ATTITUDES OF PRESERVICE TEACHERS TOWARDS THE INCLUSION OF CHILDREN WITH AUTISM SPECTRUM DISORDERS

by

NICOLE ELOISE BARNED

(Under the Direction of Nancy F. Knapp and Stacey M. Neuharth-Pritchett)

ABSTRACT

Thirty-nine preservice teachers' registered in an introductory course into Educational Psychology completed a Modified Autism Inclusion Questionnaire to (1) examine their attitudes towards ASD and inclusion; (2) investigate their knowledge about ASD; and (3) investigate the extent to which preservice teacher variables (e.g. experience) influence their attitudes towards ASD and inclusion. Fourteen participants were also interviewed to examine the consistency of their quantitative responses and ascertain their attitudes and rationales.

The results indicated that preservice teachers in this sample generally had a positive attitude towards the inclusion of students with ASD in a regular classroom setting; they had limited general knowledge of ASD and the strategies for children with ASD. Furthermore, variables such as years in college, experience, intended level to teach, and teaching area were found to have no statistically significant influence on their knowledge. The implications and future research directions are discussed below.

INDEX WORDS: Preservice teachers Attitude, Autism, Inclusion, Knowledge

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NICOLE ELOISE BARNED

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NICOLE ELOISE BARNED

Major Professors:	Nancy F. Knapp and Stacey M. Neuharth-Pritchett
Committee:	Jonathan M. Campbell Cynthia O. Vail

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
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DEDICATION

This thesis is dedicated to my mother, Margaret. She has provided unconditional love and support throughout my life. My accomplishments are hers and we have accomplished this one together. Thank you, Mommy.

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I would like to extend my sincere gratitude to all those who have supported me throughout this process. To my advisors, Dr. Nancy F. Knapp, Dr. Stacey M. Neuharth-Pritchett, and committee members Dr. Cynthia Vail and Dr. Jonathon Campbell, thank you for guidance, time, and assistance.

To my family and friends, thank you for your encouragement and never-ending support.

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CHAPTER 1

INTRODUCTION

Autism is considered to be one of the most frequently occurring developmental disorders in the United States (Schwartz & Drager, 2008). Concerns about the rates of children diagnosed with disabilities on the Autism Spectrum have promoted examination of its prevalence. Data collected from special education databases for children from 6 to 17 years indicate increases in the prevalence of Autism Spectrum Disorders (ASD) for successively younger cohorts of children, with increases most dramatic for children in cohorts from 1987 to 1992. After 1992, increases still existed but were not as steep, suggesting a slowing of the autism prevalence rate (Newschaffer, Falb, & Gurney, 2005). Concerns about the correct classification of the diagnosis have also been advanced, where Shattuck (2006) noted only 17 states in the United States had ASD prevalence rates within the range of epidemiological estimates with corresponding decreases in classification of mental retardation. With regard to mental retardation, King and Bearman (2009) found that changes in practice toward diagnosing autism as opposed to mental retardation accounted for one-quarter of the observed increase in prevalence in California from 1992 to 2005. Data released by the Centers for Disease Control and Prevention's Autism and Development Disabilities Monitoring Network in 2009 reveals that approximately 1 in 100 8-year-old children, across various communities in the United States, have been diagnosed with some form of autism (Tsouderos, 2009). According to the National Center on Birth Defects and Developmental Disabilities (2006), ASD was ranked as the sixth most commonly classified disability in the United States.

Autism Spectrum Disorder (ASD) is defined as a spectrum of psychological conditions characterized by impairments in social, communicative, and behavior development that typically are present before the age of three years and that often are accompanied by abnormalities in cognitive functioning, learning, attention, and sensory processing (Yeargin-Allsopp, Rice, Karapurkar, Doernberg, Boyle, & Murphy, 2003). ASD is typically seen as including autism, pervasive developmental disorder-not otherwise specified (PDD-NOS), and Asperger's Syndrome, with symptoms that range from severe impairments to mild delays.

The implementation of the Individuals with Disabilities Education Improvement Act (IDEIA, 2004) has resulted in the inclusion of children with ASD and other special needs in general education classrooms. In 2006, the Data Accountability Center, using IDEIA data, reported that 35,111 children ages 3-5 and 224,596 children ages 6-21 were served under the ASD classification for special education services (Department of Health and Human Services Center for Disease Control and Prevention, 2008). Between 1994 and 2006, the number of 6- to 17-year-old children classified as having ASD in public special education programs increased from 22,664 to 211,610. It is important to note that not all children with ASD receive special education services under IDEIA classification, and therefore it is likely that the figures from the government report are underestimates of the number of children with ASD in public education programs.

With the increase in the number of children with special needs entering schools and included in general education classrooms, individuals who are serious about entering the teaching profession need to understand the role they play in facilitating integration to the general education classroom and teaching children with special needs, including ASD. The challenges of including children with ASD are many because of the nature and potential severity of the

disability (Simpson, de Boer-Ott, Smith-Myles, 2003). Preservice teachers' knowledge and attitudes toward children with special needs and the inclusion process will influence their performance as teachers, the future of integration, and the quality of education received by children with special needs (Al Faiziz, 2007; Wilczenski 1999). Romi and Leyser (2006) emphasized that the success of inclusion depends on many factors, including revisions and changes in policies, administrative structures, availability of resources, and qualified classroom teachers. While opportunities to work with children with ASD have likely been experienced by many inservice teachers, preservice teachers may have more limited contact and experiences with children with ASD. Like their inservice peers, preservice teachers should possess positive attitudes and knowledge about ASD and other disabilities (Simpson, Whelan, & Zabel, 1993). The current study is an examination of the preparedness of a specific group of preservice teachers in relation to their knowledge of and attitudes toward the inclusive education of children with ASD.

CHAPTER 2

LITERATURE REVIEW

This chapter presents a review of literature specifically focused on further describing ASD, suspected causes of ASD, ASD and inclusive practices, and educators' (inservice and preservice) knowledge of ASD, as well as their attitudes as toward inclusion of children with ASD in the general education setting.

Defining Autism/ASD

Contemporary definitions of autism are rooted in the work of two pioneers, Dr. Leo Kanner and Dr. Hans Asperger. Kanner, in 1943, studied 11 children and identified symptoms of a neurological condition which he termed *early infantile autism* or childhood autism, a definition that is considered the classic definition of autism. Kanner identified symptoms of impaired social interaction, lack of imaginative play, and problems with verbal communication as markers of ASD. Concurrently, in 1944, German scientist, Dr. Hans Asperger described a similar pattern of behavior and abilities which he referred to as autistic psychopathology (self-personality disease), ultimately later named by Lorna Wing as Asperger's Syndrome. Asperger described a milder form of autism in which the four children from his study had developed an intense obsession in a special interest, lacked the ability to demonstrate empathy and social interaction, and had clumsy movements. Children with Asperger's also had higher IQ's and more advanced language skills. They were seen as "little professors" because they were able to speak in great detail about their special interests. Asperger's Syndrome is considered to be high-functioning autism. While defined nearly three-quarters of a century ago, these two descriptions of autism represent two of the five pervasive developmental disorders described in the American Psychiatric Association's

Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR (2000). Collectively, these disorders (National Institute of Mental Health, 2004) are described by varying degrees of impairment in communication skills (both spoken and unspoken language – eye gaze, pointing and smiling), social interactions (showing and sharing emotions, understanding others' emotions and thoughts, beginning and maintaining conversation) and restricted, repetitive and stereotyped patterns of behavior (repeating words or patterns, following routines, playing or using the same objects or toys). The autistic disorder (autism) diagnosis is found in all races, nationalities, social classes, and educational levels (Massachusetts Department of Education, 1998).

Causes of ASD

While the medical, psychiatric, psychological, and education communities have developed strategies and interventions for children diagnosed with autism, there is no agreed upon physiological cause of ASD. Because of this lack of formal definition as to what the physiological origin of the disorder is, there have been a number of suppositions concerning ASD's origins. Poor parenting style (i.e., *refrigerator parents* - the inability of the parents to show affection to their child) was once assumed to be the cause of ASD (Helps et al, 1999). While the field has eliminated some questionable suppositions for the cause of autism, it does recognize that the etiology of ASD seems to be multifactorial (Thomas, 2005). Specifically, research has focused on biological factors in four areas as potential underlying causes of ASD: neurological, biochemical, problems during pregnancy/and birth, and genetic abnormalities (Mackowiak, 2000). Neurological studies have suggested that disturbances in neurochemical systems, specifically dopaminergic and serotonergic, may suggest an association between neurotransmitters and ASD (Potenza & McDougle, 1997). From a biochemical focus, Fombonne's (2001) study summarized the evidence against the assumption that there is a link

between the measles, mumps and rubella (MMR) vaccine and autism. In 2004, the Institute of Medicine released a report stating they found no evidence of a connection between thimerosal (a mercury-based preservative used in vaccinations) and autism (NIMH, 2004).

Problems during pregnancy and child birth have also been cited as potential antecedents to autism. Baird, Slonims, & Cass (2003) reported that autism has been recognized as an endpoint of several organic etiologies including "prenatal insults such as rubella infection, untreated metabolic disorders, such as phenylketonuria, anticonvulsants taken in pregnancy, localized lesions as in tuberous sclerosis and postnatal infections such as encephalitis" (p. 488). Finally, autism has been associated with genetic concerns such as abnormal brain development (Akshoomoff, Pierce, & Courchesne, 2002; Courchesne, Carper, & Akshoomoff, 2003).

Despite the number of potential causes of ASD, one thing is clear: while effective treatment differs for each child with ASD, research demonstrates that early intervention is an important contributing factor to the successful cognitive, social, emotional, and behavioral development of children with ASD (Children's Defense Fund, 2000).

Educator's Knowledge and Attitudes Related to Inclusion of Students with ASD

The Individuals with Disabilities Education Improvement Act (IDEIA, 2004) is the primary federal legislation that mandates equal access to a free and appropriate education for children with disabilities in public schools. Under this Act, eligible children not only have the right to this free appropriate public education, but also to an individualized education program, inclusion in statewide and district-wide assessment programs, placement in the least restrictive environment, and transitional services upon completion of formal schooling. Prior to age three, other federal legislation provides for early intervention services (birth to age 3) and access to infant and toddler programs for children with special needs. Since the passage of PL 94-142,

more and more children with ASD have been integrated into the general education public school system.

Inservice educators. A number of studies have been conducted examining teachers' knowledge about children with ASD, as well as studies that have investigated teachers' attitudes about working with children with autism and with disabilities in general. Many of these studies have been conducted in countries other than the United States.

Helps, Newsom-Davis and Callias (1999) investigated knowledge about and understanding of autism among teaching and support staff from inclusive and non-inclusive preschools in the United Kingdom. Mental health professionals working in the field of autism comprised the control group. Using a modified version of the Stone Autism Questionnaire (Stone, 1987), participants were asked to specify factors they thought were commonly associated with a diagnosis of autism, to describe the difficulties they faced in working with children with autism, and to provide information about their level of training in working with children with autism. The results of this study indicated that teachers held different views of children with autism than did mental health professionals. These differences centered on describing important diagnostic characteristics of the disorder and levels of training about autism. While differences were found on some variables investigated in the study, results also indicated the teachers and mental health professionals both lacked a basic theoretical understanding of autism, perhaps resulting from lack of training regarding autism. Despite their lack of theoretical knowledge, participants who worked in special needs environments had remarkable understanding of the appropriate strategies that are used in facilitating learning for children with autism.

In another study conducted in the United Kingdom, York and colleagues (1999), investigated teachers' awareness and knowledge of Fragile-X Syndrome, Down's Syndrome, and

Autism. Using a modified version of the Wilson & Mazzocco (1993) questionnaire, with the inclusion of questions addressing Fragile-X Syndrome and Autism, the authors found that many of the teachers had poor knowledge and awareness of Fragile-X Syndrome, but were able to identify a variety of features typical of Down's Syndrome and Autism. In addition, knowledge about learning styles of children with all these conditions was poor. The authors found that knowledge about learning styles was associated with having had experience teaching a child with a specific disability.

Mavropoulou & Padeliadu (2000), using their own questionnaire, surveyed general and special education teachers. All teachers had a minimum of five years' teaching experience. Only special education teachers had attended an introductory course on the diagnosis and educational treatment of autism in their first term. Special education teachers did not receive special experience or training before beginning their in-service training. All participants completed a questionnaire designed to investigate both special and general education teachers' perception about autism, with questions centered on the etiology, general knowledge, treatment, and behavioral characteristics of autism.

Results revealed that the majority of the teachers possessed adequate general knowledge of autism although there was confusion regarding the onset of the condition. Teachers were aware of the 'autistic continuum' and the distinct characteristics of the disorder; however, their knowledge about the causes of autism was outdated. Teachers believed in the psychogenic explanation of autism, in which the condition arises due to a poor parent-child relationship. In particular, general education teachers considered psychotherapy to be beneficial for treating children with autism. The survey revealed that special education teachers were more likely to correctly identify the specific characteristics of autism. Both general and special education

teachers were able to identify different instructional priorities in the treatment of autism. General education teachers had a higher affinity for promoting mostly affective relationships with others, while special education teachers placed greater emphasis on specific educational goals, for example, expression of desires using speech. Both groups of teachers agreed that autism cannot be cured. Fifty-five percent of general education teachers and 37 % of special education teachers had positive attitudes towards the idea of integration. The authors suggested a need for inservice training for all teachers focused on autism-specific characteristics.

Research conducted by McGregor and Campbell (2001) explored the attitudes, opinions, experience, and ideas of specialist and mainstream teachers in Scotland regarding the partial or full integration of children with autism into mainstream schools. Two questionnaires, one for special educators and the other for general educators, were constructed to assess knowledge, attitudes and beliefs of integration for autistic children. Analyses revealed that the level of training in autism was significantly low even among specialist teachers; only 50% of these teachers reported that they had received specific training in autism. Approximately 68% of mainstream teachers received support from auxiliary staff; however the staff received inadequate training and guidance in autism and was therefore considered to be unhelpful. Fifty percent of experienced teachers agreed that full integration was not suitable for all children diagnosed with autism because of the unpredictability of the mainstream classroom environment and the different teaching styles that would have to be employed by teachers who would be working with children with autism. The authors suggested the need for more training (theoretical, practical and in-service) and guidance for both specialist and mainstream staff in order to better serve and educate children with autism, including those along the full range of the autism spectrum, at different ages, as well as better support for integration.

Al-Faiz and colleagues (2007) examined the attitudes of 231 elementary school teachers toward the inclusion of children with autism in public education in Riyadh, Saudi Arabia. The authors used a questionnaire to investigate whether 11 variables (gender, citizenship, age, marital status, level of education, education age, teaching field, teaching experience, training program, family/relative with autism, and exposure to students with disabilities) influenced teachers' attitudes. The results indicated that education area, teaching experience, and family/relative with disability were the three significant factors that influenced teachers' attitudes.

Hendricks (2008) evaluated 498 special education teachers in Virginia to ascertain their level of knowledge of autism and implementation of educational practices which are beneficial for children with autism, and to determine areas of training needed by these special educators. Using the Needs Assessment of Special Educators who Serve Students with Autism Survey, Hendricks found that participants had a low to intermediate level of knowledge about ASD. Teachers reported greater knowledge in general autism and lower levels of knowledge in strategies used for sensory motor development and social skills. Regarding implementation practices (appropriate assessment and program planning for individuals with autism), the survey results indicated the highest level of implementation in the area of individualization and support strategies. Strategies that addressed social skills were reported to be the least implemented by teachers.

Intermediate training, specifically training in social skills development was indicated as a necessity for participants; while the least needed areas of training were individualization and support strategies. The author also found that training was not related to the level of knowledge of ASD as reported by teachers. Area of endorsement, educational level, educational setting,

number of students with autism taught, and students' learning characteristics were found to have a relationship to the level of knowledge and implementation reported by the teachers.

Segall (2008) investigated educational professionals' (general and special education teachers, education administrators) experiences, knowledge, attitudes towards inclusion, and classroom practices in relation to ASD. Using the Autism Inclusion Questionnaire, he found that educational professionals had a general positive attitude towards inclusion of students with ASD in general education settings. However, 75% of the sample agreed that full inclusion was not appropriate for all children with ASD. The number of inclusion practices known to and used by educational professionals was better predicted by experience, rather than knowledge and attitudes. General education teachers were found to have the least experience with ASD and awareness of inclusion strategies; although special education teachers did not differ significantly. Results suggested the need for training programs or in-service presentations that will provide knowledge of ASD for teachers, and that teachers should have more contact with children with ASD to strengthen their knowledge of ASD and the strategies used in educating such children.

Prospective/preservice teachers. A paucity of research exists on preservice teachers' knowledge and attitudes toward inclusive education of children with autism. While there is some research about preservice teachers' attitudes towards inclusive education of special needs children in general, few studies have specified autism as the main condition of interest. This section of the literature review will focus on the few studies that have investigated preservice teachers' knowledge and attitude toward the inclusive education of children with autism.

Scruggs & Mastropieri (1996) conducted a research synthesis on teacher perceptions of mainstreaming/inclusion. From the review of the literature the authors found that most preservice and inservice general and special education teachers felt they were able to teach children who

required minimal assistance, such as mild sensory, physical, or learning disabilities; however, only a few teachers suggested that they were capable of teaching children with moderate to severe conditions (severe sensory, physical, or intellectual disabilities). The authors also reported that coursework can increase the awareness of techniques for mainstreaming. Leyser (1988) found that preservice undergraduate students' attitudes became more positive after receiving extended training, which was evidenced by the amount of time taken to conduct tasks with students with disabilities in the classroom.

Another review of the literature on teacher attitudes towards integration and inclusion by Avaramidis & Norwich (2002) found that mainstream teachers had positive attitudes towards general inclusion, but no evidence was found of an overall acceptance of total inclusion. Teachers' attitudes towards inclusion were strongly influenced by the nature and severity of a child's disability. The authors mentioned a study by Ward & Le Dean (1996) who investigated preservice teachers in Australia and found that although they had positive attitudes towards general integration, they differentiated between the different types of special needs that should receive integrated education. This finding was also true for a study conducted by Reber, Marshak and Glor-Scheib (1995) on preservice teachers' attitudes toward the inclusion of special needs children. The authors studied three groups of students enrolled in a large comprehensive teacher education program and found that the type of academic preparation had an impact on attitudes of students in teacher preparation programs. Students who participated in a guided practicum conveyed significantly more positive attitudes toward including students with disabilities into regular classroom settings, compared to the other two approaches. This study also found that preservice teachers' attitudes differed significantly depending on the nature of the disability. Children with orthopedic disabilities (requiring the use of a wheelchair) received the most

positive attitudes from all participants. Children with seizure disorders received the most negative attitudes from all participants, while children with behavior disorders fared only slightly better. Autism also elicited negative attitudes. Overall, however, preservice teachers were generally welcoming of the opportunity for inclusion and regarded inclusion as fair.

Purpose of Present Study

This review of the literature shows that there is insufficient research on preservice teachers' knowledge of and attitudes toward the inclusive education of students with ASD. The literature above suggests the need for training programs to improve knowledge of children with disabilities and attitudes towards the inclusion of these children. Therefore the current study attempts to gain an understanding of whether preservice teachers have knowledge of autism and are developing positive attitudes towards inclusion. The present study also seeks to provide information on whether training and experience influence preservice teachers' attitudes towards and knowledge about children with autism.

Children diagnosed with autism, on entering school, provide a challenge for teachers because of their unique learning and social support needs. Teachers of students with ASD should have knowledge of, and a positive attitude towards children with ASD, in order to create and provide a successful learning environment. Previous research has examined the relationship among experience, training, and knowledge of ASD as it relates to practicing teachers and staffs' attitude towards children with ASD. It is also important to determine the effect of these variables on preservice teachers' attitude towards children with ASD. The results from this study will provide valuable information for selecting and training teachers for the inclusive education of children with ASD. Educators, university faculty, and curriculum designers will also find this information useful, as it can be used to assess preservice teachers' current training and

preparation, in order to develop more effective curriculum and instruction in the area of special needs and ASD. The purposes of this study are to (1) examine preservice teachers' attitudes towards ASD and inclusion; (2) investigate their knowledge about ASD; and (3) investigate the extent to which experience; training and knowledge of ASD influence preservice teachers' attitudes towards ASD and inclusion. This study will therefore seek to answer the following research questions:

1. What do preservice teachers know about ASD and are there differences among their knowledge as it relates to their years in college, experience, intended level to teach, and area of study?
2. Are preservice teachers aware of classroom strategies that are effective for students with ASD?
3. What are the attitudes of preservice teachers toward the inclusion of children with ASD and are there differences among their attitudes as it relates to their years in college, experience, intended level to teach, area of study, and knowledge of ASD?

CHAPTER 3

METHOD

Research Design

The current study utilized both questionnaires and interviews for data collection. Data were collected using two distinct phases. In Phase 1, questionnaire data were collected and analyzed with the purpose of providing a general understanding of the research problem. Phase 2 included the collection and analysis of interview data to help refine, explain or elaborate the statistical results from the first phase. These interview data were used to explore the results from the questionnaires in more detail, as well as provide explanation(s) for unexpected results that emerged (Ivankova, et al. 2006; Morse, 1991).

Sample

Students (n = 389) registered in Exploring Learning and Teaching (EPSY2130) during the second semester of the 2008-2009 academic year at the University of Georgia, were targeted to participate in this study. Students registered in this course were chosen for this study because they are considered to be potential future teachers. According to Knapp & Harper (2009), students who take this course learn about motivation, learning theories, and various environmental and developmental factors with a focus on teaching diverse students in various learning settings. Despite this focus on student diversity, EPSY2130 does not offer specific instruction on autism or inclusion, since a course in special education (SPED 2000) is simultaneously or subsequently taken by all of the students who plan to become teachers.

Phase 1. Of the population of students enrolled in EPSY 2130, 62 students initially agreed to participate in the study. Of these 62, 39 students actually completed the questionnaire

(a 62.9% return rate). Therefore, the final sample for Phase 1 consisted of 37 females (94.9%) and 2 males (5.1%). Participants were asked to supply their ages within a range of years. Of the sample, 94.9% were 18-24 years old, and 2.6% were 25-30 years of age. One participant did not supply an age. The sample was divided with regard to their specific year in college. Within the sample, 38.5% (n = 15) were freshmen, 35.9% (n = 14) were sophomores, 20.5% (n =8) were juniors, and 5.1% (n = 2) were seniors.

Participants were also asked to respond to questions regarding their levels of experience with children with ASD. Response regarding experience with children with ASD was 48.7% of the sample (n = 19), while 51.3% (n = 20) had no experience. Only one participant indicated any specific training in teaching children with ASD. Additional demographic data for the sample were collected including intent to teach, intended areas of teaching focus, and intended ages to teach. These data are displayed in Table 1.

Table 1

Participants' Plans to Teach

Demographic Variables	*n*	%
Intent to Teach		
Yes	38	97.4
No	1	2.6
Intended Teaching Areas		
Social Studies/History	3	7.7
Mathematics	3	7.7
Language Arts	1	2.6
Science	2	5.1
General/Elementary Education	13	33.3
Special Education	3	7.7
Other (speech pathology, Art, etc.)	7	17.9
Undecided (chose more than one area)	5	12.8
No report	2	5.1
Intended Teaching Levels		
Elementary School (Pre K-8)	10	25.6
High School	4	10.3
Undecided (choose more than one level)	24	61.5
No report	1	2.6

Phase 2. Of the 22 participants who agreed to be interviewed, 14 persons were available at times convenient to both the participant and researcher. All interview participants were female, with 13 (92.9%) 18-24 years of age and 1 participant 25-30 years of age. The participants ranged in year in school from freshmen to seniors. Specifically, 5 participants were freshmen, 4 were sophomores, 3 were juniors, and 2 were seniors. All but one participant intended to teach. Their intended teaching areas included social studies/history, mathematics, science, elementary education, and special education. One participant was pursuing an associated area in education (speech pathology), and one participant was undecided about her area of specialty (i.e. special or general education). No interview participant noted involvement with specific ASD training. Eight interview participants indicated that they had some level of experience with children with ASD, and six indicated no experience.

Data Collection

Instruments.

Phase 1: Modified Autism Inclusion Questionnaire (MAIQ). A modified version of the Autism Inclusion Questionnaire (AIQ) (Segall, 2008) was used to obtain data. This instrument contains items on experience with, attitudes toward, and knowledge about children with ASD. Segall developed the AIQ in order to assess the experience, knowledge, attitudes and current practices of educational professionals (special and general educational teachers, and school administrators) as they related to the inclusion of students with ASD. Items on this questionnaire were adapted from several surveys and sources (Segall, 2008), and the questionnaire contained six sections: Demographic Information and Experience, Knowledge of Autism Spectrum Disorders, Opinions about Inclusive Education, Classroom Behaviors and Classroom Practices. The current study used a modified version of the original questionnaire (MAIQ), with a

reduction in the number of sections and some modification and addition of questions, in order to more accurately address the characteristics of preservice teachers, as opposed to those already working in education (see Appendix A).

The MAIQ consisted of five sections. In the first section, general information was elicited regarding demographic information and experience. Questions were asked to determine preservice teachers' intended area of teaching focus, year of study, specific experiences with people with ASD, and specific training in educating students with ASD, along with demographic variables such as gender and age.

The second section was designed to assess preservice teachers' knowledge of ASD. Fifteen true/false statements were provided ("don't know" was also an available option) to measure ASD knowledge in three areas: diagnosis and symptomatology (how ASD is identified and the signs, symptoms and characteristics of the disorder), treatment (procedures being used to treat ASD), and etiology (causes of ASD) (Segall, 2008). Participants were asked to indicate their level of knowledge as it relates to the characteristics of the disorder and were asked to answer the questions based on their most recent knowledge of ASD.

The third section elicited participants' opinions about inclusive education. Participants were asked to respond on a 6-point Likert scale (ranging from "strongly agree" to "strongly disagree") to statements related to their (a) evaluation of the importance of various factors for successful inclusion, (b) attitudes towards inclusive education in general and as it relates to children with ASD in particular and (c) attitudes towards ADHD or special education needs. A seventh option, "No opinion or neutral response" was also included.

In the fourth section, participants were asked to identify whether they had heard of 37 strategies, intervention and practices that could be considered useful in the inclusion of a child

with ASD in the general education setting (Segall, 2008). They were also asked to rate the extent to which the use of these strategies would be effective for inclusion. Reponses ranged from "very effective" or "not effective," and also allowed a respondent to answer "I don't know". The final section of the questionnaire contained two questions that offered participants the opportunity to participate in a short interview and future research.

Content validity for the Autism Inclusion Questionnaire was obtained through the use of previous studies (Segall, 2008). A validation study on the original instrument was also conducted using researchers and experts in the field of ASD. Eighty-three percent of knowledge items were correctly answered by autism experts, while researchers answered 73 percent correctly. These results were factored into Segall's construction of the final instrument, which also appears to be internally reliable with an alpha of .86 (Segall, 2008).

Phase 2: Interviews. Interviews were conducted at least a week after the completion and collection of the questionnaire data. The interview focused on examining the consistency of the questionnaire responses and further investigating attitudes and values of the participants in relation to classroom inclusion of students with ASD. The use of semi-structured, open-ended questions based on interviewees' answers on the MAIQ was intended to provide information on authenticity and credibility of participants' responses, as described in Preissle, 2008.

Procedures

***Phase 1: Administration of the MAIQ*.** Through purposive sampling (Neuman, 1999), 389 students registered in EPSY 2130: Exploring Learning and Teaching at the University of Georgia in the fall of 2008 were targeted for this study. I contacted the instructors of the course and, based on permission received, I visited 13 classrooms to make a brief presentation on the purposes and procedures for the study, answer any questions raised, and solicit participants.

Students indicating an interest in participating were given consent forms and asked to provide their email addresses, and sign and date the consent forms, returning completed forms to me either at the end of the class period or at a later date. This was done because, due to instructional time constraints, EPSY 2130 course policy is not to permit collection of data for outside studies during class time. While student participation in this study was completely voluntary, and it was made clear that participation or non-participation would in no way affect their work or grade in ESPY 2130, students were offered incentives for participating in both phases of this research. The names of all students who agreed to participate in Phase 1 of the study and actually completed and returned the MAIQ questionnaire were entered into a raffle drawing for a 50 dollar American Express gift card. Each participant that was interviewed received one of two 5 dollar gift cards for local businesses.

Immediately upon receipt of a completed consent form, I sent the modified version of the Autism Inclusion Questionnaire via email to each participant. Participants completed the questionnaire independently and returned them to me via email as well; completion of the questionnaires was estimated to take approximately fifteen to twenty minutes. Volunteers who did not return their questionnaires within (time period) received up to three reminders via email to complete and return the MAIQ before Phase 1 of data collection was considered to be complete. Each questionnaire received was assigned a code to ensure participants' identities were protected. These codes were also used as a reference for contacting participants for the follow-up interview.

Phase 2: Interview procedures. Interviews were conducted after all questionnaires had been completed and collected. Participants who had indicated their willingness (in the final section of the MAIQ) were contacted via email and provided with a list of dates and times from

which they could schedule their interviews. A location for the interviews was suggested by the researcher; however, participants had the option to select a different venue, although none did. The interviewee and I (as the interviewer) were the only persons present during each interview.

Interviews lasted for approximately thirty minutes and were conducted at least a week after the interviewees had completed the MAIQ. Due to this time lapse, interviewees were given a few minutes before the start of the interviews to look over their completed questionnaires, after which I asked some targeted questions regarding their answers. In specific, I asked about their general responses to the MAIQ, and then asked interviewees to expand on selected Knowledge-related answers in Sections 2 and 4, and on any conflicting or extreme responses (e.g., "strongly agree" or "strongly disagree") in Section 3 (Opinions and Attitudes towards Inclusion). All interviews were audio-recorded using a digital recorder and transcribed at a later date for analysis.

Data Analysis

Phase 1 data. Data from the questionnaires were entered and analyzed using the Statistical Package for Social Sciences software (SPSS Version 16). Descriptive statistics (frequencies and percentages) were used to describe the demographic characteristics of the sample. Reliability was studied using Cronbach's alpha. Differences between the groups were determined by calculating the level of distribution of the average attitudes of the respondents, the mean and standard deviations. Differences between the means of the group according to the variables of the study were calculated using the *t* test or analysis of variance procedure. Results were reported using the significance level of 0.05.

Phase 2 data. Data from the interviews were transcribed verbatim using the Transcriber 1.5.1 software. The information provided from the analysis and interpretations of the transcripts

were compared with the answers from the questionnaire in order to assess the consistency of the results and provide explanations for significant findings. During the interview participants also had the opportunity to provide a detailed explanation or description of their attitudes towards children with ASD and inclusion. Transcribed sections pertaining to interviewees' responses to specific questions on the MAIQ were organized by section and used to capture interviewees' understandings of the MAIQ questions and more exact meanings of their responses. Additional comments or unusual responses were also identified and organized under themes that emerged during analysis. Both of these analytic processes were facilitated through the use of, ATLAS-TI, a computer program for the analysis of qualitative data. Participants' real names were not used throughout this analysis; instead they were given ethnic and gender appropriate pseudonyms. Thus, the interview data provided richness and detail to the study by qualifying the MAIQ results and further exploring preservice teachers' views on their current preparation for teaching or working with children with ASD.

CHAPTER 4

RESULTS

Phase 1: Questionnaire Results

General knowledge of ASD.

***Overall findings*.** Table 2 provides information on participants' responses to questions relating to the knowledge of ASD symptoms and diagnosis, treatment and intervention, and etiology found in the second section of the MAIQ. Overall, preservice teachers in this study demonstrated a fairly low to moderate level of knowledge; there was a mean score of 5.79 (out of 15) with a standard deviation of 3.0 on the knowledge section of the questionnaire. The most commonly known responses were "ASD exists only in childhood" with 82% of participants reporting the statement to be false; "If an intervention works for one child with an ASD, it will definitely work for another child with an ASD," 85% of participants correctly acknowledged the statement to be false. The following statements yielded the highest number of incorrect responses: "The diagnostic criteria for Asperger's Syndrome are identical to High Functioning Autism" (85%); "Core deficits in ASDs are impaired social understanding, language abnormalities, and impaired sensory functioning" (100%); "Medication can alleviate the core symptoms of ASDs (80%)." (See Table 2 for complete results).

Table 2

Pre-service Teachers' Performance on the Knowledge of Autism Spectrum Disorders

(n = 39)

Knowledge of ASD Items	True *n*(%)	False *n*(%)	Don't Know *n*(%)
Symptoms and Diagnosis			
The diagnostic criteria for Asperger's Syndrome are identical to High Functioning Autism.	3 (8%)	6(15%)*	30(77%)
ASDs are developmental disorders.	14(36%)*	5(13%)	20(51%)
ASDs exist only in childhood.	1(3%)	32(82%)*	6(15%)
Children with ASDs are very similar to one another.	1(3%)	25(64%)*	13(33%)
Most children with ASDs have cognitive abilities in the intellectually disabled range.	2(5%)*	10(26%)	27(69%)
Most children with ASDs have special talents or abilities.	16(41%)	7(18%)*	16(41%)
The core deficits in ASDs are Impaired Social Understanding, language Abnormalities, and Impaired Sensory Functioning.	26(68%)	0(0%)*	13(33%)
Behavior therapy is an intervention most likely to be effective for children with ASDs.	12(31%)*	4(10%)	23(59%)
Early intervention demonstrates no additional benefit to children with an ASD.	1(3%)	20(51%)*	18(46%)

*Note.*Correct responses*

Table 2 (continued)

Pre-service Teachers' Performance on the Knowledge of Autism Spectrum Disorders

(n = 39)

Knowledge of ASD Items	True *n*(%)	False *n*(%)	Don't Know *n*(%)
If an intervention works for one child with an ASD, it will definitely work for another child with an ASD.	0(0%)	33(85%)*	6(15%)
Medication can alleviate the core symptoms of ASDs.	5(13%)	8(21%)*	26(67%)
With proper intervention, most children with an ASD will eventually "outgrow" the disorder.	1(3%)	19(49%)*	19(49%)
Etiology			
Genetic factors play an important role in the causes of ASDs.	18(46%)*	18(46%)	17(44%)
In many cases, the cause of ASDs is unknown.	21(54%)*	0(0%)	17(44%)
Traumatic experience very early in life can cause an ASD.	0(0%)	7(18%)*	32(82%)

*Note.*Correct responses*

Investigation of differences in general knowledge based on years in college, experience, and teaching intentions. A one-way analysis of variance (ANOVA) was conducted to explore the impact of college years on knowledge of ASD. The independent variable, year in college contained three groups: first year, second year, and three and more years. The dependent variable was knowledge of ASD. The ANOVA was not statistically significant $F(2, 35) = .37$, $p = .69$. There was no significant difference between college years and knowledge of ASD. The mean knowledge scores by college years were for freshmen ($M = 6.27$, $SD = 3.10$), sophomore ($M = 5.29$, $SD = 2.81$), and juniors and seniors ($M = 5.78$, $SD = 3.35$).

An independent samples t-test was conducted to compare knowledge of ASD scores for preservice teachers' experience with persons with ASD and for those without experience. There was no significant difference in scores for preservice teachers with experience ($M = 6.47$, $SD = 3.04$) and for those without experience ($M = 5.11$, $SD = 2.88$); $t(36) = 1.42$, $p = .16$. Despite having no statistical significance, the actual difference in mean scores between the groups was moderate $d = .52$.

A one-way analysis of variance was conducted to explore differences among pre-service teachers' intended levels to teach on knowledge of ASD. The independent variable, intended levels to teach, contained three groups: wants to teach younger children, wants to teach older children, and undecided. Two participants did not indicate an age of children to teach. The dependent variable was knowledge of ASD. The analysis revealed no statistically significant difference among the three groups of pre-service teachers [$F(2, 34) = .00$, $p = .99$]. The mean knowledge scores for the teachers were: interest in teaching younger children ($M = 5.83$, $SD = 2.77$), interest in teaching older children ($M = 5.92$, $SD = 3.26$), and undecided ($M = 5.86$, $SD = 3.63$).

To compare knowledge of ASD scores for pre-service teachers with different areas of study (general and special education) an independent t-test was used. There was no significant difference in scores for pre-service teachers ($t(35) = -.02$, $p = .99$). The mean knowledge score for pre-service teachers interested in general education was 5.81, ($SD = 3.00$) and for those interested in special education was 5.83 ($SD = 3.54$).

Knowledge of classroom strategies effective for students with ASD.

Table 3 provides a summary of the self-reported knowledge of classroom practices that are used to serve students with ASD. This information is found in the fourth section of the MAIQ. Due to the categorical nature of this data only participants' response percentages were reported. Table 3 provides a summary of the total number of respondents (preservice teachers) that were aware of the listed strategies. Participants that responded "yes" to being aware of the strategy, also rated the strategy's effectiveness.

Responses suggest that many participants were not aware of the classroom practices, "commonly used and purported interventions and treatments for individuals with autism-related disabilities" (Simpson et al., 2005). For example, of the 37 preservice teachers who answered the question as to whether or not they had heard of Discrete Trial Training, only 3% reported having heard of this practice. Fifty-five percent of respondents reported having heard of Assistive Technology, while 34% and 8% had only heard of Applied Behavior Analysis and Incidental teaching respectively. However participants reported being aware of other approaches not mentioned in Simpson et. al. (2005) study. For example 100% of the participants reported being aware of the classroom practice "using extra time on assignment" and 17.9% of these participants reported it to be very effective. Preservice teachers (94.7%) had heard of "verbal reinforcement" and 23.1% found it to be very effective. Only 35.1% of the respondents reported

having heard of “providing students a home base” as a strategy to help children with ASD, with 15.6% finding it to be very effective. See Table 3 for full details.

Table 3

Preservice Teachers' Awareness of Classroom Practices

	Heard Of		Effectiveness					
Inclusion Practices	Participants who Responded N(%)	Yes N(%)	Participants who Responded to Effectiveness N	Not Effective N(%)	Somewhat Effective N(%)	Effective N(%)	Very Effective N(%)	Don't Know N(%)
			Simpson – Scientifically Based Practice					
Applied Behavior Analysis	38	13 (34%)	34		1 (2.9%)	4 (11.8%)	4 (11.8%)	25 (73.5%)
Discrete Trial Training	37	1 (3%)	31			1 (3%)		30 (97%)
Pivotal Response Training	37	2 (5%)	31			2 (6.5%)		29 (93.5%)
			Simpson – Promising Practice					
Assistive Technology	38	21 (55.3%)	38		7 (18.4%)	5 (13.2%)	6 (15.8%)	20 (52.6%)
Augmentative and Alternative Communication	37	6 (16.2%)	31		3 (9.7%)	1 (3.2%)	1 (3.2%)	26 (83.9%)
Incidental Teaching	37	3 (8%)	31		1 (3.2%)	2 (6.5%)		28 (90.3%)
Joint Action Routines	37	2 (5%)	31	1(3.2%)	1 (3.2%)			29 (93.5%)
Picture Exchange Communication System	37	5 (13.5%)	33			3(9.1%)	1 (3%)	29 (87.9%)
Play Oriented Strategies	37	16 (43.2%)	35		6 (17.1%)	7 (20%)	3 (8.6%)	19 (54.3%)
Sensory Integration	37	12 (32.4%)	33		2 (6.1%)	6 (18.2%)	2 (6.1%)	23 (69.7%)
Social Stories	37	11 (29.7%)	32		1 (3.1%)	5 (15.6%)	1 (3.1%)	25 (78.1%)
TEACCH	37	4 (10.8%)	32		1 (3.1%)	2 (6.2%)	1 (3.1%)	28 (87.5%)

Table 3 (continued)

Preservice Teachers' Awareness of Classroom Practices

	Heard Of			Effectiveness				
	Participants who Responded	Yes	Participants who Responded to Effectiveness	Not Effective	Somewhat Effective	Effective	Very Effective	Don't Know
Inclusion Practices	N(%)	N(%)	N	N(%)	N(%)	N(%)	N(%)	N(%)
			Simpson – Limited Supporting Information					
Art Therapy	38	30 (78.9%)	39		12 (30.8%)	11 (28.2%)	4 (10.3%)	12 (30.8%)
Floor Time	37	5 (13.5%)	32		2 (6.2%)		1 (3.1%)	29 (90.6%)
Gentle Teaching	37	11 (29.7%)	34		5 (14.7)	5 (14.7%)		24 (70.6%)
Relationship Development Intervention	37	4 (10.8%)	31		1 (3.2%)		2 (6.5%)	28 (90.3%)
Cognitive Scripts	38	13 (34.2%)	35		4 (11.4%)	5 (14.3%)	1 (2.9%)	25 (71.4%)
Van Dijk Curricular Approach	37	2 (5.4%)	30			1 (3.3%)		29 (96.7%)
			Simpson – Not Recommended					
Facilitated Communication	37	9 (24.3%)	31		2 (6.5%)	2 (6.5%)		27 (87.1%)
			Other Approaches					
			Behavior Management Strategies					
Behavior Contract	37	28 (75.7%)	36	2 (5.6%)	11 (30.6%)	8 (22.2%)	4 (11.1%)	11 (30.6%)
Choice Making	36	25 (69.4%)	36	2 (5.6%)	4 (11.1%)	11 (30.6%)	4 (10%)	15 (41.7%)
Edible Reinforcement	37	16 (43.2%)	35		6 (17.1%)	7 (20%)	1 (2.9%)	21 (60%)

Table 3 (continued)

Preservice Teachers' Awareness of Classroom Practices

	Heard Of		Effectiveness					
	Participants who Responded	Yes	Participants who Responded to Effectiveness	Not Effective	Somewhat Effective	Effective	Very Effective	Don't Know
Inclusion Practices	N(%)	N(%)	N	N(%)	N(%)	N(%)	N(%)	N(%)
Functional Behavior Assessment/Analysis	37	14 (37.8%)	36		3 (8.3%)	6 (16.7%)	2 (5.6%)	25 (69.4%)
Token Economies	37	15 (40.5%)	34		6 (17.6%)	5 (14.7%)	3 (8.8%)	20 (58.8%)
Verbal Reinforcement	38	36 (94.7%)	37		9 (23.1%)	14 (35.9%)	10 (23.1%)	6 (15.4%)
Instructional Techniques								
Extra Time on Assignments	38	38 (100%)	39	4 (10.3%)	10 (25.6%)	12 (30.8%)	7 (17.9%)	6 (15.4%)
Priming	37	14 (37.8%)	36		5 (13.9%)	3 (8.3%)	1 (2.8%)	27 (75%)
Prompting	38	19 (50%)	37	1 (2.7%)	6 (16.2%)	8 (21.6%)		22 (59.5%)
Visual Activity Schedules	38	27 (71.1%)	37		4 (10.8%)	10 (27%)	10 (27%)	13 (35.1%)
Classroom Modifications								
Preferential Seating	38	29 (76.3%)	38	3 (7.9%)	6 (15.8%)	11 (28.9%)	3 (7.9%)	15 (39.5%)
Providing Students a Home base	37	13 (35.1%)	32		3 (9.4%)	4 (12.5%)	5 (15.6%)	20 (62.5%)
Providing a List of Schedule Changes	38	35 (92.1%)	38		12 (31.6%)	8 (21.1%)	14 (36.8%)	4 (10.5%)
Providing a List of Classroom Expectations	38	35 (92.1%)	38		8 (21.1%)	12 (31.6%)	13 (34.2%)	5 (13.2%)

Table 3 (continued)

Preservice Teachers' Awareness of Classroom Practices

	Heard Of		Effectiveness					
	Participants who Responded	Yes	Participants who Responded to Effectiveness	Not Effective	Somewhat Effective	Effective	Very Effective	Don't Know
Inclusion Practices	N	N(%)	N	N(%)	N(%)	N(%)	N(%)	N(%)
			Peers/Social Skills					
Direct Instruction of Social Skills	37	21 (56.8%)	35	2 (5.7%)	2 (5.7%)	8 (22.9%)	5 (14.3%)	18 (51.4%)
Education Peers about ASD	37	25 (67.6%)	38		3 (7.9%)	12 (31.6%)	8 (21.1%)	15 (39.5%)
Peer Initiation Strategies	37	18 (48.6%)	34		4 (11.8%)	7 (20.6%)	5 (14.7%)	18 (52.9%)
Peer Tutoring Strategies	37	34 (91.9%)	37	3 (8.1%)	11 (29.7%)	13 (35.1%)	4 (10.8%)	6 (16.2%)

Attitudes towards the Inclusion of Children with ASD.

Overall Findings. In order to evaluate preservice teachers' attitudes towards the inclusion of children with ASD, a number of individual items from the questionnaire were selected. These seven individual items were selected from the third section (Opinions about Inclusive Education) of the questionnaire. These statements were selected because they were better able to identify and measure preservice teachers' attitudes towards the inclusion of children with ASD. Of the seven selected items, three items were reversed coded such that positive attitudes were reflected in positive scores. A reliability analysis indicated that there was some interrelatedness of among the seven individual items (.71). A brief factor analysis, although not ideal with a limited number of participants, indicated that the items perhaps comprised three factors. Examination of the items in the three factors did not indicate that the factors comprised meaningful sets of items. Therefore, preservice teachers' ratings on each of the seven items are presented in Table 4 below. Scores on individual items ranged from -3 to +3. Scores that fell between +0 and 1 indicated that the participant agreed somewhat with the statement, i.e. had a somewhat positive attitude towards inclusive education. A score between 1 and 2 suggests that participants agreed with the statements (had a positive attitude), while scores above 2 reflected strong agreement (having very positive attitude). The converse was also true. Participants who had negative scores, somewhat disagreed (-0 to -1), disagreed (-1 to -2), strongly disagreed (above -3) with statements which suggests a negative attitude towards inclusion of children with ASD. In general, the mean scores of participants' responses for each of the individual items suggest that pre-service teachers generally have attitudes that are consistent with meeting the needs of children with ASD in schools.

Table 4

Descriptive Results for Preservice Teachers' Attitude toward Inclusive Education for Students with ASD (n = 39)

Items	Mean (SD)
2. Children with ASD should be integrated in general education settings.	1.13 (1.24)
8. All students with an ASD should be included in general education setting.	-0.26 (1.74)
17. Only teachers with extensive special education experience can be expected to deal with students with an ASD in school settings (Reverse coded)	.05 (1.95)
21. Students with classic autism are able to benefit from the activities of a regular school (Reverse coded)	1.13 (1.56)
22. A good general education teacher can do a lot to help a student with ASD	1.15 (1.33)
25. Students without disabilities can benefit from contact with students with an ASD	2.23 (.96)
26. Special schools specifically designed for their needs are the most appropriate placement for students with an ASD (Reverse coded)	.41 (1.77)

Investigation of differences in attitudes based on general knowledge, years in college, experience, and teaching intentions. To compare both attitude towards the inclusion of children with ASD scores for pre-service teachers with different areas of study (general and special education) and attitude towards the inclusion of children with ASD scores for pre-service teachers with and without experience, an independent t-test was used. There were no significant difference in scores for pre-service teachers based on area of study ($t(35) = -.68$, $p = .50$) and experience ($t(36) = 1.22$, $p = .23$). Using Pearson correlation and an alpha level of .05, analysis revealed no significant relationships between Attitudes towards the inclusive education for children with ASD and preservice teachers' Knowledge of ASD ($r = .20$, $p = .25$).

One-way analyses of variance were conducted to explore differences among preservice teachers' intended levels to teach and years in college on attitude towards the inclusion of children with ASD. The analysis revealed a statistically significant difference among the three groups of preservice teachers based on intending to teach at different levels [$F(2, 34) = 3.53$, $p = .04$] and years in college [$F(2, 35) = 3.56$, $p = .05$]. However, Post Hoc Analysis using Scheffe´ test revealed no significant difference among specific groups in either of these categories.

Phase 2: Interview Results

After all participants had completed the MAIQ, the 14 who had agreed and were available to be interviewed were contacted and interviews were scheduled at their convenience. All 14 female interviewees planned to become teachers. In comparison to the entire sample (n = 39) 37.8% of the interviewees were females (n =14) of which 42.1% (n = 8) indicated having some level of experience with ASD, while 30% (n = 6) had no experience. Thirty-three percent (n = 5) of the interviewees were freshmen, 28.5% (n = 4) were sophomores, 37.5% (n = 3) were juniors, and 100% (n = 2) were seniors. Interviewees demonstrated a fairly moderate level of

knowledge on Section 2 of the MAIQ (Knowledge of ASD) that was slightly higher than the average for all participants (6.5 versus 5.79 correct out of 15).In the following report of findings, pseudonyms have been used to protect the identities of the interviewees and, where a specific respondent is quoted, her year in college and intended area of teaching specialty (special or general education) are indicated in parentheses.

Indicators of the validity of the MAIQ. Prior to asking interviewees about specific responses, I asked them if they felt the MAIQ had captured their beliefs and knowledge well, or if they felt there were parts of questionnaire that were generally confusing or incomplete. All 14 interviewees said they felt that the MAIQ questionnaire was relatively easy to understand and very thorough. In subsequent discussion of their specific answers, participants were asked if they had misunderstood a question and it was noted and further investigated if they gave a response that contradicted an original answer on the MAIQ. All participants with the exception of two perceived that their answers on the questionnaire were valid. The two interviewees who would have modified any responses noted that they had misinterpreted questions 6 and 24 in Section 3. One participant thought that personality was synonymous with mood, while the other simply had made an inaccurate response. Both of these interviewees subsequently changed their responses to indicate what they actually believed to be factors for successful inclusion.

I was particularly interested in whether respondents had used the "Don't Know" option in Section 2 and 4 of the MAIQ appropriately, or if they had instead felt pressured to indicate knowledge of ASD and/or classroom practices with which they are actually unfamiliar. The responses of all but two interview participants indicated that they had, in fact, underlined "Don't Know" when asked about unfamiliar practices; the responses of the two participants revealed that they had guessed a few answers, rather than choosing "Don't Know

Knowledge of ASD. In the interviews, I asked first about Sections 2 and 4 of the MAIQ, combining them for this purpose because both were related to knowledge about ASD. I was particularly interested in the sources to which interviewees would attribute their knowledge, because ASD is not a universally common topic in teacher education or other college classes, I also wanted to know if the interviewees felt their knowledge was sufficient to enable them successfully to teach students with ASD.

Knowledge Sources. Interviewees attributed their knowledge of ASD (symptoms, etiology, classroom practices, etc.) to a variety of sources, including previous and current courses taken at the University of Georgia and/or at other schools; personal interactions with people with ASD, with the family and friends of people with ASD, or with professionals who treat ASD or similar disorders; their own basic understanding of psychology; and/or information from electronic and print media. The two most commonly cited and related sources of knowledge were through previous or current coursework and experiences with children with ASD.

Coursework. Four interviewees said they had learned about ASD solely through coursework, while eight interviewees gave credit to both course work and experience. Eight of these said they had been taught specifically about ASD in their teacher education foundation courses, such as their special education or introductory educational psychology courses, although, as shown in the sample quotes below, their exposure from classes varied considerably.

> *I took Special Ed. 2000, [and] it talked a little bit about that, but we couldn't go into too much depth because there was a lot to cover. Well the strategies, some of the strategies we talked about in the classroom as well as also in my Ed. Psych.2130, we had to talk about behavior management [which would be useful with ASD kids]. (Dora - junior, foreign language)*

We didn't talk about the cause, we just talked about the definition, and then what happened for this disorder, and there like, there are five different characters...and we talked some definitions. (Zhang - junior, mathematics education).

Other interviewees discussed gaining knowledge in more general courses, such as biology or psychology, that they felt would be helpful in understanding a student with ASD; for example:

I've taken...like Intro to Psychology where it has been just briefly touched on, but I've never had, like, a class, ...and it's never been addressed to me yet. (Elizabeth - sophomore, elementary education)

Yet another interviewee reported that, while her college courses so far had not addressed ASD, she had learned about ASD in high school.

Well, I am in EPSY 2130 now, and we really haven't talked about any Autism. When I was in high school...yeah, I think my class in child development, I remember learning all about this. (Jane – freshman, undecided major)

A range of experiences. Ten interviewees' had answered "Yes" to the question in Section 1 of the MAIQ that asked whether they had "had specific experiences with people with an Autism Spectrum Disorder." In talking with them, it became clear that their "Yes" answer to this question covered a broad spectrum of experiences, ranging from minimal contact:

It was just like one night I babysat these two little boys, and they had both been diagnosed with Autism and they were pretty high functioning. [They slept the whole time I was there], but I went a few days before to meet them and introduce myself so they weren't, like, just left with me. (Catherine - sophomore, undecided major)

to moderate familiarity:

> *I definitely do. When I first started working [at the veterinary clinic], and he (one of the veterinarian's sons with ASD) would be around the clinic, he would be very standoffish, he would just kind of stare at me from around the corner. I'd try to talk to him and that kind of thing, until he got really comfortable with me. He wouldn't make eye contact; he wouldn't really want to interact with you at all. So I think it was really good for me and for my knowledge especially to be able to talk to his parents and, you know, learn a little more not just from the teaching side of it, but, you know, from the parents' perspective too. So yeah, I think it definitely helped. (Annie - junior, elementary education)*

to having significant instructional experience with children with ASD:

> *I did this through the school district, and it was like a summer school (K-5) that they had…the certified teachers that were certified with special ed., they basically just talked to me about the kids and told me...kind of helped me to understand how to deal with them, because there were so many different severities that...I worked with. There was Down's syndrome; I mean, it was a special education summer school, so there was everything. Yeah, and some severities of Autism: one child he couldn't even speak and there were other ones where it was just, like, I mean, you wouldn't know until you were interacting with the child. (Jane - freshman, undecided)*

Knowledge needed. As noted above, interviewees' scores on Section 2 of the MAIQ (Knowledge of ASD) averaged only slightly higher than the average for all participants (6.5 versus 5.79 correct out of 15). Nevertheless, all interviewees felt that preservice teachers needed

knowledge of ASD. Betty, a senior, who had a Knowledge score of 0 and is planning to teach elementary school, expressed the group's opinion clearly:

> *Yes, preservice teachers should because the disorder is being diagnosed a lot and has been increasing over the past few years, and I think that it would be—[if] a teacher's going through her teaching career, it would be out of the ordinary that they not experience a child with ASD… I think they should be prepared as to how to deal with students that have characteristics of ASD.*

However, interesting differences emerged as to the level and type of knowledge interviewees felt they would need. First, like Betty above, interviewees generally placed more emphasis on having adequate knowledge of strategies in order to effectively teach children with ASD, rather than on general knowledge of ASD or knowing how to identify children with ASD;

> *They [regular preservice teachers] might not need to have, like, an intensive knowledge, but at least, like, a basic knowledge of how to deal with those kids.*
>
> *(Linda - freshman, special education)*
>
> *I mean some of the basic teaching methods...yeah, just basic teaching methods.*
>
> *(Kristie - freshman, Social Sciences/History)*

This was true despite interviewees' generally low scores on Section 4. For instance, Linda and Kristie each had an ASD knowledge mean score of five, which was slightly lower than the general score for all participants (5 vs. 5.79 out of 15). In addition, there were variations among interviewees as to the level of knowledge they thought a teacher should possess, based in part on two important expectations: first, their expectation as to whether their future classrooms would contain children with ASD, and second, their expectation or assumption of the presence and assistance of a special education teacher or aide in the classroom, should a student with ASD

be included. Holly (junior undecided) believed that whether or not you had children with ASD in the classroom, preservice teachers should have extensive knowledge of this disorder. She said

> *I think the more you can learn about this, the better you will be able to help these children out and even help your classroom, like, behaviorally. I guess socially, too. So I feel like a lot, I mean the more you can learn, the more that you can find out information about what's really important. I think they (teachers) should know what causes Autism, how, like, ways you can calm certain situations that might arise and just like how to overall manage Autistic kids versus other kids in general.*

However, this belief was not shared by all the interviewees. Ebony (sophomore, elementary education) believed that regular teachers wouldn't need extensive knowledge of ASD because there would usually be a special education teacher or aide present in any classroom with an ASD student.

> *I don't think that [they would need] a lot, just because it is not really a common disorder; but probably knowing enough to recognize symptoms, so maybe you know they do have ASD. I don't think that [teachers] should have to have extensive knowledge because I think, like, that usually they have someone come in and help.*

and Jane (freshman, undecided) agreed:

> *Well, I think that as far as teaching them (students with ASD), I highly believe in having an aide or something; that's, like, really a special education student. [Teachers] need to have like some kind of understanding of it, [but] not so, I don't*

think they need to be so detailed as how to work with them because I feel like that should be up to the aide and everything.

Dora (junior, foreign language) believed that the level of knowledge a preservice teacher should possess should be based on whether or not they will be working closely with children with ASD:

If they are actually going to work with them, then they need to know all the symptoms that go with them, what medications can help… just different things they can do to help them basically learn how to socially interact and how to become more functional in a day-to-day basis.

Despite most interviewees' lack of general knowledge, and especially knowledge of strategies, and their general valuing of knowledge about ASD, only two interviewees stated specifically that they personally needed to have more knowledge of ASD:

I think I should know a lot more than I do know. I'm 20 and a half, and I'm going into my third year of college, and it's never been addressed to me, not yet. So I think that... they should teach you specifically how to handle them; what to do in the situation, how to teach them specifically. But as far as everybody else out there goes, I think that it should be brought up. I mean all kinds of other disabilities are brought up. That (ASD) is just one that's not really talked about as much, now that I think about it. (Elizabeth - sophomore, elementary education)

I think we should, as teachers have knowledge of how to teach all students and accommodate everybody, just in the case they don't, like, the school can't afford or they don't provide special education services. (Ebony – sophomore, elementary education)

Attitudes towards inclusion of students with ASD. I asked interviewees to comment on their beliefs about inclusion for students with ASD, and when and how it would be appropriate. Questions 1, 5, 19 and 26 from Section 3 of the MAIQ were used to elicit their responses.

Definitions of inclusion. In their responses, five interviewees defined inclusion as partial inclusion, in which students with special needs would interact with their typical developing peers only during specific times of the day. This included, but was not limited to, interaction in less academic classes such as art, as well as during lunch and playtime. Jane's (freshman, undecided) response is typical of these:

> *I would define it as including a child in the regular classroom, but with some limitations. Like, there's also going to be extra help outside, either the aide is in the classroom or there will be certain times of the day where the child does go out, but for the majority he is, he or she is, in the classroom. I just don't feel like there is ever 100% inclusion.*

However, nine other interviewees defined inclusion as the child's being in the classroom for the whole school day (full inclusion), with perhaps additional in-class support from a special education teacher or paraprofessional.

> *Inclusion, the child would be in a normal classroom, a regular class with, sitting in a desk among his/her peers, and then, in the participating in the class to a certain extent, not expecting the best of them, not comparing them to their peers but expecting them, you know the best of them how they can, however much they can participant and encourage them in that and supporting them. (Betty – senior, elementary education)*

…including kids with these kinds of disorders in your classroom, in a "normal" classroom...sort of, like, helping them function on the same level that other students do with extra help added. I guess like a helper or someone assigned specifically to them and, you know, making sure that they're keeping up with the pace of the class and providing extra help in case they do need it.(Amy – freshman, social sciences/history)

Criteria for inclusion. Interviewees mainly agreed that the decision regarding inclusion depended mostly on the severity of the child's condition and the child's personality. Students who are considered to be disruptive, having severe cognitive impairments, aggressive, or are a danger to themselves and others were said to be better served in non-inclusive school settings; the following two quotes exemplify their thinking:

The severity is extremely important. If they are that extreme, then I think inclusion is a terrible idea. Because not only does it not benefit that child and may, you know, increase their problems, but it also provides disruption for the teacher, disruption for the class, and in an effort to help the student, it just may be hurting the student. On the other hand, [for] a student whose severity is mild, inclusion is a great idea I think...because the student has a better chance of functioning in a normal working world outside of school…instead of getting over high school, and then dumping them into the world...Inclusion is great; I think you just have to judge that based on the severity of each case. (Amy – freshman, social science/history)

If it's severe to the point where the child might get violent or something like that, then that needs to be taken into account, and that's not healthy for them or for the

other students. But to an extent I think that everyone at least needs the, a chance to...be integrated, just to see how they would react...because you never know what kind of reaction they may have. (Linda – freshman, special ed)

Students with less severe impairments, but who would have difficulty "keeping up" in academic classes (such as mathematics, science, etc.) were seen as most likely to benefit from partial inclusion, as seen in this response:

I would say partial inclusion. I am kind of on the fence [regarding] inclusion, just because each child is different, so partial inclusion might work, whereas full inclusion might be better, or non inclusion at all. It just all depends on how severe the disability is. Obviously if their language skills and their cognitive abilities aren't developed enough in order to do language arts or something, then pull them out for that, but if they are fine with like art, you can keep them in. (Ebony - sophomore, elementary education)

Benefits of inclusion.

In discussing their responses to questions 11, 18, and 25 of Section 3, interviewees felt that inclusion, if it followed the criteria indicated above, is likely to benefit not only the students with ASD, but also their more typically developing peers.

Benefits for classmates without ASD. All 14 interviewees agreed that typically developing classmates would benefit from appropriate inclusion of children with ASD. Interviewees mentioned that, due to the interaction between typical developing children and children with ASD, typically developing children would become more aware of the differences that exist in others and develop tolerance and knowledge about interacting with persons with special needs.

They also mentioned that, through this interaction, prejudice and stereotypical behavior would be reduced among typically developing peers.

> *[Including students with ASD] benefits the class because it's allowing other children to understand that everyone's different and [it teaches them to be] sensitive to those needs. I feel that if you are exposed to that earlier then you are more of an accepting individual as you grow up.* (*Jane freshman, undecided)*
>
> *Benefits for the students with ASD***.**

Again, all 14 interviewees mentioned both academic learning and emotional development (the building of confidence and self-esteem) as benefits of inclusion for the appropriately included student with ASD; however, like Jane below, they emphasized social/behavioral modeling as the primary benefit of inclusion for children with ASD.

> *As for the student with ASD or ADHD,… I think the other students kind of serve as models… Also when they are not included, [they experience]a lot of emotional distress, by knowing that they're different, and being included and treated the same, I think is very helpful. (Jane - freshman, undecided)*

In fact, interviewees tended to see the ability to gain social skills as a measure of success of inclusion, as in this response:

> "*It depends on the severity of the disorder. For some students, successful would be them being comfortable sitting in the classroom, just sitting among other student; for some others, it could be talking to a neighbor; for some, it could be speaking and answering a question in the class. So I think that just depends on the student themselves and what needs they have"* (Betty - senior, elementary ed.).

Factors necessary for inclusion to be successful. In discussing their answers to questions 3, 6, 7, 15, 16, 17, 20, 22, 24, and 27 in Section 3 of the MAIQ, interviewees identified five specific factors that they believed contribute to the likelihood for inclusion to be successful: the teacher's knowledge, his or her personality or attitude toward including special needs students, the makeup of the class (including student personalities), the attitudes of other school personnel, and full parent collaboration.

Teacher's knowledge. Just as they had for preservice teachers, all interviewees stated that all in-service teachers (both general and special educators) should have a basic understanding of ASD. However, some clearly felt that extensive knowledge would be necessary only for those who wished to specialize in teaching children with ASD, drawing a clear distinction between the roles of each type of teacher.

> *Special needs students need special needs teachers, just because they have the proper training and they know what to do. They know how to teach students with learning disabilities. General education teachers probably should have general knowledge about the special needs. In case that ever should come up, they could recognize the characteristics of it...but I don't think they should be the primary teachers. (Kristie - freshman, social science/history)*

Eight interviewees saw teachers' roles as more overlapping and dependent on the severity of the disorder, along with the additional classroom assistance that teachers might receive. Amy (*freshman, elementary ed*) summed it up by saying

> *One thing I've learned in my education class this semester is that special education teachers may have more extensive education with specific disabilities and working with students with specific disabilities, but at a baseline we're all*

> *teachers and we're all learning the same thing and the same methods… I think that on a base level, a regular teacher who has had extensive training may have great things to give to the students with disabilities, but if they're kept from doing that, that benefit may never be given, so I think it's important not to assume that every teacher is going to be able to work with students with disabilities but to provide the opportunity to those who are willing. I know myself, I don't have an interest in working solely with students with disabilities, but I have a great interest in things like inclusion or helping students [both typically developing peers and students with ASD] trying to benefit [learn]. So I think it's great to give that option to teachers and not to require them to have extensive training unless that's the area they want to go into.*

Teacher's personality/attitude. All interviewees believed that in order for inclusion to be successful, all participants (teachers, school personnel and parents) must be optimistic and demonstrate a positive attitude to teaching and caring for students with ASD and other disabilities. Teachers are one of the main players in inclusion, and they have great influence on the attitudes of typically developing children in their classrooms. As Annie (junior, elementary education) put it:

> *Attitude is everything, especially for a teacher because it rubs off on the kids so much. They pick up on it, and it can make all the difference in the world.*

Class makeup/personalities. Related to the previous factor was the interviewees' strong belief that classmates' attitudes could significantly influence the success of inclusion. This belief was suggested by all. As Catherine (sophomore, undecided) pointed out:

It depends on the student and the surrounding students. If the [other] students are negative, I feel like that's not going to be a positive experience for the child [with special needs].

Attitudes of other adults. Both parents and other school personnel were seen by interviewees as necessary support systems for successful inclusion. Six interviewees, like this one, discussed the importance of parent-school collaboration for inclusion:

When you have the parents, get them involved with the school psychologists [so they can] see what's expected at this stage in the classroom and how they can help them (the included child) at home to come back in the class. (Holly sophomore, undecided major)

All fourteen interviewees identified the importance of support from other teachers or para-professionals:

If you're the sole teacher who is pro-inclusion, you're going to fizzle out eventually because it's a difficult thing...Support is the key, I think, to making inclusion work...and if you're fighting against an atmosphere that is against inclusion, against helping students with disabilities, then it just will fail...it just will not work. So I think support staff is extremely important. (Amy – freshman, elementary education)

I've observed that some paraprofessionals, like, it's just a job, and I mean that's just where they go to get a paycheck, and so I imagine if one of those were paired with an Autism, ASD student that they would not be any help. But I do feel if there was a paraprofessional that truly cared, made a connection with the student, that that could help in the inclusion. (Betty - senior, elementary education)

Attitudes Toward Personally Teaching a Student with ASD. Once interviewees had spoken generally about inclusion for students with ASD, in order to get a more specific idea of their personal attitudes, I asked each of them, "If given a choice to teach a child with ASD or a child with ADHD (Attention Deficit Hyperactive Disorder), which would you prefer teaching?"

The six interviewees who expressed a preference for teaching a child with ADHD did so for one of two reasons: one because she believed ADHD to be a treatable disorder, unlike ASD, and five because they felt they knew more about ADHD and how to effectively instruct students with that disorder.

For the other eight interviewees who expressed a preference for teaching a child with ASD, the possibility of a "social desirability" effect could not be eliminated, as participants were obviously aware that the study's main focus was on ASD. These participants, however, did provide specific reasons for their choices, most of which centered on challenge level.

Challenge Level. The six interviewees who preferred teaching ASD students because of the level of "challenge" involved actually evidenced conflicting points of view on this matter. Two interviewees said they thought ASD was a challenge in teaching, due its incurable nature, and it was the thrill of the challenge that would motivate them to become creative with their teaching skills in order to provide children with ASD with the most effective instruction.

> *[I] just feel that ADHD is not as severe of a disorder and I definitely am much more interested in severely to profoundly disabled children (Laura - sophomore, special education)*

On the other hand, four interviewees perceived that teaching a child with ASD would be a less challenging, easier task than teaching a child with ADHD. They believed that due to the inability to maintain attention for periods of time, the behavior of a child with ADHD would be

more disruptive in a classroom setting than that of a child with ASD, and thus they would prefer to teach a student with ASD. Betty (senior, elementary ed.) exemplifies these:

> *I would rather teach a child with ASD because in ADHD you are more concerned with controlling behavior by keeping them from disrupting other students in the class, but an ASD student, you are trying to find ways to include them in the class, and a child with ASD would not be as disruptive. It would just be a little less stressful to try to include them as much as possible than to try to control a child with ADHD.*

Personal experience. Three interviewees perceived their personal experiences had given them knowledge which would make them more qualified to teach students with ASD. Jane (freshman, undecided), believed that her experience with having Obsessive Compulsive Disorder, has given her transferable skills that would be beneficial for a child with ASD, and two other interviewees felt that their previous experience working with children with ASD would make them more qualified to teach other kids with ASD.

CHAPTER 5

DISCUSSION

Several findings emerged from this study that suggest implications for preservice teacher preparation programs. The interpretation of these findings are found below and specifically focus on (1) knowledge of ASD and strategy use; and (2) attitudes toward the inclusion of children with ASD. A section on the limitations of the study follows that discussion, followed by implications for teacher education.

Knowledge of ASD and Strategy Use

Results indicate that year in college, experience, intended level to teach, and teaching area had no statistically significant influence on preservice teachers' knowledge of ASD. Despite, obtaining non-significant findings of the above variables, the effect size for experience and knowledge, was *d=.52*, which suggests that a larger sample may yield significant results.

Preservice teachers in this sample had limited to moderate (mean score of 5.79 /15) general knowledge of ASD and even less acquaintance with strategies used to instruct students with ASD as evidenced by the low percentage of participants who reported having heard of effective strategies for teaching student with ASD as identified by Simpson (2005). Data from this study are consistent with Hendricks' (2008) study of inservice teachers, where teachers had low to intermediate levels of knowledge about ASD and strategies for children with ASD's sensory motor development and social skills. Results of this study are also consistent with Segall's (2008) examination of general and special education inservice teachers where similar findings on teachers' limited knowledge of strategies used in educating children with ASD were found. Forty percent of knowledge items were reported as 'Don't know' responses by

participants, while 20% of the responses were incorrect. Two percent of the responses were both false and not knowing. Interviewees recalled that their limited knowledge of ASD and strategy use was obtained through some foundational university courses and a few experiences. One unique finding of the current study, however, was that although preservice teachers' reported having limited knowledge of ASD and the strategies for children with ASD, preservice teachers through their interview data agreed that knowledge of ASD was important, but reported having mixed opinions on who should have intense knowledge of ASD. Many interviewees agreed that special educators should possess the most knowledge of ASD, but general educators should be able to identify the warning signs of a child with a disability. Participants in the current study also noted that strategies effective for children with ASD were a necessity for preservice teachers' preparation.

Attitude Towards the Inclusion of Students with ASD

The second major finding of this study was that these preservice teachers generally had a positive attitude towards the inclusion of students with ASD in a regular classroom setting. Participants' attitudes, however, were strongly influenced by the perceived severity of the disorder. Specifically, interviewees believed that if a child with ASD was a danger or even a major distraction to himself or others, then inclusion would not be the appropriate least restrictive environment for that child. Interviewees also noted if the child was not aggressive or distracting and the classroom had support systems in place, such as the use of a paraprofessional and/or a special education teacher who would assist the child daily in the classroom (full inclusion) or during specific times throughout the day (partial inclusion), then it would be beneficial for all students including typically developing peers to include the student with ASD. This finding is consistent with other studies where preservice teachers displayed positive

attitudes towards inclusion but their attitude differed based on the severity of a disability or disorder (Reber, Marshak, & Glor-Scheib, 1995; Ward & Le Dean, 1996; Avramidis & Norwich 2002).

Experience, area of study, and knowledge of ASD were not found to be significant factors related to attitude toward the inclusion of children with ASD for this sample. Intended level to teach and years in college were found to be significant factors, however these findings were not supported by a post hoc analysis, which is likley due to the overall main effect's significance level at .05. These findings were surprising, especially in the case of experience as some previous research has indicated that practicum experiences, at least, tend to influence preservice teachers' attitudes towards inclusion (Reber, Marshak, & Glor-Scheib, 1995; Avramidis & Norwich 2002)).

Limitations

The lack of statistically significant results reported in this study may be the result of the small sample of preservice teachers who agreed to participate in the study, as well as the constraints of the sample, which included a lack of diverse individuals. Students who were recruited for study were chosen only from the University of Georgia and from one foundation course in the College of Education. Participants available for the interview consisted of only females, and only one special education student, which may have limited the variety of responses. Participants who volunteered for this study may not have been a true representation of the general population, due to self selection bias. Participant who volunteered may have done so, for a variety of reasons, which includes but is not limited to the belief that they were knowledgeable on the topic or had special interests in Autism. Interviewees gave a variety of

reasons for their participation which included their desire to obtain research experience, receiving an opportunity to learn more about Autism, as well as being altruistic.

Another limitation to this study was a lack of specificity in some items on the MAIQ. One such MAIQ question was 'Have you had specific experiences with people with an Autism Spectrum Disorder (ASD)'. This question provided a wide range of responses when asked of interview participants, which ranged from brief encounters to practical experience instructing individuals with ASD. Other questions that were also problematic, were demographic information which sought to obtain information on age, intended area of study and intended level of study. The limited number of questions that sought to measure attitudes towards the inclusion of students with ASD, in Section 3 of the MAIQ, also constrained the possibility of receiving significant results.

Overall the MAIQ was generally a good instrument for measuring preservice teachers' knowledge of and attitude toward the inclusion of students with ASD; however for further research modifications will need to be made in order to address the lack of specificity in some questions on MAIQ questions. Finally, social desirability may have also influenced the answers of many interviewees, as they were aware of the premise of the study.

Conclusions and Implications.

Trends in diagnosis and prevalence of ASD (1 in 100 children) suggest that more children with ASD will be entering the school systems, and preservice teachers will need specific training and then support to meet the needs of children with ASD once these preservice teachers transition to inservice positions. Preservice teachers must be adequately prepared for the role they will play with children with ASD and the classroom situations in which they will placed. From the responses on the MAIQ and the interviews, this sample of preservice teachers

perceived they would receive strong support from the schools to assist children with ASD, including the presence of special education teachers and paraprofessionals in their classrooms. This type of thinking by preservice teachers in this sample shows how unprepared and unaware they are to the reality of their profession.

In reality many inservice teachers have highly constrained personnel support resources in the classroom (Justice, Anderson, & Greiner, 2003; Borman & Dowling, 2008). Therefore, it is extremely important to prepare all preservice teacher (both general and special educators) with the knowledge, skills, and classroom strategies that are effective and essential for teaching children with ASD as well as children with other disabilities. Making them aware of the limited resources and difficulties they may face in becoming inservice teachers, will assist in providing a more accurate attitude towards inclusion and teaching.

Teacher preparation programs should incorporate and provide all preservice teachers with content in instructional skills, collaboration skills, training, and field experience, which have been found to convey significantly positive attitudes toward the inclusive education of children with disabilities. (Leyster 1988; Reber, Marshak & Glor-Scheib 1995; Scruggs & Mastropieri 1996; Heflin & Alaimo, 2007). As well as create seminars to allow preservice teachers to interact and learn from professionals that are already in the teaching field. Once inservice, school districts should also provide much needed support to staff of inclusive classrooms, both in private and public schools. In future studies, the use of a larger sample and a more diverse population and a modified questionnaire may yield significant findings on the impact of years in college, experience, intended level to teach, and area of study on knowledge of ASD and attitude towards in the inclusion of ASD.

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APPENDIX A

Autism Inclusion Questionnaire – Preservice Teachers' Version #

DIRECTIONS: Please mark your answers on this questionnaire by UNDERLINING them. Then SAVE it (please do NOT change the title) and return it as an attachment to the email address this message came from.

Section 1: Demographic Information and Experience (please underline your answers)

Gender: Male Female

Age: 18 – 24 years 25 – 30 years 31 – 40 years 41 years or older

What year of college are you in? 1st year 2nd year 3rd year 4th year Post-Bac or Grad

Do you plan to teach after completing your degree? Yes Maybe No

What area(s) may be your teaching focus (underline as many as apply)?

Social sciences/History Mathematics Language Arts Science General/elementary Education Special Education

Other _____

At what level(s) are you interested in teaching (underline as many as apply)?

Pre-K/Kindergarten Elementary Middle School High School Post-secondary/adult Other _____

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**s with people with an Autism Spectrum Disorder (ASD)? Yes No

If 'Yes', please explain:

Section 2: Knowledge of Autism Spectrum Disorders

Underline 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 underline 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 underline the number of 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**.	1	2	3	4	5	6	N
2. Children with an **ASD** should be integrated in general education settings.	1	2	3	4	5	6	N
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**.	1	2	3	4	5	6	N
4. The academic ability of the student is an important factor in the successful inclusion of a student with an **ASD**.	1	2	3	4	5	6	N
5. The severity of disability is an important factor in the successful inclusion of a student with an **ASD**.	1	2	3	4	5	6	N
6. The student's personality is an important factor in the successful inclusion of a student with an **ASD**.	1	2	3	4	5	6	N
7. The attitude of the staff is an important factor in the successful inclusion of a student with an **ASD**.	1	2	3	4	5	6	N
8. All students with an **ASD** should be included in general education settings.	1	2	3	4	5	6	N
9. Children with **special educational needs** should be integrated in general education settings.	1	2	3	4	5	6	N

	Strongly Agree	**Agree**	**Somewhat Agree**	**Somewhat Disagree**	**Disagree**	**Strongly Disagree**	**No opinion or Neutral**
10. One on one intervention is an important factor in the successful inclusion of a student with an **ASD**.	1	2	3	4	5	6	N
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**.	1	2	3	4	5	6	N
12. The use of reinforcement schedules is an important factor in the successful inclusion of a student with an **ASD**.	1	2	3	4	5	6	N
13. Medication and drug therapy is an important factor in the successful inclusion of a student with an **ASD**.	1	2	3	4	5	6	N
14. Children with **ADHD** should be integrated in general education settings.	1	2	3	4	5	6	N
15. Only teachers with extensive special education experience can be expected to deal with students with **special education needs** in a school setting.	1	2	3	4	5	6	N
16. The attitude of the staff is an important factor in the successful inclusion of a student with **special needs**.	1	2	3	4	5	6	N
17. Only teachers with extensive special education experience can be expected to deal with students with an **ASD** in a school setting.	1	2	3	4	5	6	N
18. Inclusive education enhances the learning experience of students with disabilities.	1	2	3	4	5	6	N

	Strongly Agree	**Agree**	**Somewhat Agree**	**Somewhat Disagree**	**Disagree**	**Strongly Disagree**	**No opinion or Neutral**
19. The severity of disability is an important factor in the successful inclusion of a student with **special needs**.	1	2	3	4	5	6	N
20. Only teachers with extensive special education experience can be expected to deal with students with **ADHD** in a school setting.	1	2	3	4	5	6	N
21. Students with **classic autism** are too impaired to benefit from the activities of a regular school.	1	2	3	4	5	6	N
22. A good general education teacher can do a lot to help a student with an **ASD**.	1	2	3	4	5	6	N
23. No discretionary financial resources should be allocated for the inclusion of students with an **ASD**.	1	2	3	4	5	6	N
24. The attitude of the staff is an important factor in the successful inclusion of a student with **ADHD**.	1	2	3	4	5	6	N
25. Students without disabilities can benefit from contact with students with an **ASD**.	1	2	3	4	5	6	N
26. Special schools specifically designed for their needs are the most appropriate placement for students with an **ASD**.	1	2	3	4	5	6	N
27. It is important for children with an **ASD** to receive special education services at school.	1	2	3	4	5	6	N

Section 4: Classroom Practices

From the following list, please underline 1) whether you have HEARD OF the strategy or not, AND 2) whether you think it is or could be EFFECTIVE **in better including a student with an ASD**:

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

Strategy	Heard of this?		Effective? (Underline One)				
1. Applied behavior analysis (ABA)	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
2. Art therapy	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
3. Assistive technology	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
4. Augmentative and alternative communication (AAC)	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
5. Behavior contract	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
6. Choice making	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
7. Direct instruction of social skills	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
8. Discrete trial training (DTT)	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
9. Edible reinforcement	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
10. Educating typically developing students about ASD.	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
11. Extra time to complete assignments.	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
12. Facilitated communication (FC)	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
13. Floor time	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
14. Functional Behavior Assessment/Analysis (FBA)	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
15. Gentle Teaching	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know

Strategy	Heard of this?		Effective? Choose One				
16. Incidental teaching	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
17. Joint action routines (JARs)	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
18. Peer initiation	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
19. Peer tutoring	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
20. Picture exchange communication system (PECS)	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
21. Pivotal response training (PRT)	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
22. Play-oriented strategies	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
23. Preferential seating	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
24. Priming techniques	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
25. Prompting techniques	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
26. Providing a student "home base"	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
27. Providing a list of schedule changes for the school day	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
28. Providing a list of teacher expectations for in-class behavior	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
29. Relationship development intervention (RDI)	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
30. Scripts (e.g. cognitive scripts)	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
31. Sensory integration (SI)	Yes	No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know

Strategy	Heard of this?	Effective? Choose One				
32. Social stories	Yes No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
33. Structured teaching (TEACCH method)	Yes No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
34. Token economies	Yes No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
35. Van Dijk curricular approach	Yes No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
36. Verbal reinforcement/Praise	Yes No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know
37. Visual activity schedules	Yes No	Very Effective	Effective	Somewhat Effective	Not Effective	Don't Know

Section 5: Future Involvement in Research

Might you be interested in participating in a brief interview to discuss your answers from the Questionnaire?

Yes No

Might you be interested in participating in this study again in the future? Yes No

Please type any additional comments or notes you wish to share in the area below:

Thank you for completing this questionnaire.