD responded with high accuracy to knowledge items. Thus, efforts were made to create a knowledge measure which could accurately assess one's knowledge of ASD in terms of symptoms and diagnosis, treatment and intervention, and etiology, and the measure appears to be internally reliable ($\alpha = .86$).

However, given the relative newness of ASDs as psychiatric diagnoses, knowledge of autism is ever expanding and growing. Indeed, recent reviews suggest that the previously held "fact" that the majority of persons with autism are also intellectually disabled is questionable (Edelson, 2006). Moreover, in terms of diagnostic criteria, teachers who are familiar with IDEIA eligibility criteria may have expressed knowledge that is consistent with special education eligibility yet inconsistent with psychiatric diagnosis. For example, the core deficits of ASD, according to the DSM-IV-TR, are social understanding, language use, and repetitive behaviors. Yet, eligibility for special education services under the category of autism suggests there are five

characteristic areas, one of which is sensory processing (see Table 1). While it is encouraging that knowledge of ASD was significantly related to awareness of practice, demonstrating support for the construct validity of the Knowledge Total Score, conclusions regarding the amount of knowledge held by this sample must be conservative. As a group, participants selected "Don't Know" for five of 15 items on average, and, on several items, no respondents answered incorrectly, but rather respondents chose either the correct response or selected "Don't Know." This suggests that educators profess a lack of knowledge, rather than an endorsement of incorrect knowledge.

This lack of knowledge can be seen on the participant's awareness of practices for the inclusion of students with ASD. Many practices and strategies exist (Harrower & Dunlap, 2001), and on average, of the 37 options that are provided on the AIQ, educators reported they had heard of nearly 23 strategies. While general education teachers demonstrated awareness of the fewest number of strategies compared to special education teachers or administrators, at the item level, few group differences were found. For example, all educator groups were equally likely to report awareness of peer-related and social skill interventions, such as direct instruction (M = 83%) and peer initiation strategies (M = 57%).

Of the strategies reviewed by Simpson and colleagues (2005) that were included in the AIQ, many were recognized by at least 25% of the sample. Furthermore, of respondents who reported awareness of these strategies, most also reported prior or current use of the strategies. Regrettably, this finding is true for Facilitated Communication (FC) as well; 65% of the 23 respondents who had heard of FC reported that they had used or were currently using the strategy which Simpson lists as "Not Recommended." However, it must be clearly stated that reporting awareness or use of a practice does not imply that the strategy is or has been implemented in the

manner in which it was intended. Thus, it is beyond the scope of the AIQ instrument to assess how a particular strategy (e.g., facilitated communication) was implemented. It is also plausible that respondents using FC were, in practice, using a type of Augmentative and Alternative Communication. Additionally, it is conceivable that teachers may be using a strategy though not know the strategy's title within the ASD treatment literature.

The attitudes towards inclusion of students with ASD in general education settings were generally positive. This is consistent with previous studies of teacher attitudes indicating that teachers are typically supportive of the general concept of inclusion (Avramidis & Norwich, 2002). However, in the current study, participants suggested that full inclusion is not appropriate for all students with ASD (Mesibov & Shea, 1996), with roughly 75% of the sample disagreeing that "all students with an ASD should be included in general education settings." Further, participants indicated a variety of factors which would promote the successful inclusion of a student with ASD, including the attitude of the staff, severity of disability, and help of an auxiliary teaching professional. While previous studies found significant differences between specialist teachers and mainstream teachers regarding factors for success (McGregor & Campbell, 2001), the current investigation suggests that educator types uniformly recognize variables that may affect inclusion success. However, as with the McGregor and Campbell study, the notion of "successful inclusion" was undefined and left to participants to generate outcomes to evaluate inclusive education. This is a significant limitation of the results.

Furthermore, participants did not report that the behaviors typically associated with ASD were particularly disruptive. While behaviors such as aggression and screaming were viewed as highly disruptive, many other behaviors resulting from impairments in social interactions and language use were perceived as less disruptive. Thus, to the extent that the behaviors listed in the

AIQ can be viewed as representative for ASD, it appears that the core symptomatic behaviors of students with ASD are not perceived as significant barriers to participation in general education settings.

Implications

Perhaps the most important implication from this study is that educators demonstrate a substantial lack of knowledge with respect to ASD; therefore, this information should be incorporated into training curricula and in-service presentations for teachers. The education of students with ASD is a complicated task, one which must begin with accurate and broad understanding of the disorder, particularly in terms of symptoms and interventions. It is a positive finding that use of reinforcement schedules were cited as an important factor for successful inclusion of a student with ASD, and behavior management strategies were reported as one of the most frequently heard of and often used strategies. On the other hand, educators were less aware of strategies such as applied behavior analysis, discrete trial training, and pivotal response training, which Simpson (2005) describes as "Scientifically Based Practice." Dissemination and implementation of ASD-related information should also be multi-dimensional and comprehensive as knowledge alone does not predict behavior (Kennedy et al., 2004).

Similarly, experience emerged as a highly relevant factor in the prediction of awareness of inclusive education strategies for students with ASD as well as their use. Thus, providing teachers and other educational professionals with access to students with ASD may increase one's repertoire of practices for inclusion. Also, as contact theory suggests, educators who acquire more experience in working with students with ASD may later develop more positive attitudes towards these students (Corrigan et al., 2001; McGregor & Campbell, 2001).

This investigation suggests, however, that the measurement and predictive utility of teachers' attitudes towards inclusive education for students with ASD is complex. Decades of research highlight the importance of teacher attitudes with respect to implementation of inclusive education in schools; and, yet, the relationship between attitudes and awareness of practices in this study was non-significant. While this may suggest that attitudes per se are less important than knowledge or the provision of necessary resources, perhaps the attitudes measured by the AIQ do not fully capture the construct as it relates to practice. That is, additional research is needed to discover if teachers hold variable affective, conative, and cognitive attitudes towards inclusion (Hannah & Pilner, 1983) and how these types of beliefs affect practice. The current study suggests that, across educator groups, attitudes are generally positive towards inclusive education for students with ASD, which, as teachers also reported in this study, is an important factor for success.

Limitations and Future Directions

Clearly, the small sample size reported in this study ($n = 47$) is a significant limitation of the findings. In particular, many of the significant (and non-significant) differences found between administrators, special education teachers, and general education teachers are limited by having only nine general education teachers in the sample. Future research using the AIQ and other measures to assess experience, knowledge and attitudes of educations must ensure an adequate sample size so as to increase power to detect differences and confidence in the results. Furthermore, larger sample sizes would also future researchers the opportunity to more fully assess the reliability and validity of the AIQ. Data from the present study suggest that the AIQ may be a reliable and valid instrument; in addition to increasing sample size, future studies using

the AIQ may wish to add additional items to the knowledge and attitudes sections to more fully and reliably capture the intended constructs.

Additionally, while the attempt to simultaneously capture data from administrators, special education teachers and general education teachers represents a strength of the present study, future research using the AIQ should also include samples of other stake holders with the issue of inclusive education for students with ASD. Prior research regarding attitudes towards inclusion has sampled school psychologists (e.g., Center & Ward, 1989), student teachers (e.g., Avramidis, Bayliss, & Burden, 2000b; Hastings & Oakford, 2003), paraprofessionals (e.g., Giangreco & Broer, 2005), and parents (e.g., Kasari, Freeman, Bauminger, & Alkin, 1999; Stoner et al., 2005). Other researchers have directly investigated peers' attitudes towards children with ASD (Campbell et al., 2004; Swaim & Morgan, 2001), and the AIQ could be adapted to be used with peers as well.

Cascella and Colella (2004) found that speech-language pathologists demonstrated a lack of knowledge regarding educational assessment and intervention options for students with ASD. The authors recommended that graduate programs must emphasize this training and information to future speech-language pathologists so as to serve the needs of children with ASD. Similarly, as school psychologists typically are the professionals who conduct assessments for autism eligibility in public schools (Yell et al., 2003), it is essential to assess the experience, knowledge, and attitudes of school psychologists.

While the AIQ in many ways is broad in scope, measuring experience, knowledge of ASD, and several other constructs, the attitudes and practices section are limited in important ways. First, in terms of attitudes, future studies should investigate multiple components of attitudes towards inclusive education for students with ASD. As previously mentioned, the

results indicated a non-significant relationship between attitudes and practice. Many of the items in the attitudes total score can be considered cognitive attitudes; perhaps conative attitudes or affective attitudes may better relate to awareness and use of inclusion strategies. Also, the practices section, while it contains 37 items, is by no means exhaustive. For example, the assistance of a paraprofessional in the classroom was not part of the list of strategies, and participants noted that use of a paraprofessional was an important factor for success. Future investigations assessing teacher practice should make use of a strategies list which is more inclusive and more exhaustive than the current version of the AIQ. Additionally, provision or assessment of a definition for successful inclusion would be a useful amendment.

It has also been asserted that the external validity of the findings come in to question when one considers that reporting use of applied behavior analysis does not imply actual or correct use of such a procedure. In other words, while self-report of practice provides some useful information, it is only a proxy for what actually occurs during instruction. Therefore, future studies investigating the relationship between constructs, such as attitudes and knowledge, and teacher practice should make efforts to observe teacher practice as a component of the study. Furthermore, observational data could provide important validity evidence to evaluate the utility of the AIQ. Prior research has established various protocols for the measurement of classroom behavior and other variables (Brown, Odom, Li, & Zercher, 1999; Ochs, Kremer-Sadlik, Solomom, & Sirota, 2001).

Finally, the AIQ, with psychometric improvements, could be used as an assessment tool in future studies investigating inclusive education for students with ASD more specifically. For example, researchers through the use of vignettes could pose the question, “Which classroom practices would you recommend?” for student with a particular ASD diagnosis (e.g., Asperger’s

disorder). In this way, it could be determine as to whether educators would use different inclusion strategies for ASD students of differing profiles. Additionally, the research design may wish to ascertain whether diagnostic labels (versus a description of behavior and attributes) alter attitudes and/or recommendations (e.g., Myles & Simpson, 1989). The AIQ could also conceivably be used by administrators to assess teacher readiness to have a student with ASD included in his classroom. Results of the questionnaire could yield deficits or strengths in particular areas that could be specifically targeted for training or remediation.

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APPENDIX A

Autism Inclusion Questionnaire – Administrator Form

Section 1: Demographic Information and Experience

Today's Date: _____

School _____ County _____

Sex: Male □ Female □ Age _____

Ethnicity: African American □ Asian American □ Caucasian/White □

Hispanic/Latino □ Native American □ Other □ _____

Administrative Title: Principal □ Assistant Principal □ Other □ _____

What is your highest degree earned? High School diploma □ Associate's degree □ Bachelor's degree □

Master's degree □ Specialist's degree □ Doctorate degree □

Time in current position: _____ years _____ months

Please list any prior Educator positions held and the length of time in that position.

1_____

2_____

3_____

Are you **certified** in Special Education? Yes □ No □

If 'No', have you had **training** in Special Education? Yes □ No □

If 'Yes', please explain.

_____

_____

_____

About how many students are in your school? _____ How many teachers? _____

About how many students in your school have an IEP? _____ How many self-contained classrooms? _____

Have you had specific **training** to educate students with an Autism Spectrum Disorder (ASD)? Yes □ No □

If 'Yes', please explain. _____

_____

_____

_____

Have you had specific **experience** working with or educating students with an Autism Spectrum Disorder (ASD)? Yes □ No □

If 'Yes', please explain. _____

_____

_____

_____

Section 2: Knowledge of Autism Spectrum Disorders

Circle TRUE or FALSE for the following questions based on your current knowledge of Autism Spectrum Disorders (ASDs).

Please, DO NOT GUESS. If you are unsure of an answer, please circle DON'T KNOW.

1. The diagnostic criteria for Asperger's Syndrome are identical to High Functioning Autism.	True	False	Don't Know
2. ASDs are developmental disorders.	True	False	Don't Know
3. Genetic factors play an important role in the causes of ASDs.	True	False	Don't Know
4. ASDs exist only in childhood.	True	False	Don't Know
5. Behavior therapy is an intervention most likely to be effective for children with ASDs.	True	False	Don't Know
6. Children with ASDs are very similar to one another.	True	False	Don't Know
7. Early intervention demonstrates no additional benefit to children with an ASD.	True	False	Don't Know
8. If an intervention works for one child with an ASD, it will definitely work for another child with an ASD.	True	False	Don't Know
9. Medication can alleviate the core symptoms of ASDs.	True	False	Don't Know
10. Most children with ASDs have cognitive abilities in the intellectually disabled range.	True	False	Don't Know
11. Most children with ASDs have special talents or abilities.	True	False	Don't Know
12. In many cases, the cause of ASDs is unknown.	True	False	Don't Know
13. The core deficits in ASDs are Impaired Social Understanding, Language Abnormalities, and Impaired Sensory Functioning.	True	False	Don't Know
14. Traumatic experience very early in life can cause an ASD.	True	False	Don't Know
15. With proper intervention, most children with an ASD will eventually "outgrow" the disorder.	True	False	Don't Know

Section 3: Opinions about Inclusive Education

Please mark the response that best describes how you feel about the following statements:

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree	No opinion or Neutral
1. The severity of disability is an important factor in the successful inclusion of a student with **ADHD**.	□	□	□	□	□	□	□
2. Children with an **ASD** should be integrated in general education settings.	□	□	□	□	□	□	□
3. The help of an auxiliary teaching professional (i.e. paraprofessional) is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
4. The academic ability of the student is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
5. The severity of disability is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
6. The student's personality is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
7. The attitude of the staff is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
8. All students with an **ASD** should be included in general education settings.	□	□	□	□	□	□	□
9. Children with **special educational needs** should be integrated in general education settings.	□	□	□	□	□	□	□
10. One on one intervention is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
11. Encouraging students with an **ASD** to interact with typically developing peers is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
12. The use of reinforcement schedules is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
13. Medication and drug therapy is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
14. Children with **ADHD** should be integrated in general education settings.	□	□	□	□	□	□	□

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree	No opinion or Neutral
15. Only teachers with extensive special education experience can be expected to deal with students with **special education needs** in a school setting.	□	□	□	□	□	□	□
16. The attitude of the staff is an important factor in the successful inclusion of a student with **special needs**.	□	□	□	□	□	□	□
17. Only teachers with extensive special education experience can be expected to deal with students with an **ASD** in a school setting.	□	□	□	□	□	□	□
18. Inclusive education enhances the learning experience of students with disabilities.	□	□	□	□	□	□	□
19. The severity of disability is an important factor in the successful inclusion of a student with **special needs**.	□	□	□	□	□	□	□
20. Only teachers with extensive special education experience can be expected to deal with students with **ADHD** in a school setting.	□	□	□	□	□	□	□
21. Students with **classic autism** are too impaired to benefit from the activities of a regular school.	□	□	□	□	□	□	□
22. A good general education teacher can do a lot to help a student with an **ASD**.	□	□	□	□	□	□	□
23. No discretionary financial resources should be allocated for the inclusion of students with an **ASD**.	□	□	□	□	□	□	□
24. The attitude of the staff is an important factor in the successful inclusion of a student with **ADHD**.	□	□	□	□	□	□	□
25. Students without disabilities can benefit from contact with students with an **ASD**.	□	□	□	□	□	□	□
26. Special schools specifically designed for their needs are the most appropriate placement for students with an **ASD**.	□	□	□	□	□	□	□
27. It is important for children with an **ASD** to receive special education services at school.	□	□	□	□	□	□	□

Section 4: Classroom Behaviors

Please indicate how disruptive the following behaviors might be if exhibited by any student in your classroom:

	Highly Disruptive	Disruptive	Somewhat Disruptive	Slightly Disruptive	Not at all Disruptive
Aggression (to peers or adults).	☐	☐	☐	☐	☐
Aloofness or lack of awareness of what the teacher is doing.	☐	☐	☐	☐	☐
Difficulty in reciprocal conversation.	☐	☐	☐	☐	☐
Eye contact avoidance.	☐	☐	☐	☐	☐
Fear of harmless objects.	☐	☐	☐	☐	☐
High levels of activity.	☐	☐	☐	☐	☐
Inappropriate emotionality (e.g. inappropriate anxiety or inappropriate laughter).	☐	☐	☐	☐	☐
Lack of peer relations.	☐	☐	☐	☐	☐
Non compliance to teacher authority.	☐	☐	☐	☐	☐
Off-task behavior.	☐	☐	☐	☐	☐
Poor peer relations.	☐	☐	☐	☐	☐
Preoccupation with one particular object or toy.	☐	☐	☐	☐	☐
Preoccupation with touching, smelling or tasting objects or people.	☐	☐	☐	☐	☐
Problems with non-verbal behavior (e.g. pointing randomly or using bizarre gestures).	☐	☐	☐	☐	☐
Repetitive, bizarre, or echolalic speech	☐	☐	☐	☐	☐
Resistance and negative reaction to changes in the schedule.	☐	☐	☐	☐	☐
Rudeness in making requests.	☐	☐	☐	☐	☐
Screaming, crying, or tantruming.	☐	☐	☐	☐	☐
Sensitivity to sounds.	☐	☐	☐	☐	☐
Strange or unusual body movements such as finger flicking, spinning, or rocking	☐	☐	☐	☐	☐

Section 5: Classroom Practices

From the following list, please CIRCLE 1) whether YOU have HEARD OF the strategy, 2) whether any TEACHER(S) in your school have USED the strategy, and 3) whether YOU think it is or could be EFFECTIVE **in better including a student with an ASD**:

Strategy	Heard of this?		Used? Choose One			Effective? Choose One			
1. Applied behavior analysis (ABA)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
2. Art therapy	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
3. Assistive technology	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
4. Augmentative and alternative communication (AAC)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
5. Behavior contract	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
6. Choice making	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
7. Direct instruction of social skills	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
8. Discrete trial training (DTT)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
9. Edible reinforcement	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
10. Educating typically developing students about ASD.	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
11. Extra time to complete assignments.	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
12. Facilitated communication (FC)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
13. Floor time	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
14. Functional Behavior Assessment/Analysis (FBA)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
15. Gentle Teaching	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
16. Incidental teaching	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
17. Joint action routines (JARs)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
18. Peer initiation	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
19. Peer tutoring	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
20. Picture exchange communication system (PECS)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective

Strategy	Heard of this?		Used? Choose One			Effective? Choose One			
21. Pivotal response training (PRT)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
22. Play-oriented strategies	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
23. Preferential seating	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
24. Priming techniques	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
25. Prompting techniques	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
26. Providing a student "home base"	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
27. Providing a list of schedule changes for the school day	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
28. Providing a list of teacher expectations for in-class behavior	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
29. Relationship development intervention (RDI)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
30. Scripts (e.g. cognitive scripts)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
31. Sensory integration (SI)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
32. Social stories	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
33. Structured teaching (TEACCH method)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
34. Token economies	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
35. Van Dijk curricular approach	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
36. Verbal reinforcement/Praise	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
37. Visual activity schedules	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective

If there is another strategy you wish to clarify/elaborate on a response from the choices above, please do so in the space below:

_____

_____

_____

_____

_____

_____

_____

Additional notes or comments:

Section 6: Future Involvement in Research

Would you be interested in participating in a focus group discussing issues addressed in this Questionnaire? Yes ☐ No ☐

Phone number _____ Email _____

APPENDIX B

Autism Inclusion Questionnaire – Teacher Form

Section 1: Demographic Information and Experience

Today's Date: _____

School _____ County _____

Sex: Male □ Female □ Age _____

Ethnicity: African American □ Asian American □ Caucasian/White □

Hispanic/Latino □ Native American □ Other □

_____

Teacher Title: General Education □ Special Education □ Specialist □

Paraprofessional □ Resource □ Other □

_____

What is your highest degree earned? High School diploma □ Associate's degree □ Bachelor's degree □

Master's degree □ Specialist's degree □ Doctorate degree □

Time in current position: _____ years _____ months

Please list any prior Educator positions held and the length of time in that position.

1_____

2_____

3_____

Are you **certified** in Special Education? Yes □ No □

If 'No', have you had **training** in Special Education? Yes □ No □

If 'Yes', please explain.

_____

_____

_____

About how many students are in your classroom? _____ How many teachers? _____

Do you currently have any students with an IEP in your classroom? Yes □ No □ If 'Yes', how many? _____

Under which IDEA categories of eligibility are your Special Education students being served? Check all that apply:

□ Autism □ Deaf-Blindness □ Deafness □ Hearing Impairment

□ Mental Retardation □ Multiple Disabilities □ Orthopedic Impairment □ Other Health Impairment

□ Serious Emotional Disturbance □ Specific Learning Disability □ Speech or Language Impairment

□ Traumatic Brain Injury □ Visual Impairment, including blindness

Have you had specific **training** to educate students with an Autism Spectrum Disorder (ASD)? Yes □ No □

If 'Yes', please explain. _____

_____

_____

_____

Have you had specific **experience** working with or educating students with an Autism Spectrum Disorder (ASD)? Yes □ No □

If 'Yes', please explain. _____

_____

_____

_____

Section 2: Knowledge of Autism Spectrum Disorders

Circle TRUE or FALSE for the following questions based on your current knowledge of Autism Spectrum Disorders (ASDs).

Please, DO NOT GUESS. If you are unsure of an answer, please circle DON'T KNOW.

1. The diagnostic criteria for Asperger's Syndrome are identical to High Functioning Autism.	True	False	Don't Know
2. ASDs are developmental disorders.	True	False	Don't Know
3. Genetic factors play an important role in the causes of ASDs.	True	False	Don't Know
4. ASDs exist only in childhood.	True	False	Don't Know
5. Behavior therapy is an intervention most likely to be effective for children with ASDs.	True	False	Don't Know
6. Children with ASDs are very similar to one another.	True	False	Don't Know
7. Early intervention demonstrates no additional benefit to children with an ASD.	True	False	Don't Know
8. If an intervention works for one child with an ASD, it will definitely work for another child with an ASD.	True	False	Don't Know
9. Medication can alleviate the core symptoms of ASDs.	True	False	Don't Know
10. Most children with ASDs have cognitive abilities in the intellectually disabled range.	True	False	Don't Know
11. Most children with ASDs have special talents or abilities.	True	False	Don't Know
12. In many cases, the cause of ASDs is unknown.	True	False	Don't Know
13. The core deficits in ASDs are Impaired Social Understanding, Language Abnormalities, and Impaired Sensory Functioning.	True	False	Don't Know
14. Traumatic experience very early in life can cause an ASD.	True	False	Don't Know
15. With proper intervention, most children with an ASD will eventually "outgrow" the disorder.	True	False	Don't Know

Section 3: Opinions about Inclusive Education

Please mark the response that best describes how you feel about the following statements:

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree	No opinion or Neutral
1. The severity of disability is an important factor in the successful inclusion of a student with **ADHD**.	□	□	□	□	□	□	□
2. Children with an **ASD** should be integrated in general education settings.	□	□	□	□	□	□	□
3. The help of an auxiliary teaching professional (i.e. paraprofessional) is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
4. The academic ability of the student is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
5. The severity of disability is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
6. The student's personality is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
7. The attitude of the staff is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
8. All students with an **ASD** should be included in general education settings.	□	□	□	□	□	□	□
9. Children with **special educational needs** should be integrated in general education settings.	□	□	□	□	□	□	□
10. One on one intervention is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
11. Encouraging students with an **ASD** to interact with typically developing peers is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
12. The use of reinforcement schedules is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
13. Medication and drug therapy is an important factor in the successful inclusion of a student with an **ASD**.	□	□	□	□	□	□	□
14. Children with **ADHD** should be integrated in general education settings.	□	□	□	□	□	□	□

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree	No opinion or Neutral
15. Only teachers with extensive special education experience can be expected to deal with students with **special education needs** in a school setting.	□	□	□	□	□	□	□
16. The attitude of the staff is an important factor in the successful inclusion of a student with **special needs**.	□	□	□	□	□	□	□
17. Only teachers with extensive special education experience can be expected to deal with students with an **ASD** in a school setting.	□	□	□	□	□	□	□
18. Inclusive education enhances the learning experience of students with disabilities.	□	□	□	□	□	□	□
19. The severity of disability is an important factor in the successful inclusion of a student with **special needs**.	□	□	□	□	□	□	□
20. Only teachers with extensive special education experience can be expected to deal with students with **ADHD** in a school setting.	□	□	□	□	□	□	□
21. Students with **classic autism** are too impaired to benefit from the activities of a regular school.	□	□	□	□	□	□	□
22. A good general education teacher can do a lot to help a student with an **ASD**.	□	□	□	□	□	□	□
23. No discretionary financial resources should be allocated for the inclusion of students with an **ASD**.	□	□	□	□	□	□	□
24. The attitude of the staff is an important factor in the successful inclusion of a student with **ADHD**.	□	□	□	□	□	□	□
25. Students without disabilities can benefit from contact with students with an **ASD**.	□	□	□	□	□	□	□
26. Special schools specifically designed for their needs are the most appropriate placement for students with an **ASD**.	□	□	□	□	□	□	□
27. It is important for children with an **ASD** to receive special education services at school.	□	□	□	□	□	□	□

Section 4: Classroom Behaviors

Please indicate how disruptive the following behaviors might be if exhibited by any student in your classroom:

	Highly Disruptive	Disruptive	Somewhat Disruptive	Slightly Disruptive	Not at all Disruptive
Aggression (to peers or adults).	☐	☐	☐	☐	☐
Aloofness or lack of awareness of what the teacher is doing.	☐	☐	☐	☐	☐
Difficulty in reciprocal conversation.	☐	☐	☐	☐	☐
Eye contact avoidance.	☐	☐	☐	☐	☐
Fear of harmless objects.	☐	☐	☐	☐	☐
High levels of activity.	☐	☐	☐	☐	☐
Inappropriate emotionality (e.g. inappropriate anxiety or inappropriate laughter).	☐	☐	☐	☐	☐
Lack of peer relations.	☐	☐	☐	☐	☐
Non compliance to teacher authority.	☐	☐	☐	☐	☐
Off-task behavior.	☐	☐	☐	☐	☐
Poor peer relations.	☐	☐	☐	☐	☐
Preoccupation with one particular object or toy.	☐	☐	☐	☐	☐
Preoccupation with touching, smelling or tasting objects or people.	☐	☐	☐	☐	☐
Problems with non-verbal behavior (e.g. pointing randomly or using bizarre gestures).	☐	☐	☐	☐	☐
Repetitive, bizarre, or echolalic speech	☐	☐	☐	☐	☐
Resistance and negative reaction to changes in the schedule.	☐	☐	☐	☐	☐
Rudeness in making requests.	☐	☐	☐	☐	☐
Screaming, crying, or tantruming.	☐	☐	☐	☐	☐
Sensitivity to sounds.	☐	☐	☐	☐	☐
Strange or unusual body movements such as finger flicking, spinning, or rocking	☐	☐	☐	☐	☐

Section 5: Classroom Practices

From the following list, please CIRCLE 1) whether you have HEARD OF the strategy, 2) whether you have USED the strategy, and 3) whether you think it is or could be EFFECTIVE **in better including a student with an ASD**:

Strategy	Heard of this?		Used? Choose One			Effective? Choose One			
1. Applied behavior analysis (ABA)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
2. Art therapy	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
3. Assistive technology	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
4. Augmentative and alternative communication (AAC)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
5. Behavior contract	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
6. Choice making	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
7. Direct instruction of social skills	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
8. Discrete trial training (DTT)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
9. Edible reinforcement	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
10. Educating typically developing students about ASD.	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
11. Extra time to complete assignments.	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
12. Facilitated communication (FC)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
13. Floor time	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
14. Functional Behavior Assessment/Analysis (FBA)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
15. Gentle Teaching	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
16. Incidental teaching	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
17. Joint action routines (JARs)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
18. Peer initiation	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
19. Peer tutoring	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
20. Picture exchange communication system (PECS)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective

Strategy	Heard of this?		Used? Choose One			Effective? Choose One			
21. Pivotal response training (PRT)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
22. Play-oriented strategies	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
23. Preferential seating	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
24. Priming techniques	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
25. Prompting techniques	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
26. Providing a student "home base"	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
27. Providing a list of schedule changes for the school day	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
28. Providing a list of teacher expectations for in-class behavior	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
29. Relationship development intervention (RDI)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
30. Scripts (e.g. cognitive scripts)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
31. Sensory integration (SI)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
32. Social stories	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
33. Structured teaching (TEACCH method)	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
34. Token economies	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
35. Van Dijk curricular approach	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
36. Verbal reinforcement/Praise	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective
37. Visual activity schedules	Yes	No	Currently using	Used in the past	Never used	Very Effective	Effective	Somewhat Effective	Not Effective

If there is another strategy you use in your classroom or you wish to clarify/elaborate on a response from the choices above, please do so in the space below (or on the back of this page):

_____

_____

_____

_____

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Additional notes or comments: _____

Section 6: Future Involvement in Research

Would you be interested in participating in a focus group discussing issues addressed in this Questionnaire? Yes □ No □

Phone number _____ Email _____