SUPPORTING GENERAL EDUCATION TEACHER’S UNDERSTANDING
AND IMPLEMENTATION OF BEST PRACTICES
FOR AUTISM SPECTRUM DISORDERS
IN THE CLASSROOM

A Project

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Karla Wright Miller

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SUPPORTING GENERAL EDUCATION TEACHER’S UNDERSTANDING AND IMPLEMENTATION OF BEST PRACTICES FOR AUTISM SPECTRUM DISORDERS IN THE CLASSROOM

A Project

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Graduate and Professional Studies in Education
Abstract

of

SUPPORTING GENERAL EDUCATION TEACHER’S UNDERSTANDING AND IMPLEMENTATION OF BEST PRACTICES FOR AUTISM SPECTRUM DISORDERS IN THE CLASSROOM

by

Karla Wright Miller

Autism Spectrum Disorder (ASD) is a group of pervasive developmental disorders that cause significant impairments in communication and social interaction. The Centers for Disease Control’s (CDC) Autism and Developmental Disabilities Monitoring Network (ADDM) estimates that as of 2006, the number of children diagnosed with an Autism Spectrum Disorder is 1 in 88. The CDC’s estimated occurrence of Autism Spectrum Disorder increased 23% during 2006 to 2008 and 78% during 2002 to 2008. The influx of these students in public schools highlights the need for educating general teachers as to the characteristics of the disorder, as well as, providing research based academic and behavioral interventions to be used in the classroom so that students with Autism Spectrum Disorder might be successfully included. In general, most students with Autism Spectrum Disorder have been educated in general education classrooms with teachers who have little experience and training in working with this specific population.
The goal of this project was to determine the knowledge of Autism Spectrum Disorder in a group of primary general education teachers.

This data was then used to create an on-site staff development presentation providing teachers with training to include students with Autism Spectrum Disorder in the general education classroom.

___________________________________, Committee Chair
Rachael A. Gonzales, Ed.D.

___________________________
Date
I want to thank all of the general education teachers who took the time to answer survey questions and then gladly participated in the training portion of this project. I would also like to thank the site principal who gave me the permission to provide the in-service training to the site’s teachers. I would especially like to thank Dr. Rachael Gonzales, Ed. D. who helped coordinate the project, reading and editing it repeatedly until it was finished.
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Chapter 1

INTRODUCTION

Autism Spectrum Disorder (ASD) is a group of pervasive developmental disorders that cause significant impairments in communication and social interaction. Many individuals affected by this disorder have narrow, restricted interests and adapt poorly to changes in their schedules and routines (De Rosier, Swick, Ornstein-Davis, Sturtz-McMillen & Matthews, 2011). ASD is a spectrum disorder in that all of these deficits present on a continuum from severe to mild; with classic autism coupled with intellectual disability on one end and High Functioning Autism (HFA) or Aspergers Syndrome (AS) with average to superior intelligence on the other. There are also variations within the symptoms. One child may have more social impairments, finding it hard to navigate group games; another could have more intensified and odd interests, such as, bus routes, trains, or video surveillance systems. There are high rates of co morbid mood disorders with AS and HFA. Individuals with a diagnosis of Asperger Syndrome have a 65% chance of also having a diagnosis of Anxiety, Depression, or ADHD (Hudson & Farrugia, 2006). This may be due to the prevalence of problematic peer interactions that contribute to the development of mood disorders, such as anxiety and depression (Ginsburg, La Greca, & Silverman, 1998). Studies have also shown a higher incidence of behavioral problems in children who have a diagnosis of AS or HFA (Sofronoff, Attwood, Hinton, & Levin, 2006). Auditory processing and sensory integration issues are common in children with ASD and may be the source of puzzling outbursts and behaviors (Tippett, 2004). Their extreme deficiencies in social skills means they are also
at higher risk of being socially isolated by peers (Locke, Ishijima, Kasari, & London, 2010). All of these factors are relevant in how the symptoms manifest in the student and therefore which interventions and accommodations, academic and behavioral, are used by teachers in the general education and special education classrooms.

**Background**

The Centers for Disease Control’s Autism and Developmental Disabilities Monitoring Network (ADDM) estimates that as of 2006, the number of children diagnosed with an Autism Spectrum Disorder is 1 in 88. The estimated occurrence of ASD’s increased 23% during 2006 to 2008 and 78% during 2002 to 2008. It is thought this is due to increased awareness of ASD, as well as, improved and expanded diagnostic criteria (Johnson & Myers, 2010). Whether there is an actual increase in the disorder or if the rise is due to better diagnostic criteria, is up to debate but one thing is clear, there are more and more students in the public school system that have an ASD. There has been considerable research in the last 10 years into the causes of Autism. In 2009, annual expenditure on autism research in the U.S. was over $225 million dollars. The government is the biggest source of funding at 65% with the remaining 35% of the research funding coming from private sources (Sullivan, 2009). According to Autism Speaks, in 2011, funding for Autism research dropped to 169 million dollars, presumably due to budgetary cuts (National Institute of Health, 2013). However, little investigation has been done as to how to best educate children on the spectrum in the mainstream classroom. Research related to education practices so far has predominantly focused on the negative outcomes of these students in the general education setting due to bullying,
isolation, and loneliness and not into best teaching practices for this population (Jones & Frederickson, 2010).

Even though the diagnosis of Autism Spectrum Disorder has increased more than 50% in the last ten years, the actual number of students with the disorder might be much higher. A five-year study conducted by the Brain Research Foundation (May, 2011) used a population-based sampling that looked for autism among all children with or without identified disabilities. The results were surprising. They found the occurrence of the disorder to be almost three times higher (2.64%) than previously estimated. In 2011, over 49.4 million students were slated to attend public schools in the United States (National Center for Education Statistics, 2012). If the rate of Autism Spectrum Disorders in the above study is correct then the number of students entering the public school system in 2011 with an ASD would have been over 1.3 million and teachers can expect to have a student with ASD every three to four years.

Statement of Research Problem

The influx of these students in public schools highlights the need for educating teachers as to the characteristics of the disorder, as well as, providing research based academic and behavioral interventions to be used in the classroom so that students with ASD might be successfully included. Most students with Asperger Spectrum Disorder are educated in general education classrooms with teachers who have little experience and training in working with children with special needs (Myles & Simpson, 2002). Lack of training might hinder successful inclusion of students with disabilities. Inclusion refers to teaching children with special needs and typical peers together in the same
learning environment. The idea is that every child is a member of the school and all should be taught together. Students with disabilities benefit from learning in regular classrooms, while their peers gain from being exposed to children with a variety of talents and temperaments (Dybvik, 2004). Overall, the research on the benefits of inclusion is positive for those students who have HFA or AS; in particular, it helps to increase their social engagement and interactions with peers (Dahle, 2003). If teachers feel they are adequately prepared and trained to teach students with Autism Spectrum Disorders, a successful inclusion scenario is more likely.

There is a clear need for increased teacher preparedness and for research based accommodations to service the growing number of these students included in the general education classroom. Although there are a variety of instructional strategies designed for students on the Autism spectrum, there is no one approach or strategy that is proven to be effective with every single child with an ASD (National Research Council, 2001). This may be due to the variations of characteristics and behaviors that present in this population. No single child with an ASD has the same combination of deficits or strengths so designing comprehensive inclusionary practices is difficult. However, this does not mean that a generalized guideline cannot be developed and adjusted given the child’s needs.

In a study done by the U.S. Department of Education, Office of Special Education and Rehabilitative Services (2006), most general education teachers do not feel adequately prepared or knowledgeable enough to successfully include a child with an Autism Spectrum Disorder in their classroom and felt they needed additional training
(Robertson, Chamberlain, & Kasaril, 2003). Even though there are many tips and guidelines available for mainstreaming or including students with an ASD there has been very little research into which specific instructional strategies are actually successful (Moores-Abdool, 2010). The lack of a visible disability also confuses educators. A teacher with little knowledge of the disorder may assume a student is being defiant when in reality they are reacting to a stressor or are unable to communicate their needs properly (Tippett, 2004). Many students with this disorder are abnormally high-functioning in one area like, math or reading, while at the same comparatively low in another like, comprehension or hand-writing (Ozonoff, Dawson, & McPartland, 2002). This is confusing for educators who may expect the students’ abilities to be more evenly spread. The goal of this project was to determine the knowledge of Autism Spectrum Disorder in a group of primary general education teachers. This data was then used to create an on-site staff development presentation providing teachers with training to include students with Autism Spectrum Disorder in the general education classrooms.

Several general education teachers at a northern California elementary school were interviewed to establish their understanding of Autism disorders in general, as well as their knowledge of interventions and best practices pertaining to this group. The information culled from the interviews informed a training in which general educators were given a comprehensive description of the disorder and best practices for including them in the general education classroom. This in-service served to familiarize teachers as to the behavioral characteristics of Autism Spectrum Disorders as well as providing them with practical interventions and accommodations to serve all of their students.
Theoretical Framework

The number of children diagnosed with an Autism Spectrum Disorder is increasing. Most of these students are included in the general education classroom. Using resources at the school site, namely the special education teacher, as a vehicle in providing professional development to general education teachers regarding the characteristics and accommodations best suited for these students will increase the likelihood of their successful inclusion in the regular classroom. Professional development, also known as staff training, refers to the practice of formal trainings that enhance the skills, knowledge and pedagogy of teachers. Special educators can also offer in-services on interventions, assessments and how they inform classroom instructions, and information accommodations for various disabilities and disorders. This model of professional development delivery will help to foster collaboration among the teachers while meeting their professional development needs.

Definition of Terms

*Hyperlexic* – unusual ability to read at a much earlier age than expected

*Inclusion* – The practice of educating children with disabilities in the same classroom as those without disabilities (Smith, 2007).

*Individual Education Plan* - A legally binding document that details the special education services a child will receive. It will include classification, services, and academic and behavior goals (IDEA, 2004).

*Joint Attention* – A developmental milestone wherein a toddler tries to engage the attention of a caregiver to show excitement over an object or event. A typically
developing toddler will try to engage the caregiver’s interest by pointing at the object, looking at the caregiver and trying to involve the caregiver in his or her excitement (Johnson & Meyers, 2010).

**Least Restrictive Environment** – Legal requirement that ensures to the “maximum extent appropriate” children are placed in classroom settings with students who are non-disabled (IDEA, 2004).

**Social Skills** – Interpersonal skills that are needed for successful communication and relational interactions to function normally (Atwood, 2007).

**Assumptions**

There is a general assumption that general education teachers can instruct students with Autism Spectrum Disorders effectively without training but, in fact, most multi-subject credentialing programs do not train general education teachers in this area. However, special educators do receive substantial training in the characteristics of and accommodations for students with disabilities. Using resources on school site, such as, the special education teacher, is an excellent alternative in providing professional development than at the district. Inter-staff training is not only a less expensive way to provide professional development but also encourages a more collaborative relationship model between special education teachers and general education teachers. Training through professional development will make general education teachers more open to including students with ASD in their classroom as well as benefiting the students.
Justification

The increased number of children being diagnosed with Autism Spectrum Disorders in the United States and the likelihood that more general education teachers are going to have this population in their classroom warrants larger studies into the general knowledge base of educators as to the disorder but most importantly increased training in how to effectively accommodate and include them in their classrooms. The research project will benefit general education teachers in that they will have more tools to address the needs of not only students with ASD but might also be applied to others with or without special needs. These accommodations and best practices can be used for the benefit of all their students not just those with a diagnosed Autism spectrum disorder. The context of the project encourages collaboration between general and special education teachers as more students with Autism Spectrum Disorders are coming into the general classrooms. In addition, more schools and districts are moving towards full inclusion models where all students are educated in the same educational setting. The framework of accommodations provided can be used as a model for incorporating other students with varying disabilities into the general education classroom. This will increase the likelihood that teachers will be more open to the inclusion of special needs students in their classrooms.

Limitations

The limitations of this project include the small sample size of the teachers and the small size of the school. Due to other teacher responsibilities the time allotted was insufficient. Autism Spectrum Disorder is a complicated and variable disability so longer
and more in depth trainings are needed as well as follow up meetings to see if training has been effective. Thus far, a district-wide recognition of the increasing numbers of students with ASD’s has not been met with a plan to train teachers to accommodate them.
Chapter 2

REVIEW OF LITERATURE

With Autism diagnoses rising so dramatically and the subsequent inundation of students with this disorder in the school system, the need for trained and prepared educators is paramount. Teachers knowledgeable as to the symptoms and characteristics of this disorder, as well as, skillfully providing relevant interventions and accommodations are vital to fully integrating these individuals successfully, not only into the classroom, but also into society at large. This chapter will address the following; definition of Autism Spectrum Disorder, history of ASD, etiology, assessment placement, role of educators, teacher preparation, and staff development.

Definition of Autism Spectrum Disorder

Autism spectrum disorder can be described as pervasive deficits in social interactions, communication, and patterns of restricted interests and behavior. All of these deficits and/or behaviors occur on a continuum of intensity and severity (Attwood, 2007). Each individual presents a unique combination of symptoms and characteristics which makes diagnosis more difficult. There are three forms of ASD including; Autism Disorder (AD), which may be accompanied with intellectual impairments, Asperger’s Syndrome (AS), and Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS) (Centers for Disease Control, 2010).

Social skill deficits, and restricted and repetitive interests and behavior are the primary characteristics for all three ASD’s; Autism Disorder and Pervasive Developmental Disorder also have a language delay component that is not present in
individuals with Asperger Syndrome or High Functioning Autism (Johnson & Meyers, 2010).

**History of Autism Spectrum Disorder**

In 1908, a Swiss psychiatrist, Eugen Bleuler, devised the word "autism" from the Greek “autos” meaning “self”, to describe a group of schizophrenic patients who were self-absorbed and seemed to avoid human contact (Ashok, Baugh, & Yeragani, 2012). In 1943, a psychiatrist at John Hopkins University, Leo Kanner, described Autism in a small group of children in his care, who were very detached and seemingly indifferent to others (Kanner, 1943). Almost simultaneously, a Viennese pediatrician, Hans Asperger in 1938 wrote about a group of children who exhibited the same symptoms as Kanners’ except with higher language and cognitive abilities (Asperger, 1938).

Soon after Autism was “discovered” in the 1940’s scientists came to believe that it was caused from bad parenting. They saw children from orphanages and institutions that had little, meaningful contact with others, exhibiting the same symptoms. They assumed that children who were autistic, but in a family, must somehow be suffering from neglect or lack of bonding with the mother (Wing, 2001).

Asperger’s work was largely ignored until the late 1980’s and early 1990’s when his work was translated into English and several researchers began to compare his research with their own observations of individuals with the same symptoms. Asperger Syndrome was formally recognized in the fourth addition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) in 1994 (American Psychiatric Association, 1994).
Autism Spectrum Disorders were not eligible for special education services until 1990 with the Individuals with Disabilities Education Act (IDEA, 1990). Before IDEA many students who were ASD, were labeled with mental retardation, speech impairment, and emotional disturbance in order to receive services. After IDEA was passed there was a marked increase in students with ASD entering the school system, reflecting the shift of categories with the older children, as well as the newly diagnosed. Finally, the long process begun by state and federal governments in the mid 1950’s to close institutions where many of the more severely Autistic children were housed came to an end. These numbers were added into the newly diagnosed as well, seemingly inflating the actual number individuals with ASD overnight (Johnson & Meyers, 2010).

**Autism Spectrum Disorders**

Autism Spectrum Disorder is a neurologically based developmental disorder in which deficits and characteristics present on a continuum from slightly impaired to the more severely impaired. Deficiencies in social interactions, communication and repetitive and restrictive behaviors are hallmarks of the disorder (CDC, 2010). Following is a description of the three categories of ASD as well as further explanation of the specific deficits associated with the disorder.

**Autistic Disorder**

Autistic Disorder, or sometimes called classic autism, is the most severe of the three disorders and is often coupled with intellectual disability. Delayed or non-existent language is a defining characteristic of AD with over half of those diagnosed with AD having no functional language at all (Rogers, 2004). An individual with AD may have
severe social impairments as they do not interpret social cues very well and may go on and on in a particular subject without regard to whether the other person is interested. As toddlers, many do not respond to their name. In fact, many parents initially believe their child suffers from hearing loss. Restrictive and repetitive behaviors may involve rocking, twirling, flapping of arms, or even self-injurious actions. Interactive play is usually very difficult; a child with AD may continually focus on one toy or type of toy refusing to share or engage with other children. There are also deficits in something called Theory of Mind (TOM), understanding the perspective of another even if it is different than your own (National Institutes of Health, 2009). This deficit, in particular, makes sharing or compromising difficult. Both of which are necessary in making friends, functioning properly in groups and school settings very problematic.

**Asperger Syndrome**

Asperger Syndrome is the mildest and highest functioning of the Autism Spectrum Disorders. It is also referred to as High Functioning Autism. Intellectual ability is normal to very superior in range. There are no language delays with AS, as there are in AD and PDD-NOS. Individuals with this disorder may speak in a monotone voice or use an odd inflection or prosody (American Psychiatric Association's Diagnostic and Statistical Manual-IV, 2000). These children will likely be isolated socially because of their deficits in social skills and restricted interests. Failure to look into another’s eyes, to pick up non-verbal social cues, to engage in games and gatherings appropriately; essentially hampers their ability to make friends. Many individuals with AS are quite aware that they don’t quite fit in, as such there is often a co-morbidity of mood disorders,
such as, depression, Oppositional Defiant Disorder, and anxiety with AS (Attwood, 2007). Whether this is due to the awareness of their differences or if this is organic is unknown but it is seen more often in the higher functioning individuals on the spectrum. Ginsburg, La Greca & Silverman’s (1998) studies of adolescents in the general population have shown that negative peer interactions increased the likelihood of anxiety and behavioral problems. Tourette’s, ADHD, and Obsessive Compulsive Disorder are other disorders that often present in an individual with AS (National Institute of Health, 2013). They are also likely to have auditory processing and sensory integrations issues, becoming over stimulated by sudden or loud noises, such as, a boisterous classroom, concert, football game, etc. Many times the child with AS may respond inappropriately to overstimulation, such as, rocking back and forth to self soothe, lashing out at those nearby, or physically retreating from the loud noise (Hyman & Tobin, 2007). There are often issues with motor coordination so anything from riding a bike, running, catching a ball, to handwriting could be problematic, delayed, or impaired for these individuals (Johnson & Meyer, 2010). Changing from one activity or setting to another is often difficult with many tantrums occurring during transition times. All of these traits vary widely in their presentations and intensity.

**Pervasive Developmental Disorder – Not Otherwise Specified**

PDD-NOS is a sub category wherein the child does not fully fit the Autism Disorder or Asperger Syndrome criteria but there are functional impairments in social interactions and communication. The National Institute of Health asserts that symptoms vary widely but repetitive, restrictive play and social skill deficits are normally present in
the child (2013). Some children do not speak, and others have normal language
development and many will have sensory integration issues.

**Deficits in Social Interaction**

Children on the Autism Spectrum universally exhibit deficits in social interaction. The degree in which this symptom presents differs in every child. The work of Johnson & Myers (2010) states that in individuals with ASD there is a lack of either interest and/or knowledge of how to connect and interact with others. Many do not engage in eye-contact and therefore miss important facial cues as to the intent of others. They can often be found alone on the playground or by themselves in other social settings. This can sometimes be a matter of preference but often times their isolation is a consequence of their lack of social skills. Classmates might find them odd or disconcerting. A child with ASD may not understand the give and take of common board or playground games much less every day interactions. They often have trouble participating in group activities as they are not adept at gauging the emotional state of others. In fact, understanding the perspectives of others, or “theory-of-mind” (TOM) is an important developmental marker. In typically children, TOM starts to develop by four years old but is underdeveloped in the child with ASD (Hyman & Tobin, 2002).

Children with an ASD, especially high functioning autism or Asperger’s, want to engage with others socially and have friendships but have difficulty navigating the process. The failure to do so can lead to withdrawal and/or antisocial behaviors, especially in teenagers. There is also an increased risk of forming unsuitable acquaintances. Learning how and who to form friendships with is an important social
skill that is difficult to teach, but doing so can help a child on the spectrum form healthy friendships and also can help to minimize bullying and victimization (Wing, 2001).

Research done by Dr. Tony Attwood (2007) has shown that the skills necessary to foster the back and forth interactions needed to cultivate relationships are complex, subtle, and multifaceted. School is not only the place where children are sent to learn academic curriculum but by default they are also being schooled in complex social norms. These social models of how individuals and groups appropriately work with one another are then played out in the work place as an adult. In the chart below (see chart 1) is a list compiled by Dr. Atwood detailing the complex interplay of skills needed for a child to navigate a conversation or play date (Attwood & Gray, 2010).

**Chart 1- Requisite Group Skills**

- Knowing how to enter into other children's activities
- Knowing how to welcome other children into one's own games or activities
- Recognizing when and how to help others, and seeking help from others
- Providing compliments at the right times and knowing how to respond to compliments
- Knowing the right time and way to offer criticism
- Being able to accept and handle criticism from others
- Incorporating the ideas and suggestions of others into an activity
- Give and take in conversation and activities.
Deficits in social communication, on some level, is a hallmark of all ASDs; however language deficits are specific only to AD and PDD-NOS (DSM-IV in 1994). Language delays are often the first sign to parents and pediatricians of a disorder. Typical first word development is reported but often upon closer scrutiny, such as, an examination of family videos, the way in which these words were used by the child is atypical (Hyman & Tobin, 2007). Johnson & Meyers (2010) noted that many children with ASD have abnormal prosody, echolalia speech, and speak with a “sing-song” voice pattern. Between 15 and 24 months, between 25%-30% of children with ASDs lose their speech altogether.

Sixty percent of all social communication is done through body language and facial expression; the other forty percent represents tone of voice (Mehrabian, 1972). If a child is not looking at the face or the body language of the person talking to them they may miss out on important social cues; finding themselves constantly playing catch up or completely missing the intent of the speaker altogether. Atwood (2007) claims that individuals who have receptive language delays can over time become anxious and nervous in social situations.

**Restrictive and Repetitive Behavior**

Hyman and Tobin (2007) in their research noted that many individuals on the Autism Spectrum exhibit compulsive behaviors that are performed ritualistically, no matter the inconvenience to themselves or others. Whether this is lining up trains in a particular order or performing motor movements over and over again, such as, humming or rocking. Interruption of a ritual might lead to a temper tantrum.
Kanner, in his book *Nervous Child* (1943), described perfectly the repetitive and restrictive behaviors in one of his patients:

“But the child’s noises and motions and all of his performances are as monotonously repetitious as are his verbal utterances. There is a marked limitation in the variety of his spontaneous activities. The child’s behavior is governed by an anxiously obsessive desire for the maintenance of sameness that nobody but the child himself may disrupt on rare occasions. Changes of routine, of furniture arrangement, of a pattern, of the order in which every day acts are carried out, can drive him to despair (p. 59).

In summary, each child with Autism Spectrum Disorder presents these deficits within a range of intensity and severity making diagnosis more difficult. According to Johnson & Myers (2010) students with ASD often have difficulties socializing with other children due to impairments in the ability to perceive and process social interactions correctly. Many are resistant to changes in schedules and transitions which may cause anxiety and distress. Students with ASD may react to this stress by tantruming or using some sort of physical motion, such as, rocking, humming, or flapping to self soothe. Many engage in ritualistic and compulsive behaviors, such as, lining up toys in the exact way, washing hands repeatedly, or turning off lights in a specific order. If this ritual is interrupted they may become very upset. Rules and adherence to order can be very important to children with ASD; creating a sense of predictability in their surroundings. Auditory processing deficits are very common in children on the spectrum. Many
children with an ASD seem to be in a world of their own, responding slowly to verbal queues.

**Etiology**

According to Hyman & Tobin (2007) twin and family based studies strongly suggest that Autism Spectrum Disorders are genetic; however there appears to be significant interplay between genes and environmental factors. Studies have shown that Autism is more likely to present if the mother has been exposed to environmental toxins during pregnancy (Hyman & Tobin, 2002). There is also some evidence that mothers who have auto immune disorders are more likely to have a child on the spectrum. Whatever the actual cause, there are physical changes to the brain of the developing fetus, specifically the cerebellum and the limbic system which happen in utero. The cerebellum controls motor coordination and the limbic system controls a variety of complex functions; emotion expression and regulation, long term memory, to name a few. Brain studies have shown children with ASD have smaller amygdales than typically developing children (Sofronoff, Attwood, Hinton, & Levin, 2006). Brains scans have also highlighted other differences, such as, cell density in the frontal lobe, networking malfunctions between various regions of the brain, and faulty mirror neurons which enable humans to imitate actions of others (Hyman & Tobin, 2007).

Many parents have been confused as to the origin of Autism Spectrum Disorders because of misinformation from a study claiming that vaccinations caused Autism. ASDs are not caused by the chemicals and preservatives in vaccinations as purported in a now resoundingly discredited 1998 study by Dr. Andrew Wakefield (Sugarman, 2007). Dr.
Wakefield falsified data that suggested Autism was linked with the Measles, Rubella and Mumps vaccine that are usually given to children when they are about 18 months. This is about the same time that parents and doctors become concerned if toddlers have not reached certain social and communication milestones. The false connection raised between the two has caused an unprecedented backlash against vaccines in Britain and the United States. A landmark study by Madsen, Lauritsen & Pedersen (2003) on a large sampling of 500,000 children in Denmark found the occurrence was the same in both vaccinated and unvaccinated children, proving there was no link between vaccinations and Autism. The same study has been replicated in many other countries.

Assessment

Diagnosis of an Autism Spectrum Disorder is based upon the diagnostic criteria found in the Diagnostic and Statistical Manual of Mental Disorders 4th edition, (American Psychiatric Association, 2000). Most children are referred for assessment by parents or primary care providers because of language delays. Many pediatricians are implementing a diagnostic Autism screening to all patients in their care. Per the American Academy of Pediatrics, it is recommended children should be screened for all developmental delays and disabilities at 9, 18, and 24 months and specifically for Autism Spectrum Disorders at 18 and 24 months (Centers for Disease Control, 2011). At age 2, a diagnosis by a skilled professional is considered reliable but most children do not get a final diagnosis until they are school age (Centers for Disease Control, 2010). Unfortunately, this might also mean vital intervention is delayed.
During the assessment process, input from parents, teachers, and anyone who is familiar with the child across multiple settings, are collected to get an accurate history. This is accompanied by clinical observations and testing by some or all of the following; developmental pediatricians, child psychologists, child neurologists, and child psychiatrists (Hyman & Tobin, 2007). Children that display symptoms of autism but have no language delays are often diagnosed with Asperger’s Syndrome or High Functioning Autism. If language delays are present along with the other symptoms then they are diagnosed with Autism Disorder (Johnson & Meyer, 2010). If the threshold for an ASD is not met but the child still exhibits some autistic like behaviors and has language delays then they are diagnosed with PDD-NOS.

Placement

As of 2003, approximately 27% of all children with Autism Spectrum Disorder spent 80% of their full educational day in general education classrooms (27th Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act, 2007). According to the U.S. Department of Education (2006), the number of students age 3 to 21 in federally supported programs for autism increased from 22,000 in the 1993-1994 school year to 223,000 in 2005-2006. Depending on the severity of the disorder, they can also be placed in a special day class that is exclusively for students with autism, or in a Learning Handicapped class, or in a Severely Disabled classroom (Smith, 2007). Many times due to behavioral issues and misdiagnosis, students might be placed in an emotionally disturbed special day class (Ghaziuddin, 2002). Those that are included in the general education classroom might have a one-on-one aide, be pulled out
by the Resource Specialist for extra instruction, or they may receive all of their accommodations and instruction in the general education classroom (Dybvik, 2004). Other support services include Occupational Therapy services for issues with motor coordination or working with a Speech and Language pathologist who specializes in treating communication and swallowing disorders.

**Role of Educators**

The number of children diagnosed with Autism Spectrum Disorders is on the rise. The necessity for teachers who are trained and knowledgeable as to how to best meet these students’ academic and behavioral needs is vital to the future success of this population. The intelligence of many students on the spectrum and their ability to hyper-focus on specific areas and problems is a potential resource that deserves to be nurtured and cultivated for the common good (Bauer, 1996). The severity of the disorder determines the classroom placement and therefore the role and responsibilities of the individual educator. Determining the most beneficial placement for a student on the spectrum, especially the higher functioning individuals, should be done on a case by case basis, taking into account their individual deficit and strength profile. However, in a study by Sansoti & Sansoti (2012) educator participants stated that students with Autism Spectrum Disorder will likely benefit from exposure to typically developing peers in a full inclusion setting. The peer pressure from the environment, teacher, and students, almost “forces” them to develop more socially appropriate skills. Teachers stated that social aptitude and communication were the skills most likely to increase in an inclusive setting. In a broader review of the literature, (McGreger & Vogelsburg, 1998) concluded
that inclusive settings provided high levels of social interaction, academic development, and communication skills for students with and without disabilities.

**General Education**

The chief responsibility of a general education teacher is to teach students the curricula as designated by the school district. In addition, the legal mandate for every teacher, according to Individuals with Disabilities Education Act Amendments of 1997, is to teach all students with or without a disability in the Least Restrictive Environment (LRE) which to the maximum extent possible is in the general education classroom (IDEA, 2004). Since more than half of the students with disabilities spend at least a quarter of their time in the general education classroom, the need for teachers to understand their role in implementing the students’ Individual Educations Plan (IEP) is essential (National Center for Education Statistics, 2009). The teachers’ role on the IEP team is to provide data on the students’ behavior and their progress toward meeting their annual goals.

There is an increased focus recently for instruction in social emotional issues. The National Scientific Council on the Developing Child (2004) defines social emotional development is defined as an ability to identify and understand one’s own and others’ feelings, establish and sustain relationships with both peers and adults, and regulate one’s behavior, emotions, and thoughts. Learning how to regulate emotions is harder for some students than learning how to read and write. Lack of emotional regulation can have negative consequences not only in the school but later in the work place as certain norms are expected when interacting in and between groups of people.
**Special Education**

All individuals trained in special education receive specific instruction to work with students who have varying ranges of learning disabilities as well as students that are diagnosed with mental, emotional, developmental, and physical disabilities. There are two main classifications of special education teachers; mild/moderate and moderate/severe. Students in a mild/moderate setting include individuals with specific learning disabilities, moderate mental retardation, other health impairments, emotional disturbance, and Autism Spectrum Disorders. Students in a moderate/severe setting include individuals with autism, deaf-blindness, moderate to severe mental retardation and multiple disabilities. Teachers who teach children with moderate disabilities ensure that lessons and teaching strategies are modified to meet the students’ individual learning needs. For students with more severe disabilities, educators teach independent living skills, like money management and cooking, as well as basic literacy, math, and communication (United States Department of Bureau of Labor Statistics (2012). Within these groups a district may have classes that are for students with Autism, for those who are Deaf, and the Blind. Overall, the main responsibility of special education teachers is to provide instruction by adapting and developing materials to compliment the special needs and learning styles of each student giving them access to the general education curriculum. Assessment is also a major component of a special educator job description. All teachers are responsible for meeting the specifications written in a student’s
Individualized Education Plan (IEP) whether that is in a general education classroom or a special education classroom.

**Accommodations**

An accommodation is a change that helps the student work around or even overcome his or her disability (National Dissemination Center for Children with Disabilities, 2012). This could be as simple as moving a desk or allowing extra “thinking time” before answering a question. The ultimate goal being that all students should have access to the curriculum. All parties, including teachers and parents, work together to assess and discuss the student’s individual needs and then lay out how the student’s educational needs will be met or accommodated in the IEP. Accommodations are not exclusive to the school setting but can also be implemented at home.

**Accommodations at Home**

After the initial shock of an Autism diagnosis for their child, many parents are saddened when they realize that the disorder is not something that goes away with time or is a disease that can be cured with medicine. Living with a child who is on the spectrum can be very frustrating depending on the severity and how the particular symptoms present in the child (Attwood, 2007). There are several accommodations at home that can make life easier for the child and the parent. Being consistent is very beneficial for a child with Autism Spectrum Disorder. They thrive in an arena in which they know clearly what the expectations and consequences of certain behaviors are. Rewards for good behavior teach the child exactly what is expected rather than just what is wrong. Schedules let the child on the spectrum know what is coming. This is important in that
many of these individuals get easily upset by changes and transitions (Smith, Segal & Hutman, 2012). There are also behavior modification methods, such as applied behavior analysis (ABA) that can be taught and implemented in the home with the help of service providers. ABA is a methodology rooted in the application of basic behavioral practices including positive reinforcement, teaching in small steps, prompting, and repeated practice in order to encourage the development of appropriate language, social interactions, and independent living skills (Rosenwasser & Axelrod, 2001). Accommodations at home will help the child function more successfully in the school atmosphere and will help the child generalize between the two settings.

**Accommodations at School**

Many students with this disorder are high-functioning in one area such as, math or reading, and low in another, like comprehension or handwriting. The academic profiles of these students are uneven in that they often do well at “cracking the codes” in reading, spelling, and numeracy but these skills do not necessarily transfer to other areas (Atwood, 2007). For example; many children with ASD are hyperlexic but have poor inferencing skills; even though they are seemingly able to read very complex texts, they will have difficulty grasping abstract concepts not specifically stated in the text. This is confusing for educators who may expect the students’ abilities to be more evenly spread. In addition, difficulty with motor coordination and in particular fine motor skills often results in poor handwriting. This carries over into other hand–eye coordination skills like those required in team sports which can be problematic for individuals with ASD (Wing, 2001). Social skills are often quite poor in that they are unable to read the social cues of
other students and teachers and therefore miss signals that help them navigate playground and classroom norms.

**Academic Strategies**

Children with ASD’s do best in a well-structured and quiet classroom (Attwood, 2007). Structured routines and transitions provide the needed predictability to help these students focus on the academics. Visual aids and written rubrics of assignments provide additional clues to expectations and procedures that help to accommodate gaps in auditory processing and focusing issues common in these students. High expectations and positive reinforcement go a long way in showing a student a clearly defined path to a successful classroom experience. Giving these logic oriented individuals an explicitly stated purpose for each learning activity helps motivation. Peer buddies are also invaluable in helping students with ASD navigate the social and academic world of school as they do better with one-on one interaction than in a group (Sansoti & Sansoti, 2112).

Students with ASDs can have significant behavioral issues that can present a challenge to general education teachers, especially those who have little knowledge of the disorder. Many of the characteristics of students with ASD, such as, obsessive compulsions, echolalia, and ticks or self-soothing motions, can impede their learning and can be disruptive in a general education classroom. Even more problematic are the socially deviant behaviors, such as, grabbing toys from classmates, pushing others in line, or tantrums (Eldar, Talmor, & Wolf-Zukerman, 2010). To classmates, the odd behaviors might be more understandable as part of the disability whereas the socially inappropriate
behaviors such as toy snatching, etc., seem to other students to be bullying and might negatively influence the student with ASD’s acceptance into the classroom (Wing, 2001). **Behavioral Strategies**

In a study by Sansoti & Sansoti (2012), teachers noted that many class-wide behavioral strategies implemented to benefit student with an Autism Spectrum Disorder would also benefit general education students with similar difficulties. The student with an ASD would not be the obvious target needing the support. In the primary grades, many students require the extra practice in social skills, learning classroom procedures, and being able to work independently. Associations such as, Families for Early Autism Treatment (F.E.A.T.), suggest using simple language, concrete terms, and added response times to avoid confusion and frustration (F.E.A.T., 2012). Clear and relevant consequences also assist the students in making a connection between undesirable and desirable behaviors, as well as consistency in the observance of procedures and rules. Programs or curriculum such as, “Thinking about YOU thinking about ME” (Garcia-Winner, 2002) or “Social Stories” (Gray, 1998) are effective in teaching social skills using role playing appropriate social interactions and behaviors or reading stories that specifically teach social skills needed at home, in the classroom, and eventually in the work place.

**Teacher Preparation**

There is a need for increased teacher preparedness and for research based accommodations to service the growing number of students with an ASD. Training is also needed in recognizing Autism-like behaviors in all students so that appropriate...
diagnosis and interventions may start for those who have been diagnosed later in life.

Attwood (2007) asserts that the majority of school aged students who are diagnosed with Autism Spectrum Disorders, in particular Asperger Syndrome, have been singled out by an experienced teacher who notices the uneven profile in academic abilities, the immaturity in emotion regulation, and deficits of social skills in the classroom and on the playground.

Researchers, educators, and psychologists who have specialized in the study of children with ASD’s, such as Asperger (1938), Gray (1998), and Atwood (2007), have noted how the personality and knowledge of the teacher has an enormous impact on the success of these students. Attwood (2007) claims that teachers who are knowledgeable, flexible in their teaching strategies, and ultimately appreciative of the quirks and abilities of these students determine whether their inclusion in a general education classroom is successful. However, in a study done by the U.S. Department of Education, Office of Special Education and Rehabilitative Services (2006), most general education teachers do not feel adequately prepared or knowledgeable enough as to the traits of ASD to successfully include a child with the disorder in their classroom and reported the need for additional training. A resource available on almost every school site is the special education teacher who can not only give general education teachers information and accommodations on students with ASDs but can also provide a variety of other learning and developmental disabilities, such as Attention Deficit Disorder, Learning Disabilities, Down Syndrome, and Cerebral Palsy. IDEA, (2004) states that the education of children with disabilities can be made more effective if all school personnel who work with
children with disabilities receive high quality, intensive professional development and training to ensure that they have skills needed to advance the academic achievement and functional performance of children with disabilities using scientifically based instructional practices.

Staff Development

In recent years the pressure to improve student performance in the United States has increased dramatically. The growing competition and mobility of workers between nations has amplified the scrutiny and comparisons of education systems around the world. Unfortunately, the United States is not performing well compared to other industrialized nations; coming in 14th in reading, 17th in science, and 25th in math (National Center for Education Statistics, 2009). More pressure is being put on districts, principals, and ultimately teachers to give quality, research based instruction. No Child Left Behind Act of 2001 dictated that in order for states to receive federal funding there must be a system of measurable goals and accountability for districts, schools, teachers, and students. Yearly performance on nationalized tests is used as a measure of teacher quality and student competency. This applies to not only general education students and their teachers but to special education students and their teachers as well. Having highly qualified teachers has been shown to be the single most important factor in the success of a student (Babu & Mendro. 2003). The question then becomes how to improve teacher quality? What is the most effective delivery system for professional development, a term used to describe the continuing education of teachers? How do we do this in a time of shrinking local, state, and federal budgets?
Currently, the model for professional development is based on a two-tiered system; tier one emphasizes creating a community of professionals, while the second more traditional tier is a more hierarchal, top down system of scripts, mandates, workshops and seminars (Sparks, 2004). However, teacher-to-teacher collaboration, coaching, peer observation and mentoring have been found to be a more effective way in which to support and train teachers (Zeichner & Klehr, 2001). Collaboration should include groups of teachers in the same school and same grade for optimal effect.

Expertise can be found on site in special educators concerning individualizing instruction for students with various disabilities, including ASD’s. School sites should take advantage of the knowledge base of the special education teacher that has built up over years of providing services to children with disabilities (National Dissemination for Children with Special Needs, 2012).

Fostering a culture of professional learning and inquiry among the teaching staff is an excellent way to improve communication, cohesiveness, and the sharing of ideas in a school environment. When training is an inclusive endeavor among professionals rather than pushed from the top down it is likely to be met with more acceptance from teachers. These “cultures of inquiry” give teachers opportunities to not only collaborate on topics such as curriculum implementation but also, lesson planning, student behaviors, and academics. Successful models of collaboration include guidelines set by the site principal but ultimately led and implemented by teachers (Garmston, 2007).

Teachers with content or subject matter knowledge that provide in-services can help to create this community of learning as open discussion and dialog of relevant issues
ensue from the familiarity of the participants with one another. Many school sites send teachers to a conferences or seminar and then that teacher is responsible for providing an in-service relaying the information to fellow staff members.

Summary

The diagnosis of Autism Spectrum Disorders has risen dramatically in recent years, the necessity for teachers trained in how to best accommodate these students in their classroom is vital. The review of literature revealed several key points. First, the number of children who have an Autism disorder may be much higher than previously believed. This is an addition to the already marked increase in ASD diagnoses. Second, general education teachers do not feel adequately prepared to teach this population in the classroom. Third, studies show that the most effective way in which to provide professional development in any area including ASD’s is to support teachers through peer collaboration and staff to staff training. Collaboration is critical among all parties; including parents not just site staff.
Autism diagnoses among school age children are on the rise. Most of these students will be educated in the general education classroom with teachers who have little, if any training, working with students who have special needs (Myles & Simpson, 2002). Inclusion, if properly implemented, has shown to benefit not only children with special needs but also their typically developing peers (Dybvik, 2004). The purpose of this project was to provide a meaningful and practical training for general education primary teachers as to the characteristics of students with ASD’s and strategies for accommodation in order that they might be successfully included in the general education classroom. An evaluation of teacher’s knowledge of Autism Spectrum Disorders at the school site was needed to inform the direction and content of the in-service training. The process in completing this project included; a teacher survey and interview which guided the training, the in-service training itself, and then a post-evaluation survey in which participating teachers were asked to measure the effectiveness of training.

School Information

The school site used in this research was a kindergarten through sixth grade Title I school with 81% of the students English Language Learners and 100% qualifying for free lunch. There is one special day class serving children with Emotional Disturbances and one resource room where remedial or supplementary help is offered to students with an Individualized Educational Plan (IEP). There are three students, ranging from first to
second grade in which an ASD was highly suspected. ASD’s are so varied in their presentation and possibly under or misdiagnosed that the actual number may be higher. These students are in the process of evaluation and assessment to determine whether they do in fact have the disorder. Classroom behaviors, such as, a severe lack of social interaction, restrictive and repetitive behaviors, and inappropriate playground interactions precipitated Student Study Team Meetings for all three children. A Student Study Team is a meeting in which parents, teachers, and administrators meet to discuss a student’s academic or behavioral problems and strategize on how to best help the child. This is a small school site where the staff is very familiar and committed to the students so every effort, particularly for one child, was made to keep the students on site instead of referring them to another more restrictive setting off-site. All three students are very high functioning but were placed in the class for students with Emotionally Disturbance (ED) due to incomplete diagnosis and lack of other appropriate placements. The researcher, who is the teacher in the ED class, feels this was due to the lack of knowledge about ASD’s and the accommodations that would have allowed the students to stay in their general education classrooms. The lack of information about ASD’s made the inclusion of these children seem too difficult to the general education teachers. This was one of the primary motivators to create an in-service training in which general education teachers were trained on how to accommodate children with Autism Spectrum Disorders.
Participants

In order to collect specific data for a training that would meet the needs of the researcher’s school site, six general education teachers were interviewed at an elementary school in Sacramento, California located in the Sacramento City Unified School District (SCUSD). Participants were chosen based on their interest in completing the survey. All were given pseudo names to protect their identity and the researcher transcribed their answers (see chart 2). The first participant interviewed was Mary. She worked as an instructional aide in a special education class for ten years before returning to graduate school and getting her general education teaching credential. She has been teaching for eleven years and is currently teaching a second-grade class. The second participant was John. He has been teaching in the general education primary classroom for 15 years and is currently placed in a third-grade class. The third participant was Laurie who has been teaching first-grade for 22 years. The fourth participant was Tina who has been teaching for 12 years and is getting a doctorate in education. She is currently placed in a fourth grade class. The fifth participant was Tom who has been teaching 8-years in a sixth grade class. The sixth participant was Joe who has been teaching 17 years and is currently placed in a kindergarten classroom.

Process

During the spring semester of 2012, the researcher asked all eight of the general education teachers if they would be interested in answering a questionnaire that would determine their knowledge of Autism Spectrum Disorders and the relevant accommodations to implement in their classrooms if they were to have such a student.
Six teachers said yes. All six regularly attend professional development trainings outside of those required by the district and, in general are open to increasing their content and pedagogical knowledge. The researcher developed the interview questions in the following way; questions number one was to determine if they had any knowledge of Autism Spectrum Disorder traits, question number two was to determine if there was any hesitancy in having a student with an ASD in their classroom and if so, why, questions number three and four were to determine if the participant knew of any behavioral or academic strategies to accommodate this population, question five was to determine if they knew of the legal mandate regarding this population (see chart 2). The information from the questionnaire was then used to inform the content of the in-service., i.e., if participants knew very little about Autism Spectrum Disorders then the training would focus heavily on the specifics of the disorder; if the they had knowledge of the disorder then the training would focus more heavily on accommodations.

**Chart 2 – Questionnaire**

<table>
<thead>
<tr>
<th>Question</th>
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<tr>
<td>1. What do you know about Autism Spectrum Disorders? Are you familiar with any of the characteristics of Autism?</td>
</tr>
<tr>
<td>2. What are your thoughts about having a student with an ASD in your classroom next year?</td>
</tr>
<tr>
<td>3. Please share any strategies or best practices that you know of for this population.</td>
</tr>
<tr>
<td>4. Please share any behavioral strategies you know of for this population.</td>
</tr>
<tr>
<td>5. What is the legal mandate of general educators regarding this population?</td>
</tr>
</tbody>
</table>
All participants were interviewed the following week in their classrooms after the school day had ended. The interviews averaged about 30 minutes. The researcher transcribed all answers as they spoke. Participant responses were then typed into a word processing document and printed to make comparisons easier. Most teachers knew some characteristics of ASD but less about accommodations and behavioral strategies. Thoughts on including students with ASD in the classroom were mid-range. All teachers clearly understood the legal mandate to provide them an appropriate education. The researcher then graphed the responses. They were categorized on a scale of 0-5 with 5 being the highest value (see chart 4 – Teacher Response Graph).

For QUESTION #1, if the participants knew eight or more characteristics of Autism Spectrum Disorder they were given a 5, the highest rating, six to seven a 4, four or five a 3, two to three a 2, one a 1 and if they didn’t know any characteristics a 0. The
same method was applied to QUESTIONS #3 and #4 knowledge of best practices and behavioral strategies. QUESTION #2, as to the openness to having a student with an ASD, was rated using a range from 0 to 5; very positive being a five; very negative then a zero. For QUESTION 5, if they knew of the legal mandate then a five was entered, if not then a zero.

**Chart 4 - Teacher Response Graph**

![Teacher Response Graph]

**Findings**

The results from the interview showed the teachers did have some knowledge of Autism Spectrum Disorder but that did not correlate with best practices and strategies for behavior. Teacher’s thoughts on having a student with an Autism Spectrum Disorder in their classroom, was generally positive. All knew the legal mandate regarding students in their classroom. There was a correlation between knowledge and openness to inclusion. Laurie and Tina, who knew the most about ASD and the accommodations to serve them,
were the most open to inclusion in their classroom. Laurie previously had several
students identified as being on the Autism spectrum and many she felt should have been
identified as such. Tina suspected that she had students in the past with Asperger
Syndrome and had come up with some accommodations and strategies of her own. John
and Tom knew the least about students with ASDs and only Laurie and Tina had any
knowledge of best practices concerning this population. The findings were consistent
with the researcher’s hypothesis that general education teachers have gaps in their
knowledge as to Autism spectrum disorders, best practices and strategies to accommodate
them. What was unexpected was their clear knowledge of the legal mandate to
accommodate them and all children in their classroom.

There is a clear need to train teachers, giving them more information on the
disorder so that the successful inclusion and outcomes for students on the Autism
Spectrum are more likely. The use of an onsite resource, such as the special education
teacher, is an effective and efficient way in which to train staff.

**Staff Development Presentation**

The presentation, “Teaching Students with Autism Spectrum Disorder” (See appendix
A), was at the school site in the author’s classroom, a Special Day Class for children
diagnosed with Emotional Disturbance. The agenda was reviewed. The presentation
began with a video clip from the movie “Mary and Max” by Max Elliot. The clip was
picked because the author felt this was the best description of Asperger’s Syndrome
available in an engaging movie form with clay animation. Max is a man from New York
who during the course of the movie finds out he has Asperger Syndrome. He is pen pals
with a neglected 8-year old girl in Australia. The movie details how much these seemingly disparate characters have in common; feelings of loneliness, isolation, and anxiety. The clip shows Max describing Asperger Syndrome to Mary with examples of how the symptoms are expressed in his daily life, as well as how others react to his behaviors. In one scene he explains that the world is confusing as he is very literal and logical. It shows him at the dentist office where the secretary points to a “take a seat” sign and the next scene is Max on the subway with a chair or “seat”. The movie clip is very funny but thought provoking and spurred many questions and comments. Teachers felt enough comfort to interrupt and ask for clarification as the slides were progressing. One teacher said she came to the training not only because she knows she has had several unidentified students on the spectrum but also because her mother had recently been diagnosed with Asperger’s Syndrome. She said what a relief it was to finally get an explanation for her odd behaviors and eccentricities. She also spoke about how hard it was to be a child of someone who doesn’t have the same range of emotions and empathy as a more typical mother might have. Others asked questions about the difference between the “Rainman” type of autism and more high functioning Autism. Several came to the conclusion that there were probably many undiagnosed individuals that had not been properly identified and therefore had suffered unnecessarily in the same way Max had.

During the introduction, the presenter relayed the statics on the substantial increases in ASD diagnoses. Teachers immediately asked questions about its validity, a few saying they thought it was the fad diagnosis of the moment. The history of Autism Spectrum
Disorder was explained as well as and the recent research that has gone into this complicated neurological disorder. Aspergers Disorder was just added to the DSM-IV in 1994. Many children previously classified as emotionally disturbed, mentally retarded or with speech impairments were upon reexamination diagnosed with ASD. The numbers have also swelled because of earlier screenings, a more accurate diagnostic criteria, and greater awareness of the disorder in general.

Next the presenter went on to detail the characteristics of ASD, explaining the three main hallmarks; deficits in communication, social interaction, and the preponderance towards restrictive and repetitive behavior. Examples were given, such as, lack of eye contact and poor reciprocal conversation, uneven academic profiles, immature playground behaviors, severe sound and touch aversions, and habitual patterns or rituals in behaviors. Interestingly enough, all the teachers said they had students with these symptoms in the past. Some were able to figure out a couple different strategies over time but were most often at a loss as to how to help them. The presenter explained how ASD presents on a continuum with wide variations in symptoms. On the low end, many children with classic Autism have mental retardation. On the high end of the spectrum is high functioning Autism or Aspergers Syndrome with average to very high intelligence. This set off a discussion about the proposed change to the upcoming DSM-V which is purportedly going to take out the term Aspergers Disorder and replace it entirely with High Functioning Autism so at stress the continuum of the disorder (Autism Research Institute, 2013). This cleared up some confusion as a few teachers thought they were getting rid of the diagnosis completely.
Next the presenter discussed the causes of Autism Spectrum Disorder. One teacher thought it was due to bad parenting, an infantile detachment disorder. Another thought it was due to vaccinations. The presenter explained that ASD was a neurological developmental disorder that is genetic in origin but presents more often if the fetus is exposed to tetragons in utero (Hyman & Tobin, 2007). The presenter also cited the landmark study on 500,000 children in Denmark by Madsen Lauritsen, Pedersen, (2003) that found the occurrence of Autism was the same in both vaccinated and unvaccinated children. There was much discussion around these issues including how harmful the now debunked study that linked Autism with vaccinations was to the health of American children. Many parents now shy away from vaccines putting their child and others at risk. Older teachers remembered a time when all children came to school with vaccinations but how now it is mandatory to show proof, at least in Sacramento City Unified School District, due to lack of compliance and outcroppings of the once irradiated whooping cough in California.

The presenter then went over the characteristics of Autism Spectrum Disorders, such as, lack of social skills, resistance to transitions or changes, lack of eye contact, tantrums, word and phrase repetition, auditory processing deficits, and various self-soothing techniques like rocking, humming or flapping. All teachers said they had students with varying degrees of these behaviors. One teacher made the comment that many of these characteristics were part of the normal human condition. The presenter pointed out the truth of this but that when you get a majority of symptoms in one child in that they are having trouble socially, academically or behaviorally due to these symptoms then it
should afford a second look into whether he or she might have Autism Spectrum Disorder.

Next we discussed the perplexing academic nature of students on the Autism spectrum, particularly the uneven profile of their educational performance. The presenter gave examples of students who are hyperlexic in that they can decode words easily at a young age but then have poor comprehension and inferencing skills, particularly when facts are not stated directly in the text. This can be frustrating to teachers who have expectations based on very high performance in one area and then are confounded by low or very low performance in other areas. Handwriting and motor skills are especially problematic due to motor coordination problems in many of these individuals. With this new information and more details concerning slow auditory processing in this population, teachers again discussed past students that they now believed might have been on the Autism spectrum. They talked with each other; remembering children that had passed through their classes that had been so difficult to figure out. We then discussed the significant behavioral issues of children with ASD. The presenter related how important social skills are in school and in the workplace. Lack of these skills can present challenges not only to the student but also to classmates and the teacher. It was noted that students with ASD can have intense and numerous tantrums and are often very egocentric; expecting to go first, not share, and do as they please. They often misinterpret social cues, thinking, for example, that another student’s intent when accidently brushing past them was done on purpose to hurt them. Transitions are also very difficult. Switching from a preferred to non-preferred activity is particularly
problematic for these children and can cause behavioral issues. Loud noises and a chaotic classroom are overwhelming for these students due to sensory processing issues. This new list of characteristics again brought on another participant discussion on students and family members that might fit the profile.

The presenter then went on to discuss academic accommodations and strategies for students with ASD including, positive reinforcement, high expectations, a calm and structured classroom, visual aids, written rubrics, and peer buddies to help facilitate classmate interactions and classroom expectations. An important accommodation is to explicitly state the purpose for each lesson. Students with ASD are very logical and they want to know why they have to learn a particular skill. The behavioral strategies conveyed to the teachers included; regular transition procedures so the students would know a change was coming, clear, consistent and relevant consequences, teaching excepted behavior rather than just punishing bad behavior through role playing, and specifically teaching social skills. It was noted by the participants in the discussion afterwards that these accommodations and strategies helped all students not just those on the spectrum.

The importance of social skill instruction and different ways to incorporate it into the curriculum whether through reading, writing, or role play activities was discussed in detail. The presenter gave each a handout called the *Rule Book* by speech pathologist, Ann Marie Sabino who has made her work available for modifications and use by others (see Appendix B). It incorporates writing standards, classroom rules, and social skill instruction into several mini-lessons. The *Rule Book* reviews everyday expectations for
entering a classroom, manners in the cafeteria, playground rules, what to do when angry
at a classmate or even your teacher, and many other situations. This type of direct
instruction is effective for all students but especially those with an ASD as they have
often missed learning these often unspoken rules and respond positively to such clear cut
guidelines and procedures. The teachers looked through the book and decided it would be
a good beginning of the year activity to help set classroom expectations. One teacher
noted that it was similar to a portion in the movie clip where Max had a book that he
carried around with him that showed facial expressions. He would refer to it when he
was confused as to what a certain expression meant. In the clip he was drawing a
naughty picture on a wall and his mother caught him. He quickly referred to his *Face
Book* and matched her face with the angry face in his book. He quickly realized he was
about to get slapped.

Social skills practice is a critical component for students with ASD. The presenter
role played a social skill lesson in which the teacher acts out what to do and not to do
when you don’t get your way. The presenter pretended to be angry about having to end a
game and had a fake tantrum on the floor. This was funny to the teachers but when
performed in front of students it is even funnier to them. They can see how inappropriate
the behavior is and how ridiculous a tantrum looks. The presenter then pretended again
to be confronted with the same situation but this time thought it through, modeling the
appropriate thought process out loud; “Is it worth it to lose recess? I can play the game
again tomorrow”. We then role played two more social skill lessons. One, called the
Conversation Ball in which all teachers participated. We stood in a circle and threw a
ball to one another. Each time you caught it you had to ask a question to the person who threw it. No repetitions were allowed and the ball was passed around the circle. The teachers enjoyed this activity and we actually learned interesting things about one another.

The last activity we did was a lesson in watching facial expressions. All children misinterpret facial cues as to intent often thinking someone pushed or hurt them on purpose but it is especially problematic in students with ASD. A teacher was asked to come up. The presenter made an angry face and pushed the volunteer and then repeated it. This time, clearly looking the other way and pushing against the volunteer on accident. The audience was asked how you would know if this were on purpose. They answered you would know by looking at the facial expression thereby highlighting the importance of paying attention to facial expression to discern intent. All this is explained to the students when doing this activity. We then brainstormed the consequences of not paying attention and came up with the following; loss of a friend due to misunderstanding the situation, getting in a fight, and feeling constantly bullied or isolated by classmates. Many children with ASD avoid eye contact and the importance of training oneself to pay attention to faces is stressed in this lesson.

The presenter summarized the in-service by relaying her passion for these individuals and making sure that teachers are aware of the characteristics of the disorder so that more students are properly identified and then given appropriate interventions and accommodations. The presenter’s daughter was diagnosed with Autism Spectrum Disorder due to a very observant and experienced kindergarten teacher who noticed her
uneven profile of academic abilities, immature and unsocial playground behaviors, and lack of eye contact. Intervention began after the diagnosis and six years later the symptoms of the disorder are barely noticeable to teachers and classmates. Next to parents, teachers are in a unique position to notice significant behaviors in children and then direct any concerns to parents and medical professionals. The group discussed the positive consequences to getting early diagnosis and therefore early intervention. The feeling of not fitting in and exclusion felt by many individuals with Autism Spectrum Disorder, especially on the higher end, can cause significant distress and anger. This can be expressed externally, towards others or internally in the form of self-hatred. The presenter and the participants discussed this issue for some time. Lastly, the evaluation was handed out (see chart #5- In-service Evaluation).

An analysis of the post training evaluations (see chart 5) showed that all participants felt they were given appropriate academic and behavioral strategies to accommodate students on the Autism Spectrum. There was an average rating of 7, on a scale of 1 to 10, as to how knowledgeable they felt about characteristics of students with Autism Spectrum Disorders. Most felt comfortable incorporating social skill lessons into daily routines; one wanted more information on how to do so. Written suggestions for future trainings included the following; “Keep giving us more tips”, “I need to see more videos of Autism children’s different levels in the range”, “I would like to see the DSM-IV criteria for Aspergers and also look at the characteristics of this disorder in adults”, “I want more information on sensory issues, Autism, Aspergers, PDD.” Verbal suggestions were also positive and constructive. Teachers who participated commented that they had
liked the in-service and felt like they had learned something to help them meet the needs of their students with ASD in their classrooms.

**Chart 5 - In-Service Evaluation**

<table>
<thead>
<tr>
<th>In-Service Evaluation Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. On a range of 1 to 10, with 1 being the least and 10 being the most, how knowledgeable do you feel about the characteristics of students with Autism Spectrum Disorders?</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>2. Were you given appropriate academic strategies to accommodate these students in your classroom?</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>3. Were you given appropriate behavior strategies to accommodate these students in your classroom?</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>4. Do you feel more comfortable incorporating social skill lessons into daily routines?</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>5. Do you have any suggestions that might improve this presentation?</td>
</tr>
</tbody>
</table>

Chapter 4

OUTCOMES AND RECOMMENDATIONS
Autism Spectrum Disorders are a group of developmental disorders that cause impairments in social interaction, communication, and are associated with increased restricted and respective behavior (De Rosier, Swick, Ornstein-Davis, Sturtz-McMillen & Matthews, 2011). Most students with an ASD diagnosis are served in the general education classroom (Myles & Simpson, 2002). Diagnoses of students with an ASD are rising, as is the likelihood that teachers will have these students included in their classroom. As echoed in the author’s findings, most general education teachers do not feel adequately prepared to successfully include a child with an Autism Spectrum Disorder in their classroom. Educators feel they need additional training to effectively include these students (Robertson, Chamberlain, & Kasaril, 2003).

The author decided to do staff development training on Supporting General Education Teacher’s Understanding and Implementation of Best Practices for Autism Spectrum Disorders in the Classroom for a master’s project. Previous research and instances in which students being tested for Autism Spectrum Disorder were put into the author’s classroom because they were not functioning well in the general education classroom, highlighted the need for general education teachers to receive training on the characteristics and features of the disorder.

Several themes emerged after analyzing the data of the initial questionnaire and evaluation. There was a correlation between knowledge of students with ASD and willingness by teachers to include them in the class. The teacher who knew the most about Autism Spectrum Disorder was very positive towards having a student with an ASD in her classroom which suggests the more knowledge teachers have the more open
they will be to including individuals with Autism Spectrum Disorder in their classrooms. This might hold true for students with other disabilities as well. Conversely, the teacher who knew the least about ASD was the least positive to including a student with the disorder in his classroom.

In retrospect, the relationship between the questions on the initial survey and the post training evaluation should have been more clearly connected. The evaluation should also have had a question as to the teachers comfort level to including a student with ASD in the classroom post training to measure again the correlation between gains in knowledge to thoughts on inclusion. All teachers knew they had a legal mandate to teach all children but the discomfort around inclusion seemed to be alleviated when they had more knowledge and felt supported.

The author feels that traditional, top-down, district led trainings can sometimes seem irrelevant to what is actually needed in the classroom. Doors of communication should be encouraged between teachers and the site principal in order to make trainings more applicable and useful in the classroom. Cultures of learning can be encouraged by teachers providing trainings to fellow teachers. This model of delivery is not only cost effective but helps to create a more collaborative school site where professionals, working together, share expertise and ideas. There is a natural opportunity for collaborative learning between general educators and special educators. Special educators are knowledgeable as to the characteristics and accommodations for a large variety of disabilities. The on-site special education teacher can provide training and on-going collaboration for all students with special needs. Opening the door to such collaboration
might foster a more cohesive school site in which teachers work together to serve the needs of all students.

Several positive events have occurred because of the author’s research and the in-service training. In the author’s classroom two more students have been referred and identified as being on the Autism Spectrum because of knowledge gained by the author during the research as it promoted the author to take a fresh look at the student’s characteristics and behaviors. One student, in particular, who was clearly misplaced in a class for students identified as Emotionally Disturbed classroom, has been diagnosed with ASD and will be in a classroom for students diagnosed with Autism next fall. Another student will more than likely be placed back in the general education classroom but with accommodations designed in collaboration with the author and general education teacher. A teacher who attended the training has a student whose behavior was very puzzling to her. He flaps his hands and initially seemed to have some developmental delays. However as she became more familiar with his academic profile she became more confused; he was very intelligent in some areas but extremely low in others. His performance was inconsistent. After the training she took a second look at him and realized he fit the profile for ASD. He is now being tested by the district Autism team. It is very important for children to get the proper diagnosis as early as possible so that interventions can be put in place immediately. Another positive occurrence is that after the training, the author has been asked to come into general education classrooms by several teachers to observe students and offer insights and accommodation ideas. This is not only beneficial for the teachers but the students as well. Many behaviors that students
with Autism have are due to anxiety over what they perceive as a stressful situation. The more a teacher can alleviate or eliminate these situations the better the student and the class as a whole will function. Students and parents benefit when seeing teachers collaborating together to solve problems and share strategies. For teachers, there was a notable increase in mutual respect as professionals with each having something to offer the other. Collaboration creates a community in which all students are considered important.

**Recommendations**

It is the author’s recommendation that future research done by the education community should be directed toward investigating best practices and strategies for including children with Autism Spectrum Disorders in the general education classroom. Also, at the district and site level, more training needs to be provided to general education teachers who will be servicing the growing number of students with Autism Spectrum Disorder their classrooms. More targeted district level trainings including workshops in social skill instructions, behavior management, school site collaboration and team teaching.

In higher education, more cross-training between general education and special education credentialing programs is needed in order to properly prepare general educators for today’s student population. Many courses should be taken by all credential candidates not just special education students. Classes like positive behavior support, instructional strategies, education of students with behavioral issues, and language and literacy interventions. If general education teachers are better educated as to how to meet the
wide variety of students with or without disabilities this will insure that the legal mandate that teachers have to instruct all students in their classroom would be more easily and beneficially fulfilled. On site teachers with the knowledge of specific disabilities should be used to educate fellow general education teachers. This helps create a cohesive and collaborative school site working together to meet the needs of all students. The author’s research and experience shows there is a connection between knowledge and the willingness to include students with Autism Spectrum Disorder which would seem to carry over into other disabilities.
Appendix A: Professional Development PowerPoint
TEACHING STUDENTS WITH AUTISM SYNDROME DISORDERS

BY KARLA MILLER
IN-SERVICE AGENDA

• Movie clip from "MAX and MARY" by Max Elliot
• What is Autism Spectrum Disorder?
• What are the causes?
• Characteristics
• In the classroom - academics and behavior
• Accommodations
• Social skills / role play activity
• Evaluation
INTRODUCTION

• The CDC estimates that as of 2006, the number of children with Autism Spectrum Disorder is about 1 in 110 or 1% of the population, an increase since 2002 of 57%.

• It is thought this is due to heightened awareness of the disorder and better diagnostic criteria (Johnson, C.P., Myers, S., 2007).

• Given the above ratio, teachers can expect to have a student with an ASD about once every 3 to 4 years.
WHAT IS AUTISM SPECTRUM DISORDER?

• ASD is a group of developmental disorders that cause impairments in communication, social perceptions and interactions.

• Many individuals also have compulsive behaviors that are performed ritualistically, no matter the inconvenience to themselves or others.
WHAT IS ASD CONTINUED...

• Individuals with this disorder often have restricted and rigid interests; adapting poorly to changes in schedules, routines, and transitions (DeRosier, et al., 2011).
WHAT IS ASD CONTINUED...

- ASD is a spectrum disorder in that deficits present on a continuum from severe to mild; with Autism and intellectual disability on one end and High Functioning Autism or Asperger's, with average to superior intelligence on the other.
WHAT IS ASD CONTINUED...

There are variations within the symptoms. One child may have social impairments finding it hard to navigate group rules; another could have intensified and odd interests, such as, bus routes or video surveillance systems.
Auditory processing and sensory integration issues are common in children with ASD and may be the source of puzzling outbursts and behaviors (Tippett, 2004).
WHAT CAUSES ASD?

- Autism spectrum disorders are genetic in origin but appear more likely to present if fetus is exposed to environmental tetragons in utero (Hyman & Towbin, 2007).

- ASDs are not caused by the chemicals and preservatives in vaccinations. A landmark study on 500,000 children in Denmark found the occurrence was the same in both vaccinated and unvaccinated children (Madsen, Hyvild, Vestergard, 2002).
WHAT CAUSES ASD?

Physiological changes occur to the brain in utero effecting cell density in the cerebellum and limbic systems as well as processing systems that connect different regions of the brain (Hyman & Towbin, 2007).
CHARACTERISTICS OF ASD

• Difficulty in socializing with other children
• Resistant to changes and transitions
• Lack of eye contact
• Tantrums
• Prefers to be alone
• Echolalia (repeats words and phrases)
• Self-soothing techniques such as rocking or humming
• Ritualistic and compulsive behaviors
• Sustained odd play
• Slow response to verbal queues (auditory processing deficits)
• Strict adherence to rules, order, and fairness
IN THE CLASSROOM - ACADEMIC

- Many students with this disorder are high-functioning in one area such as, math or reading, and low in another, like comprehension or handwriting. This is confusing for educators who may expect the students' abilities to be more evenly spread.

- Many children with ASD are hyperlexic but have poor inferencing skills. These students have difficulties grasping abstract concepts not specifically stated in the text.

- Difficulty with motor coordination often results in poor handwriting skills.
IN THE CLASSROOM - ACADEMIC

• Difficulties with organization are very common for students with AS and frequently have a detrimental impact on achievement; homework is lost, deadlines are not met, etc.

• Students with AS frequently process information more slowly and don't understand the passage of time and how it relates to setting priorities, especially when they tend to become overly focused on details.
Students with ASDs can have significant behavioral issues that can present a challenge to teachers, especially with little knowledge of the disorder.

Stereotypical behaviors, such as, ticks or self-soothing motions can be disruptive in a classroom. Even more problematic are the socially deviant behaviors, such as, tantrums, physical aggression, or obsessive behaviors (Eldar, Talmor, & Wolf-Zukerman, 2010).
IN THE CLASSROOM - BEHAVIOR

- A student with AS will frequently become upset when transitioning from one activity to another.
- Inappropriate classroom behavior, such as, snatching, tantrums, not sharing or taking turns is common for children with ASDs who have immature emotional responses.
- Many classmates are able to understand the more obvious characteristics of a disability; rocking humming, etc., but are less accepting of behaviors that seem downright bullish or mean (Autism Puzzle, 2006).
ACCOMMODATIONS

Academic Strategies

- Positive reinforcement
- Visual aids
- Structured routines and transitions
- High expectations
- Explicitly state the purpose of each learning activity
- Designate a peer buddy
- Provide written rubrics of assignments and timelines
ACCOMMODATIONS CONTINUED...

Behavioral Strategies

• Transition procedures
• Use of concrete terms and ideas
• Clear and relevant consequences
• Consistent observance of procedures and rules
• Role-play appropriate social behaviors
• Teach social skills. (Autism Puzzle, 2006; F.E.A.T., 2012)
SOCIAL SKILLS

• Teaching social skills can help alleviate behavioral problems not only in students on the spectrum but also in those without a disability.

• Social skills can be woven into classroom curriculum. For example; “Our Rule Book” written by Ann Marie Sabino, a speech pathologist, is an excellent way to incorporate writing standards, classroom rules, and social skill instruction into one easy lesson.
SOCIAL SKILLS CONTINUED...

Role play inappropriate behaviors and appropriate behaviors. For example; role play a tantrum or throwing something when you don't get your way verses walking through the steps to calm down and thinking through the consequences of those choices. Kids love it when teachers act this out!
SOCIAL SKILLS CONTINUED...

Conversation ball – students stand in a circle, throw ball to classmates and ask a question about the other person. This is repeated until everyone has asked and been asked a question. They cannot repeat a question. These can also be done in groups.
SOCIAL SKILLS CONTINUED...

Quick lesson on the importance of discerning the intentions of others and how important it is to watch facial expressions for clues. Role play a student intentionally pushing another showing facial expression of intent then role play an accident with appropriate expression. Ask them to tell you which was most likely on purpose. Why is it important they notice?
REFERENCES


Appendix B: Our Rule Book
Our Rule Book

By: Ann Marie Sabino, MA/CCC-SLP
Being angry at a friend

What are the rules?

1. ________________________________

2. ________________________________

3. ________________________________
Being angry at a teacher or another adult

What are the rules?

1. 

2. 

3. 
Borrowing something from a friend

What are the rules?

1. ____________________________

2. ____________________________

3. ____________________________
What are the rules?

1. 

2. 

3. 
What are the rules?

1. ________________________________

2. ________________________________

3. ________________________________
What are the rules?

1. 

2. 

3. 
Walking into school

What are the rules?

1. 

2. 

3. 
Leaving the classroom

What are the rules?

1. ______________________

2. ______________________

3. ______________________
Playing on the playground

What are the rules?

1. 

2. 

3. 
What are the rules?

1. 

2. 

3. 
What are the rules?

1. 

2. 

3. 
Talking to a friend

What are the rules?

1. ______________________________________

2. ______________________________________

3. ______________________________________
Talking to someone you like

What are the rules?

1. 

2. 

3. 
Talking to a teacher or another adult

What are the rules?

1. 

2. 

3. 

What are the rules?

1. 

2. 

3. 
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