

Awareness of Autism Spectrum Disorders
in General Education

by

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ABSTRACT

Each of the developmental disorders in the Autism Spectrum Disorder (ASD) category is defined in large by significant delays/deficits in social skills, communication, and behavior (Towbin, Mauk, & Batshaw, 2002). According to the Autism and Developmental Disabilities Network (2007), there were 171,000 more individuals, ages six to twenty-one years, receiving services for autism in 2005 than in 1994. While the prevalence numbers within the United States varies from state to state, estimates are that 1 in 150 children are diagnosed with an ASD. In the past, a majority of children diagnosed with an ASD spent most, if not all, of their time in special education classrooms (Thompson, 2007). Due in large to the increased identification of ASDs, especially Asperger's syndrome and pervasive developmental disorder-not otherwise specified (PDD-NOS), students with such disorders are experiencing partial or sole placement within the general education classroom at a growing rate. Placement in such an environment has the potential to provide students in this population with both academic and social benefits, assuming

the necessary means for attaining such benefits are provided. However, it is important to note that placement in general education does not directly result in the increase of social interactions (Owen-DeSchryver, Carr, Cale, & Blakely-Smith, 2008; Rogers, 2000). Nevertheless, putting interventions that target such areas into effect within the general education classroom allows children with ASDs to learn and develop such concepts in a more naturalistic environment, which increases, but does not guarantee, the likelihood of generalization. This implies that general education teachers are taking on the heavy responsibility of educating these children, regardless of their background knowledge in such disorders. There are no concrete methods guaranteed to result in the successful education of this population due to the uniqueness of each case. Therefore, school personnel need to become knowledgeable and efficient in evaluating each child and developing individualized approaches believed to work best based on the information they obtain. The following literature review examines some of the current information available with regards to educating children diagnosed with an ASD in the general education classroom. It offers some of the suggested modifications and accommodations that can be made within the general education classroom to foster an environment that gives a child with an ASD the opportunity to flourish. Issues with teacher support and directions for future research are presented as well.

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Chapter I: Introduction

Autism Spectrum Disorders (ASD) is an umbrella term that encompasses a number of similar, yet unique developmental disorders. The more technical term frequently used as the title for this group of disorders, and under which you would find the disorders in the DSM-IV, is Pervasive Developmental Disorders (PDD; Thompson, 2007). Each disorder in the ASD/PDD category manifests through delays/deficits in three major areas: social skills, communication, and behavior (Towbin, Mauk, & Batshaw, 2002). The extent in which an individual displays difficulties in these areas is what distinguishes each of the disorders from one another. The three most common of the five disorders listed in the ASD/PDD category are: autistic disorder (i.e. autism), Asperger's syndrome, and pervasive developmental disorder – not otherwise specified (PDD-NOS; Thompson, 2007). The final two, Rett's disorder and childhood disintegrative disorder, are not discussed as often, as the prevalence is estimated to be much lower than the three previously mentioned.

The prevalence of each disorder in the ASD category is less than one percent of the general population, with autism having the highest incidence and childhood disintegrative disorder the lowest (i.e. 0.7 and less than 0.001 percent, respectively; Towbin et al., 2002). Currently, The Centers for Disease Control and Prevention (CDC) is funding a set of programs entitled the Autism and Developmental Disabilities (ADDM) Network aimed at identifying the prevalence of ASDs throughout the United States. In 2007, the ADDM Network's results, published by the CDC, reported that an average of 1 in 150 children are diagnosed with an ASD. It is important to note that this statistic is an approximation, as there tends to be fluctuating rates among states. Thus, it is nearly impossible to obtain an accurate count as to the exact prevalence of ASDs. In fact, the information obtained from the sixteen states monitored by the ADDM

Network revealed prevalence rates that ranged from 1 in 303 children (Alabama) to 1 in 94 children (New Jersey).

The reason as to why prevalence numbers are deemed unreliable is due in large to the fact that there is inconsistency with diagnosing individuals with ASDs. For example, it is not uncommon for the more mild forms of ASDs (i.e. Asperger's, and PDD-NOS) to go undiagnosed. Furthermore, because of the subtle distinctions that occur in identifying one ASD from another, individuals may receive differing diagnoses from different physicians (Tsai, 1998). Related to this, the manifestations of ASDs may resemble those of other disorders, which result in the common misdiagnosis of an ASD for a disorder that is independent of the ASD category. For example, many individuals with Asperger's syndrome are misdiagnosed as having attention-deficit-hyperactivity-disorder (ADHD; Towbin et al., 2002). Regardless of the exact incidence and factors affecting diagnosis, the fact is that the prevalence of ASDs is on the rise resulting in the need for schools to address the education of this diverse population.

Previously, children diagnosed with a developmental disorder would more likely than not, be placed primarily within the special education setting. As outlined by the least restrictive environment (LRE) policy in the Individuals with Disabilities Education Act (IDEA), schools need to include individuals with disabilities in general education to the maximum extent possible (Thompson, 2007). Thus, with the increase in identification of ASDs, children with such diagnoses are experiencing partial or sole placement in general education classrooms at a growing rate. This is especially the case for higher functioning individuals who typically have a diagnosis of Asperger's or PDD-NOS, as they are more likely than other children with an ASD to have the ability to independently participate within the general education classroom, requiring little to no assistance. Inclusion in a general education classroom allows those with an ASD to

gain valuable experience interacting with typically developing peers. While some studies have found that placement in general education classrooms has supported the social interaction/integration of children diagnosed with an ASD, one must examine these studies with caution (Owen-DeSchryver, Carr, Cale, & Blakely-Smith, 2008; Rogers, 2000). In other words, simply placing a child with an ASD into a general education classroom will not result in an increase in his/her social interactions with others. Instead, social interaction/integration becomes a goal that can potentially be obtained through a variety of interventions. Providing such interventions in a more naturalistic environment like the general education classroom increases the likelihood that the skills, once acquired, will generalize to other situations. Once again however, this does not ensure an increase in social interaction. The structure of such interventions, as well as the success rate, will vary greatly between children.

Due to the ambiguity of ASDs, it can be very difficult to decide what sort of structure would work best for a given child within the educational setting (Thompson, 2007). The extent in which children exhibit symptoms of an ASD not only varies between the disorders, it also varies within each disorder. Thus, each child will have an extremely unique profile, making it difficult to develop a specific set of guidelines for general education teachers to follow when a child with an ASD is placed into their classrooms. While there are a few general areas in which modifications and accommodations are recommended (e.g., classroom setup, instructional methods, lesson planning, etc.), the manner and extent in which each area is addressed will differ greatly from one child to the next. Therefore it is essential that schools have a sufficient amount of resources available so that each individual case may be thoroughly evaluated.

Statement of the Problem

In recent years the identification of autism spectrum disorders (ASD) has dramatically increased. The number of children (6 to 21 years of age) who were receiving services for autism rose from approximately 23,000 to nearly 194,000 between the years of 1994 and 2005 (ADDM, 2007). As recently as the early 1990s, it was estimated that 1 in 1000 children were diagnosed with autism. Although statistics vary by state, current studies have found the prevalence of ASDs to be closer to 1 in 150 children. It is also the case that children diagnosed with an ASD who are high functioning are able to be included in general education most, if not all, of a typical school day (Thompson, 2007). The uniqueness of the manifestations of an ASD within each child results in the inability to develop a specific curriculum for general educators to follow in educating this population. Therefore, this review will focus on literature available, in the summer of 2008, on various areas to address in the general education classroom when educating those diagnosed with an ASD. More specifically, it will examine the literature on general education teachers' awareness of the topic, as well as various adjustments to the environment and curriculum that have yielded success in the past.

Purpose of the Study

The purpose of this literature review is to examine the information currently available on educating children diagnosed with an Autism Spectrum Disorder in the general education classroom. It will focus on various accommodations and modifications that can be made within the classroom that better enable children in this population to learn. This review will also address some of the training and ongoing supports that general education teachers need in order to become successful in educating these children.

Research Questions

The research questions that this literature will attempt to answer include:

1. What methods have been shown to be successful when educating children identified as having an autism spectrum disorder?
2. To what extents are children with autism spectrum disorders included in general education?
3. What training and support do general education teachers receive in order to become successful working with the autism population?

Definition of Terms

In order to bring clarity to and promote comprehension of the content presented in this literature review, the following terms are explicitly defined:

Asperger's Syndrome – A developmental disorder in which major deficits/delays occur in the area of social skills (Waltz, 2002). This leads to a hindered ability to recognize and understand social cues as well as the ability to build rapport/relationships with others. Those with this disorder are often very intelligent and have strong interests in very specific, and sometimes unusual activities/subjects.

Autistic Disorder (Autism) – A neurological disorder in which there are delays/deficits in communication, social interaction, as well as behavior abnormalities (Waltz, 2002). In some cases, those with autism will develop normally during the first two years of life and then start to regress in these areas.

Autism Spectrum Disorders – A more general term used synonymously with Pervasive Developmental Disorders to categorize the five developmental disorders (Sicile-Kira, 2004).

Childhood Disintegrative Disorder (CDD) – A developmental disorder in which a child seems to develop normally for at least the first two years of life. Prior to the age of ten, the child then starts to regress significantly in regards to movement, bladder/bowel control, and social skills (Tsai, 1998). It is thought that the cause of CDD is much different from that of other ASDs, although no cause has been found (Waltz, 2002).

Pervasive Developmental Disorders (PDD) – A broad term used to group together the five developmental disorders (Sicile-Kira, 2004).

Pervasive Developmental Disorder-not otherwise specified (PDD-NOS) – Individuals with a PDD-NOS diagnosis exhibit manifestations of autism and/or Asperger's, but do not meet the needed criteria for a diagnosis of one of the other ASDs (Waltz, 2002).

Response to Intervention (RTI) – An ongoing process utilizing scientifically-based research interventions to evaluate, intervene and monitor students who are at risk for falling behind (Cummings, Atkins, Allison, & Cole, 2008; Wright, 2007).

Rett's Disorder – A genetic disorder in which eighty percent of the cases are caused by a genetic mutation on a gene on the X chromosome (i.e. MECP2 gene; Waltz, 2002). Most children with this disorder have comorbid epilepsy and a degree of mental retardation ranging from severe to profound. Those with Rett's' disorder will typically grow at a much slower rate than their peers and will remain short in adulthood. Unlike autism, those identified as having Rett's disorder are almost always female.

Self-Stimulatory Behaviors – These behaviors are engaged in as they tend to have some sort of calming/releasing effect. An everyday example would be students who may draw in their notebooks during class, or people who talk with their hands. The self-stimulatory behaviors used by individuals diagnosed with an ASD tend to stick out more, as they are abnormal by society's

standards. Such behaviors may include but are not limited to: staring at and spinning wheels on toy cars, looking at objects from different angles, shaking hands and/or legs, repetitively tapping fingers against walls, making unique facial gestures or vocal sounds (Towbin et al., 2002).

Social Inclusion – The degree in which an individual successfully builds and sustains friendships and acceptance among his/her peers in the general education classroom (Boutot, 2007).

Social Stories – Stories written to explicitly inform the reader on a specific idea or concept. They are composed of four different sentence types: descriptive, directive, perspective and control (Myles & Simpson, 2001).

Assumptions and Limitations

It is assumed that there will be a broad base of literature available on methods and strategies to use when educating children in the ASD population. It is also assumed that no concrete guidelines will be found in reference to how to educate children diagnosed with an ASD. One limitation to this study is that there is very little information available on the rates of progress made by students with an ASD who are placed in a general education classroom where modifications and accommodations are made. Another limitation within this study is that research pertaining to how prepared and confident general education teachers are in regards to successfully teaching students diagnosed with an ASD is remarkably minute.

Chapter II: Literature Review

This chapter will discuss some of the common educational placement options for children diagnosed with an Autism Spectrum Disorder (ASD). Secondly, an overview of the response to intervention (RTI) policy and its influence on educating children diagnosed with an ASD will be provided. The primary focus of this chapter will include a discussion of various considerations to take into account when educating children diagnosed with an ASD in the general education classroom. Included in this discussion is information in regards to sensory accommodations, curriculum and instruction, behavior, social skills training, and social inclusion. Related to these educational considerations for students diagnosed with an ASD is the discussion of general education teachers' preparedness to implement such methods. This, along with the training available for general education teachers will be addressed. This chapter will conclude with discussion of current research addressing the training and support general education teachers require to promote and ensure their efficacy in educating children in this diverse population.

Educational Placements

The educational placement for children diagnosed with an autism spectrum disorder varies in complexity from one child to the next, depending on his/her diagnosis and the manifestations of the disorder. An ideal classroom for a child with an ASD would be one in which the teacher not only uses effective methods of instruction, but also is caring and well informed of the child's needs (Waltz, 2002). There would also be ample opportunity for those with an ASD to interact with typically developing children. In general, the decision of what exactly a child's educational environment will consist of involves assessing what educational program would be most appropriate, as well as which placement puts him/her in the least restrictive environment (LRE).

Children with an ASD diagnosis of autism, Rett's syndrome, or childhood disintegrative disorder (CDD), are likely to spend a fair amount of time in a special education setting (Thompson, 2007). However, some of these children will be able to join their same aged peers for certain activities and instruction, depending on the manifestations of their disorder. Some school districts offer what is called a supported integrated classroom, which may also be referred to as reverse integration (Waltz, 2002). This involves bringing typically developing children into special education. Most commonly, it is the children with an ASD diagnosis of Asperger's or pervasive developmental disorder – not otherwise specified (PDD-NOS) who have a primary placement in general education classrooms (Thompson, 2007). Some of these children may be able to independently proceed through the school day without having extra assistance provided. Other students, who may not have the means to function as independently, might have the added support of a paraprofessional aide. Yet others may need to leave their general classroom and receive instruction from a special education teacher for given subjects. Again, there is no concrete descriptor of a typical school day for a child diagnosed with an ASD, as the manifestations, and thus the individual needs are never identical between children.

Response to Intervention (RTI)

Having a wealth of information and strategies for working with diverse populations is and will continue to be essential for general education teachers. Legislation such as the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA '04) and No Child Left Behind (NCLB) require that the instruction used in classrooms be scientifically-based (Cummings, Atkins, Allison & Cole, 2008). In the past, teachers could simply refer for an evaluation, children who they believed were struggling in the classroom. Now, more states are starting to mandate school systems to adopt a response to intervention model (RTI), which

involves documenting a student's progress over time with the utilization of scientifically-based interventions. Employing this method to intervene with children who are struggling allows more children the opportunity to participate in general education. RTI gives educators a chance to assist children the moment they show signs of struggle and in some cases, potentially avoid a referral to special education. It is important to note that the RTI policy outlined in IDEIA '04 does not offer a concrete set of rules for implementation (Stecker, 2007). Thus, there tends to be a number of approaches to RTI that schools can choose to adopt. Although each model is unique in its own way, they all are grounded on the fact that progress-monitoring data are used to drive the decision making process. In general, the models also tend to follow a three-tier approach in identifying students who are at risk for falling behind their same aged peers.

The primary tier is one that is available to all students and typically includes universal screening in areas such as reading and math at specific benchmarks throughout the school year (Stecker, 2007; Wright, 2007). Based on research, schools have an idea of how developed a child's skills should be in specific areas. Thus, a student is identified as being at risk if his/her score(s) on the benchmark screenings indicate that the student's performance is below the suggested level of functioning. If it is determined that a student is at risk for falling behind his/her peers, tier-one interventions, which are carried out by the teacher in the general education classroom, are put into place (Wright, 2007). This would involve utilizing scientifically-based instructional practices and monitoring the student's progress for a specified amount of time. The time a student spends in tier-one will depend on the student and the area that is being addressed, (e.g., behavior, reading, math, etc.) but lasts anywhere from five to ten weeks (Stecker, 2007). In general, tier-one interventions can easily be put into place at the first sign that a student is having difficulty (Wright 2007). In essence, the goal of this initial step is to determine whether or not

changes in the classroom instruction are adequate enough to help the student succeed and progress at a more appropriate rate.

If it is determined that the child is not succeeding with the basic interventions in tier-one, then those monitoring him/her would move to the second tier of the RTI model. This involves looking at the student's specific needs and using a more intensive intervention that is further tailored to those needs (Wright, 2007). While tier-one interventions are primarily carried out by the general education teacher, interventions in tier-two may be implemented by a reading specialist, paraprofessional, school psychologist and so forth (Stecker, 2007). Typically, students are placed into groups of four to six students who have exhibited similar struggles in a given area. These groups may meet multiple times a week for thirty minutes or more and occur in addition to the general classroom instruction. This tier of intervention is used to determine whether or not offering a more individualized plan in conjunction with the student's general education classroom can help him/her in the area(s) in which he/she is struggling (Wright, 2007). If the child makes adequate progress in this tier, he/she may be dropped back to tier-one interventions (Stecker, 2007). If the child is not making gains, the tier-two intervention can be changed or the child could be moved to the third tier.

Interventions in the third tier are the most intensive methods that a school has to offer (Wright, 2007). At times a child may be placed in extremely small groups of up to three children, but most often these interventions are accessed one-on-one with a professional as they are strictly tailored to meet the unique skill deficits of the student (Stecker, 2007). In some models, schools may choose to implement intense individual interventions before referring the child for a comprehensive evaluation. However, in other cases tier-three is the point at which an evaluation is completed, as the support the child needs may be only available through special education

(Wright, 2007). Thus, this tier involves determining what constant support is needed, and in what environments, to ensure that the child is able to reach his/her true potential.

One of the benefits of the RTI model is that all students can be screened for skill deficits. These screenings allow struggling students to be identified at an earlier stage (Cummings et al., 2008). As previously mentioned, prior to RTI, many students were not identified until they started to fall behind their peers. RTI allows educators to intervene and progress monitor with children whose profiles suggest they are at risk for falling behind. This earlier identification increases the likelihood that they will not fall behind their peers, thus increasing the amount of time they will be spending in general education in the future. Another benefit of RTI is that once a child is referred for higher levels of intervention and possibly special education, there will be a wealth of data available on what has already been attempted in the general education classroom. Referrals will therefore offer more information that will help guide professionals in the eligibility decision and future instructional planning than they previously did.

The RTI model also provides schools with an avenue in which to monitor teacher instruction (Stecker, 2007). Due to the fact that all students are screened in the first tier, schools can use this data to help assess whether or not general changes need to be made with the method of instruction being employed by a given teacher. This is especially important as the RTI model, which consists of intervening in general education for a determined amount of time before referring for special education, implies that general education teachers are starting to teach more and more diverse populations, including those diagnosed with an ASD. Thus, general education teachers will have to be able to adjust their methods of instruction to better fit the needs of their classroom population.

Educating Children with an ASD in General Education

The topic of autism spectrum disorders is an extremely complex topic as each child's profile of strengths and weaknesses is completely unique from that of another child, even if their diagnosis is the same. Due to the diverse manifestations, there is no single method that, if followed by general education teachers, will result in children with ASDs succeeding in the classroom. Nevertheless, general education classrooms are becoming more diverse which calls for the ability to adapt classroom instruction in accordance to the student demographics. In addressing the education of children with ASDs in such classrooms, there is a wealth of basic information that can be provided to teachers that will serve as a good base for directing their approaches to fostering a positive and successful learning environment.

Sensory Accommodations

The first step a general education teacher can take to foster a supportive learning environment for those diagnosed with an ASD is in regards to the classroom set up. It is not uncommon for children with an ASD to become distracted and/or over-stimulated by their immediate surroundings. Many general education classrooms, especially in an elementary school, are filled with brightly colored decorations or student work, which hangs from the ceiling and covers the walls. This type of atmosphere, which likely appears warm and inviting to typically developing children, may seem very chaotic and confusing to children with an ASD. Attending to a teacher in this type of environment, let alone just entering the room, can become an anxiety provoking experience for children in this population (Humphrey, 2008). The sensory input offered in such an environment can easily cause these children to experience a sensory overload which often results in outbursts or tantrums as the child becomes overwhelmed and seeks to avoid the source causing the overload. Instances such as this ultimately result in students

struggling and potentially failing to learn. Thus, it is important for teachers to become aware of any specific sensory sensitivity their students may have. Some accommodations that can be made include avoiding the use of decorations or other visuals that could potentially become distracting and over-stimulating, or placing a child's desk in a low traffic area to decrease disruptions (Griffin, Griffin, Fitch, Albera & Gingras, 2006). It would also be beneficial to dim classroom lights or replace fluorescent lighting with full-spectrum lighting, as the former can actually cause physical pain for individuals with an ASD (Sicile-Kira, 2004).

For children who have a sensitivity to sound, a simple accommodation (if available) could include placing them in a classroom that is known to be quiet in comparison to others (Humphrey, 2008). Teachers could also try reducing the amount of noise in the classrooms. Writing social stories for students that give them information about noisy situations and what they can do may help as well (Griffin et al., 2006). The stories could include coping strategies as well as options for when they become overwhelmed. Such options may involve being allowed to go to an alternative location, such as a resource room or the library, until their anxiety subsides. There are many other effortless accommodations that can also be made. For example, if a school knows there is going to be a routine fire drill, the student could be told ahead of time and maybe even taken to a quieter place when the alarm is about to sound. Teachers could also set up situations in which the child is exposed to a noise that overtime (after the student is unfazed by the current level) increases in intensity.

Children with an ASD may also become overwhelmed visually with their surroundings in a general education classroom. The inability to focus their attention visually, drastically affects their ability to attend to and comprehend the information being taught (Goodman & Williams, 2007). It is not uncommon for a child with an ASD to become fixated on visual stimuli in the

classroom such as a moving object. This also hinders their ability to attend to the various topics being addressed by the teacher. As previously mentioned, teachers who know they will be having a student with an ASD can set up their classroom to be less congested and distraction filled. Along with this, other strategies can also be implemented to help a child with an ASD thrive in the general education setting. To foster independence, visual aids can be placed around the room and with the child to help him/her transition between activities. It is not uncommon for a child with an ASD to miss out on important information presented on a bulletin or chalkboard because of the surrounding distractions. Giving the child small replicas of this information that he/she can hold onto and keep in close proximity has also been found to increase engagement and maintain focus.

Yet another sensitivity some children with an ASD may have is in regards to touch. This broad category can include an aversion to specific textures or to having individuals in contact with, or in close proximity to them (Griffin et al., 2006). In dealing with the latter, teachers could use strategies such as letting the individual know that they are approaching him/her, modeling, and allowing the child to have his/her own space to work at or to sit at the end of a row. In dealing with aversions to specific texture, teachers, depending on the aversion, could avoid using materials in activities that a given child dislikes. The teacher could also choose to employ supplementary materials just for that individual, or assign him/her a task for a given activity that does not involve coming in contact with the material. The options of making such sensory accommodations are endless and will vary between children depending on the specific sensitivity and the degree in which an individual is affected by such a sensitivity.

Curriculum and Instruction

Once accommodations to the immediate classroom environment have been considered for a student with an ASD, teachers must then investigate what modifications in the curriculum would be most beneficial. As previously mentioned, those with an ASD diagnosis of Asperger's syndrome or PDD-NOS are most likely to be included in general education classrooms. These children typically have average IQs, but struggle in various areas of school due to the manifestations of their disorder (Griffin et al., 2006). For example, they may have difficulty with and quickly become frustrated when novel situations arise. It is important for teachers to realize that children diagnosed with an ASD most likely are not going to vicariously attain academic and social skills and will therefore struggle to make any gains from verbal instruction (Goodman & Williams, 2007). This will result in the necessity of extra assistance/instruction from someone (e.g., teacher, paraprofessional, peers) when acquiring new information. Therefore, using direct instruction when educating children with an ASD is an essential component. One option would be to preteach pertinent information to the student before it is taught to the entire class (Griffin et al., 2006). This helps to reduce some of the stress of being presented with novel material while also establishing predictability (Goodman & Williams, 2007).

Children with an ASD also tend to struggle in understanding complex and abstract concepts (Griffin et al., 2006). This deficit in learning is due primarily to the fact that children with an ASD tend to be very literal and inflexible in their thinking. The difficulty they experience with comprehension plays a role in their low ability to problem-solve or discriminate and organize important information. Generally their academic profiles will show weaknesses in math involving problem-solving/critical thinking and in written expression. Despite this, they do tend to show relatively strong abilities in reading recognition and oral expression. Depending on

the child, it might be advantageous for the teacher to consider instructing children thematically as opposed to by subject (Thompson, 2007). Children with an ASD such as Asperger's or PDD-NOS are oftentimes more likely to learn material presented in this fashion due to their attention and knack for details. Considering that making inferences can be difficult for this population, utilizing a thematic approach will help them understand how different concepts are related to one another.

Finding ways to highlight the most important information presented in class is extremely important, as children with an ASD may oftentimes miss key points and become fixated by and stuck on irrelevant information (Goodman & Williams, 2007). One option would be to have peers take notes with carbon paper that can be later given to the child with an ASD (Griffin et al., 2006). Some teachers may choose to use rewards to help keep the students motivated and tuned in to the lessons. Graphic organizers (e.g., timelines, semantic webs, etc.) can also help students with an ASD organize and sequence information that they need in order to complete a writing task. Finding ways to modify assignments and providing more directive instructions on how to complete them can help reduce the student's anxiety and increase the rate of successful completion. Other assignment modifications could include: shortening the assignment, allowing more time for completion or allowing alternative ways of completion (i.e., verbal responses, multiple choice, etc.).

To further promote success in the general education classroom, teachers could work at being consciously aware of their language when teaching students with an ASD. Children diagnosed with an ASD often struggle with comprehending language. As previously mentioned, comprehension is limited due to the fact these children are so literal/concrete in their thinking. They do not pick up on sarcasm or irony and also struggle with thinking abstractly (Humphrey,

2008). Individuals use metaphors and figures of speech everyday without realizing. When teaching in a classroom where a child with an ASD is present, it would greatly benefit the child if the teacher worked at avoiding the use of such language. However, this is not the only alternative. There are resources available that give information on how to explain the meaning of various metaphors in a visual and concrete way. Going over what was said, what was meant, and giving a familiar example will help children in this population begin to understand the hidden meanings.

Behavior

Many of the behaviors that children diagnosed with an ASD exhibit are a result of not understanding and being unaware of how to appropriately cope with frustrations (Goodman & Williams, 2007). Children diagnosed with an ASD will at times commonly exhibit behaviors indicative of aggression, depression, and hyperactivity (Griffin et al., 2006). Some professionals may often misinterpret extreme behaviors, such as tantrums, as the child being defiant (Goodman & Williams, 2007). This is unfortunate when considering past research that has found that the teacher's relationship with a student on the autism spectrum seems to have an effect on that child's social status within the school environment (Robertson, Chamberlain, & Kasari, 2003). Specifically, Robertson et al. found that those who exhibited extreme levels of behavior problems were viewed as having a lower level of social inclusion.

There are a number of behaviors and a large range of triggers that children with an ASD may frequently exhibit. For example, children with an ASD may engage in self-stimulatory behaviors, especially when feeling uncomfortable or stressed (Goodman & Williams, 2007; Griffin et al., 2006). Children in this population often struggle with self-awareness and empathy, concepts that can manifest in the inability to comprehend and express their own feelings and

thoughts as well and those of others. Furthermore, those diagnosed with an ASD also tend to exhibit a very narrow range of interests as well as shy away from interacting or socializing with others. It is easy to see how manifestations such as these can impede not only the learning of the student with an ASD, but that of his/her peers as well.

As was previously mentioned, the classroom environment plays a vital role in whether or not a child with an ASD will be attentive and able to learn. It is not uncommon for children in this population to have a meltdown or tantrum if the environment over-stimulates them, or if there is a change in their typical routine (Thompson, 2002). Thus, it would benefit the student's teachers to make an effort to know what may trigger such outbursts before the child ever enters the classroom. Taking the extra effort to make even the smallest accommodations can have a huge impact on the child's success in the classroom. One of the essential components to decreasing aggressive behaviors, tantrums, frustration, etc., is to give the child as much consistency and predictability as possible (Griffin et al., 2006). While maintaining routines is important to many with ASDs, it is impossible to make sure that the routines are never broken, especially in the school setting. Therefore, if a change in the daily schedule is going to occur, teachers can help lessen the anxiety and frustration by taking the time to tell their students about changes as far in advance as possible. Also, they should provide frequent reminders foreshadowing what is going to occur.

There are also strategies that can be used to encourage appropriate behaviors such as participation in classroom instruction (Goodman & Williams, 2007). For example, a teacher could make a statement and then ask the child a simple question about the statement (i.e. "Seven plus two is nine...Trey, what is seven plus two?"). Because of the fact that those with ASDs have such narrow interests, teachers can also promote interaction/participation by incorporating

some of the child's known interests into lessons or giving him/her options with activities. Furthermore, children in general, but especially those with ASDs, have difficulty sitting for extended periods of time. Therefore it would be valuable for a teacher to either allow for frequent breaks where students get to move around, or let the child hold onto/manipulate an object such as a stress ball, to increase the likelihood that he/she will remain seated.

Social Skills

Explicit social skills training does not tend to be a priority in many general education classrooms, but is an area where those diagnosed with an ASD have profound deficits. For example, it is very common for those diagnosed with an ASD to have difficulty making eye contact, understanding personal space/boundaries, having empathy, and being able to read nonverbal signs (i.e. body language/facial expressions; Bellini, 2003; Waltz, 2002). Furthermore, these children may also exhibit an inability to effectively understand and/or communicate their feelings, as well as have a hard time developing and using self-calming techniques. The importance of having the ability to efficiently communicate cannot be stressed enough as it has tremendous effects on our lives with regards to areas such as relationships and employment. Past research has also shed light on some of the issues that can arise in school from a hindered ability in social skills such as difficulty making or keeping friends and being bullied (Myles & Simpson, 2001).

The everyday social interactions effortlessly engaged in by a majority of individuals are often complex and frustrating tasks for those in the ASD population. Even something as simple as a greeting can become a daunting and confusing task (Myles & Simpson, 2001). If one dissects the components of a typical greeting, that many individuals automatically interpret, it is easy to see how complex it can become. For example, the manner in which one individual greets

another varies greatly depending on factors such as the relationship status, length of time one has known the person, the environment you see the individual in, and so forth. For those with an ASD it is difficult to learn to pick up on such important nuances and from them, decipher the appropriate method of communication.

Myles and Simpson (2001) refer to social skills as the hidden curriculum. In other words, a majority of social skills and cues are not directly taught, but children adopt them through incidental learning and through the ability to generalize such information into other situations. Those with ASDs such as Asperger's syndrome often do not pick up on social cues. Thus, when educating children diagnosed with an ASD in the general education environment it is essential that they be explicitly taught such skills through a variety of means such as direct instruction, prompting, shaping, and so forth.

Prior to teaching social skills to children diagnosed with an ASD, one must evaluate each child in order to gain a full understanding in regards to which foundational skills the child already has, which areas he/she struggles in the most, etc (Myles & Simpson, 2001). A variety of techniques (e.g., interviews, observations, standardized measures, etc) should be utilized to ensure that the most accurate information is obtained (Bellini, 2003). This is a key step as the manifestations of ASDs are extremely unique for each individual and thus each will have a unique profile in the skills they possess (Myles & Simpson, 2001). Having a thorough understanding of where the child is at with social skills will help those teaching the child with the sequencing of the social skills training so that initial demands do not become too overwhelming resulting in outbursts, frustration and refusal to work. For example, as discussed by Myles and Simpson (2001), one would not want to attempt to teach a student with an ASD

how and when to use a respectful tone of voice if he/she does not understand the concept that certain messages can be relayed through voice tone.

Once there is a complete and detailed understanding of a child's functioning level with regards to social skills, instruction can begin. It is essential to keep in mind the fact that many children diagnosed with an ASD are very literal in their thinking and therefore should not be expected to make complex inferences in instruction. Thus, in teaching social skills it is essential that instructors explicitly and repeatedly explain every detail (Myles & Simpson, 2001). Written cues or prompts serve as a great complement to the explicit instruction as they can be easily developed and used as a means of reminding the student of things he/she has been taught. Examples of such prompts and cues may include a simple hand gestures by a teacher to remind the student to raise his/her hand, or a picture of two people facing each other to remind the student to face the person with whom he/she is talking.

As previously mentioned, consistency and predictability are important (Griffin et al., 2006). Myles and Simpson (2001) discuss a sequence of instructing aimed at assisting those diagnosed with an ASD to successfully learn social skills. It is suggested that teachers first work at informing children why certain concepts of social skills are relevant along with how and when they should be used. As previously mentioned, breaking topics down into smaller components can aid in retention and foster success. Thus, making goals and taking time to spell out exactly what they should learn can help. Next, it can be extremely beneficial to use a modeling approach in teaching social skills as this method shows the child exactly what to do and can easily be tailored to any individual.

In instructing children diagnosed with an ASD the concepts of social skills, or any other concepts that involve skills children struggle with, it is important that the instructor be able to

identify when the child is becoming stressed and overwhelmed as this could lead to outbursts and noncompliance (Myles & Simpson, 2001). Either having a familiar individual work with the child or interviewing people such as the parents or therapists to know the signs can help.

Throughout social skills training, it is also important to frequently assess the child's understanding to know if he/she truly comprehends the components or is just mimicking the models. As the child successfully acquires new social skills, it is imperative that he/she is able to generalize what he/she has learned. Generalization can be promoted by allowing the child ample opportunity to use the newly acquired skills in a variety of contexts.

Social skills training is a time consuming process that tends to be most effective when the student can be worked with individually. Children diagnosed with an ASD who have significant delays/deficits with social skills may have the opportunity to receive separate instruction outside of the general classroom. Even though it may not be feasible for a general education teacher to explicitly instruct students in social skills, it would greatly benefit the children and teachers to try to incorporate some of these concepts into lesson plans; especially if the child is not getting any additional instruction outside of the classroom (Waltz, 2002).

Specific Social Skills Training Techniques

As discussed, social skills is a fairly ambiguous topic and there tends to be no specific technique that results in one hundred percent success, especially when considering the diverse manifestations the ASDs. However, research has shed light on a variety of techniques that have tended to result in increasing the social skills and interaction of certain individuals. One such method is the employment of social stories (Bellini, 2003). One of the benefits of social stories is that they are short in length and can easily be written to fit the unique needs of an individual. It is a concrete method for describing, in detail, how and why an individual's actions elicit certain

responses/consequences. It also allows one to lie out specific steps for alternative actions and the responses/consequences that they will likely elicit. Bellini points out that social stories tend to work best for a child with an ASD when he/she is able to role-play the concepts conveyed in the story. This allows the individual to apply the information and receive further guidance and coaching with specific concepts.

It can also be very beneficial to take advantage of times during a typical school day in which students naturally interact the most, such as recess. According to Owen-DeSchryver, Carr, Cale, and Blakely-Smith (2008) children with ASDs tend to socially interact with others at a higher rate when they are participating in integrated activities at recess as opposed to solely interacting with other students enrolled in special education. Rogers (2000) discusses an adult instruction approach aimed at fostering social interactions during recess. The example discussed here involves personnel creating a game that incorporates the specific interests of a given child with an ASD. Then, that adult teaches the game to a group of students during recess, with the hope that this will result in an increase of peer interaction between the typically developing children and the child with an ASD.

As previously mentioned, those with ASDs tend to have difficulty with understanding/communicating their own feelings as well as those of others (Bellini, 2003; Waltz, 2007). An essential component to understanding the thoughts/feeling of others lies in the ability to read non-verbal signs. Typically developing individuals can easily decipher how to converse in accordance to non-verbal signs, but those with ASDs tend to have little to no awareness of such nuances. Thus, making use of various thoughts and feelings activities can help in teaching individuals in this population about non-verbal communication. Bellini suggests using picture cards portraying individuals and having the child work at identifying how an individual is feeling

based the contextual cues (e.g., his/her posture, facial expression, the situation, etc.). There are a number of other activities that can also be geared towards the acquisition of inferential skills in this area such as thought bubble activities, if-then statements, video footage and so forth.

It is also important to instruct individuals with ASDs on the importance of reciprocal interactions, as oftentimes children with ASDs engage in one-sided conversations, disregarding the social rule of asking questions to others and allowing them to talk about their interests. As with any intervention, professionals can be creative in the way they choose to approach a given deficit/delay with social skills. Bellini (2003) presents a newspaper reporter activity that he has employed in addressing this area of social skills. It simply involves having the child with an ASD practice asking questions by pretending to be a newspaper reporter and presenting questions to an individual. In other instances a timer could be used to help individuals know when it is their turn to talk and when it is their turn to listen. As is true of any intervention, the approach one takes to addressing a specific area and the success that occurs will vary greatly from one child to the next.

A common theme with the previously mentioned techniques is that the focus tends to be on providing direct instruction to the individual who exhibits deficits/delays in social skills. Research has also started to address techniques that involve providing instruction to typically developing peers as a means of increasing the social interaction of children with an ASD (Bellini 2003; Owen-DeSchryver et al., 2008; Rogers, 2000). Such peer-mediated approaches involve teaching typically developing peers how to initiate a conversation, prompt a child with an ASD to socialize, as well as how to reinforce the social behavior. This approach enables teachers to take on more of a facilitator role as well as increases the likelihood of a child with an ASD

generalizing the skills he/she has acquired because it allows him/her to practice such skills in a natural environment (Bellini, 2003).

A study conducted by Owen-DeSchryver et al. (2008) illustrates how such an approach can be utilized. The researchers used a variety of peer training strategies over multiple phases. In the initial phase, the designated typically developing peers were either read books about a child with an ASD who was in a general education room, which discussed how students could befriend him/her; or were presented with a circle-of friends activity which worked to show the importance of individuals (e.g., those with ASDs) having positive relationships with individuals other than personnel, such as teachers. In the second phase, the groups discussed strengths and weakness exhibited by both the individual they knew with an ASD and themselves. Lastly, the groups engaged in discussions that were aimed at providing them with strategies for interacting with the students with ASDs. Specifically, the discussion addressed topics such as the activities peers could initiate, the topics they could talk about, how they can help the students with ASDs learn to play and so forth.

The study found that the peer-mediated approach did aid in increasing the social interactions of individuals with an ASD (Owen-DeSchryver et al., 2008). Furthermore, it was observed that the untrained typically developing peers also initiated more interaction with the students with ASDs. In essence the untrained typically developing peers were able to pick up on the tactics being modeled by the trained peers, which resulted in more social interaction among the individuals diagnosed with an ASD. The implications of such research suggests that instead of devoting all the schools resources to solely instructing a child with an ASD, it may be beneficial to incorporate the training of typically developing peers.

Social Inclusion

Addressing factors that will foster the social inclusion of a child diagnosed with an ASD has the potential to tremendously impact his/her overall academic performance as well as personal growth. Past research on social preference has tended to reveal that typically developing students in general education have a low preference for peers with disabilities such as an ASD (Boutot & Bryat, 2005). While children diagnosed with ASDs commonly struggle with developing and maintaining friendships, it is known that having relationships with one's peers plays a role in not only emotional and social development, but cognitive development as well (Myles & Simpson, 2001; Boutot & Simpson, 2005). Acceptance among peers is the initial step in building positive relationships, thus it is important for schools to put into place, strategies to foster the social inclusion of children with ASDs in the general education classroom.

Boutot (2007) gives a variety of characteristics regarded as being indicators of higher levels of acceptance. Such factors include being perceived as part of the class and low incidences of aggressive and loud behaviors. In contrast, Boutot also discusses items that tend to be indicative of low levels of acceptance with peers such as: extreme behaviors, frequent class removal, the use of unfamiliar equipment (i.e., communication devices, visual aids, etc.), and a negative attitude. With regards to frequent classroom removal, schools could work to schedule the times the student leaves the class to coincide with natural transitions for the remainder of the class as to avoid transitions that call potentially negative attention to the child. If possible, when placing a child with an ASD into a general education classroom, it is important to find a teacher who embraces techniques that promote and support acceptance among students. For example, it would greatly benefit the child with an ASD to be in a classroom in which the teacher frequently has children working in groups, actively encourages support and cooperation among peers and so

forth. If such an environment is unavailable, personnel managing the student's case could consult with and encourage the classroom teacher to employ such techniques as well as provide the teacher with the necessary assistance and resources.

It would also be advantageous to take time to educate typically developing students within the classroom about individual differences in an attempt to increase peer acceptance. For example, some of the previously mentioned methods used in the first phase of the Owen-DeSchryver et al. (2008) study could easily be used in a classroom setting. In instances in which parental permission is obtained, teachers can talk with their students in detail about a specific child in their classroom with an ASD. Boutot (2007) points out that the appropriate amount and type of information digressed about a student will fluctuate depending on the child's grade. However, in general it is best to not focus on things that the child has difficulties with or what makes him/her different. At the same time, it would be appropriate to discuss any distinct accommodations in the classroom or any unique behaviors the child tends to exhibit. Providing such information can work to answer any questions peers may have, lessening their confusion.

Children prefer to interact with individuals with whom they have things in common with. Thus, it is more important to discuss areas the child with the ASD is interested in and in what ways he/she is similar to others in the class (Boutot, 2007). Boutot also notes that if a child from a special education class is going to be joining a general education class, schools could have a couple of students from the general education class spend time with the child in the special education room prior to moving. Having the general education teacher pick students who are regarded as having high levels of social inclusion will aid in the successful inclusion of the child with an ASD once he/she joins their class.

Just as important as the child's relationship with his/her peers, so is the relationship between the student and his/her teacher. Ensuring that a positive rapport is established between the child diagnosed with an ASD and his/her teacher can have profound positive effects with regards to that child's success in not only education but his/her personal growth as well (Boutot, 2007). Past research has found that when there is a positive relationship between the student with an ASD and the teacher, they tended to have a higher level of social inclusion within the classroom (Robertson et al., 2003).

Teacher Supports

The information provided in this literature review gives a broad look into some of the pertinent factors to address when educating children diagnosed with an ASD in general education classrooms. It is evident that a tremendous amount of work must go into educating children in this population. Add on to this the fact that the appropriate means of education will likely be completely different from one child with an ASD to the next, due to the large continuum of manifestations of these developmental disorders (Thompson, 2007). These factors play a large role in the daunting task school personnel, such as the general educators, face as they are needing to create programs and techniques that foster and maintain the successful inclusion of children in the ASD population without having any concrete guidelines to follow (Simpson, De Boer-Ott, & Smith-Myles, 2003). Thus, it is no surprise that many professionals in the school system have frequently reported feeling ill equipped, and maybe even incapable, of effectively fulfilling the needs of those with ASDs in the general education setting.

The extra demands being put on general education teachers when a child with an ASD is placed into their classrooms call for enhanced teacher training and support. Simpson et al. (2003) discuss a collaboration model aimed at providing these critical components. One area they

address is inservice training, as those in general education tend to lack the essential background knowledge and training in how to work with and teach children diagnosed with an ASD. In a best case scenario, these teachers would be given not only group inservice training on general information about those with ASDs, but individual training as well on specific instructional methods, accommodations, and modifications that will help the student succeed.

Simpson et al. (2003) also point out that placing children in the ASD population into smaller classes can aid in successful inclusion. In general a lower student/teacher ratio is an important factor for not only academic and social development, but for teacher job satisfaction as well. These smaller classes allow the teacher to give children more of the structure and direct attention they tend to need and also allows for lessons to be more individualized. However, placing students into smaller classes is not always a feasible solution due to budget restraints and therefore other avenues must be explored.

While some students with an ASD may be able to independently function in the general education classroom, others may need additional assistance provided by a paraprofessional (Robertson et al., 2003). Past research has found that the active role of paraprofessionals seems to reduce the role of general education teachers, resulting in less interaction between the student and teacher. Thus, general education teachers have reported in the past that these situations foster environments where they feel less directly responsible for the education and success of children with disabilities who are included in their classroom. Despite this, research has also suggested that utilizing paraprofessionals in general education classrooms including children with an ASD is an essential component to success (Simpson et al., 2003). Generally these individuals have a wealth of information on the child's characteristics, techniques for managing any unique behaviors, and methods of instruction and environmental factors that will influence the student.

Thus, not only can paraprofessionals help the child succeed, they can also give the general education teacher vital help with making any accommodation and modifications in the classroom, with curriculum, methods of instruction and so forth. Simpson et al. (2003) suggest having a paraprofessional in the general education classroom that can assist with all students as opposed to solely focusing on the child with the ASD.

A study conducted by Robertson et al. (2003) found that general education teachers reported that working in a collaborative relationship with paraprofessionals better enabled them to build a positive relationship with the children who had autism. Paraprofessionals referred to in this study did not stay in constant close proximity to the students. They also did not take the students away from class activities to work individually, as opposed to previous research. Thus the quality of the relationship between the teacher and student with an ASD in this study was not affected by the presence of paraprofessionals.

Chapter III: Summary, Critical Analysis, and Recommendations

Introduction

This chapter will provide a general overview of the preceding literature review. Related to this, it will also analyze the information provided and highlight the essential features to be taken away from this literature review. The chapter will conclude with recommendations as to what could occur in the future to shed more light on and help educators become more successful in educating children diagnosed with an autism spectrum disorder (ASD) in general education classrooms.

Summary of the Literature Review

The literature on educating children diagnosed with an ASD brings to light the importance of educating general education teachers on how to adapt to meet the needs of those included in their classrooms. While some children on the autism spectrum need special education, others (especially those with Asperger's Syndrome and Pervasive Developmental Disorder-not otherwise specified; PDD-NOS) can be solely placed in general education classrooms (Thompson, 2007). This environment allows them to advance in areas they struggle in by observing and working alongside typically developing peers who do not have the same everyday struggles. Because of legislation such as the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA 2004) and No Child Left Behind, schools are moving towards a response to intervention (RTI) model that enables more children to be included in general education (Cummings, Atkins, Allison, & Cole, 2008). This means that teachers are educating a more diverse group of students.

In order to successfully educate students on the autism spectrum, teachers need to be flexible and accommodating with their classroom structure and how they present the curriculum.

They also need to be knowledgeable in or have supports for finding information on what they can do to foster a supportive learning environment for children in the autism population. Finding ways to decrease noise levels and removing unnecessary visuals can be basic steps taken to help decrease the over-stimulation which can lead to the tantrums that some children with an ASD experience (Griffin, Griffin, Fitch, Albera, & Gingras, 2006; Humphrey, 2008). Making sure that each school day is consistent and predictable can help children tremendously. When fluctuations do occur, it is important to notify these students of the changes and give them constant reminders so they will be more prepared for the change when it occurs.

In educating this population, teachers may need to find ways to preteach more abstract concepts to children before presenting material to the entire class. There is some literature that suggests teaching information thematically as opposed to subject by subject can be beneficial (Thompson, 2007). Children with an ASD tend to have difficulty making inferences and thinking abstractly and therefore, utilizing thematic approaches will help them build bridges between overlapping information. It would also benefit children with an ASD if teachers consciously worked on talking in ways that avoided metaphors/figures of speech, as children with ASDs are most often very literal thinkers (Humphrey, 2008).

Furthermore, teachers may need to start incorporating lessons for concepts that are not generally taught in the classroom. One of the predominant manifestations that occur with ASDs is a deficit with social skills. Planning short lessons on teaching and practicing these skills, or even finding ways to incorporate the use of such skills into various lessons can help children with such deficits progress in this area (Waltz, 2002). It is also important to note that the relationship between the teacher and the child with an ASD has been shown to influence or at least be related to that student's social status in the classroom (Robertson, Chamberlain, &

Kasari, 2003). Thus, finding ways to build rapport and effectively work with children who may exhibit behavior problems from time to time can go a long way.

Critical Analysis of the Literature Review

The information supplied in this literature review provides a solid base of information to work from in addressing the topic of educating children with ASDs in the general education classroom. It is evident that individuals entering the educational profession will be working with a much more diverse population than in the past. Therefore it is essential that, for the success of these children, the teachers must be willing and able to put in the extra time and effort to foster environments where students with ASDs will be able to successfully learn.

No concrete guidelines were found on what has proven to be most successful for educating children with an ASD. This is due partially to the fact that each child with an ASD is completely unique from the next. Thus there is no “one size fits all” model for successfully educating children in this population. This makes even more apparent, the essentiality of having professionals in the school knowledgeable in the area of ASDs, as they can provide support and guidance for teachers who may not be aware of what would work best. It would be unreasonable to expect one teacher to effectively come up with strategies to fit the unique profile of every child with an ASD who he/she will be asked to educate.

Recommendations

Based on the current literature available on educating children with ASDs in the general education setting, it is clear that more research in this area needs to be conducted. We know from the literature that there are a variety of methods available that will likely help foster a supportive learning environment. While there are strategies and modifications that can help students with an ASD thrive in a general education setting, they take knowledge, time, flexibility and patience.

This brings to mind a variety of questions regarding the education of children with ASDs in such a setting. Are appropriate accommodations being made for this population? If so, are they sufficient, and being monitored and modified when needed? Are general education teachers being given the support and assistance they need to effectively educate this population?

Continued research into this area is warranted considering that students with ASDs are being included more often in the general education setting and many without additional assistance. It is important to address what formal training current and prospective general education teachers are receiving to prepare them for their broadening role in the classroom. It would also be beneficial to address parent knowledge in educating children diagnosed with an ASD. Many would serve as excellent sources for obtaining information about the individual student, how he/she learns best, what motivates him/her and so forth. Likewise, it would be beneficial if schools could provide parents with information on what they are doing within the classroom. Perhaps the parents can help the student learn, comprehend, and build on information presented in the classroom. In general, it is important to note that there are no definite answers with regards to how to successfully educate children on the autism spectrum. Thus it is imperative that this topic be brought to the forefront in schools and research continue so that we can better prepare educators and effectively separate what works from what does not.

References

- Autism and Developmental Disabilities Network (2007). *Community report from the autism and developmental disabilities monitoring (ADDM) network*. Retrieved June 29, 2008, from <http://www.cdc.gov/ncbddd/autism/documents/AutismCommunityReport.pdf>
- Bellini, S. (2003). Making (and keeping) friends: A model for social skills interactions. *The Reporter*, 8(3), 1-10. Retrieved June 27, 2008, from <http://www.iidc.indiana.edu/irca/SocialLeisure/socialskillstraining.html>
- Boutot, E. A. (2007). Fitting in: Tips for promoting acceptance and friendships for students with autism spectrum disorders in inclusive classrooms. *Intervention in School and Clinic*, 42(3), 156-161.
- Boutot, E. A., & Bryat, D. P. (2005). Social integration of students with autism in inclusive settings. *Education and Training in Developmental Disabilities*, 40(1), 14-23.
- Cummings, K. D., Atkins, T., Allison, R., & Cole, C. (2008). Response to intervention. *Teaching Exceptional Children*, 40(4), 24-31.
- Goodman, G., & Williams, C. M. (2007). Interventions for increasing the academic engagement of students with autism spectrum disorders in inclusive classrooms. *Teaching Exceptional Children*, 39(6), 53-61.
- Griffin, H. C., Griffin, L. W., Fitch, C. W., Albera, V., & Gingras, H. (2006). Educational interventions for individuals with Asperger syndrome. *Intervention in School & Clinic*, 41(3), 150-155.
- Humphrey, N. (2008). Including pupils with autistic spectrum disorders in mainstream schools. *Support for Learning*, 23(1), 41-47.

- Myles, B. S., Simpson, R. L. (2001). Understanding the hidden curriculum: An essential social skill for children and youth with asperger syndrome. *Intervention in School & Clinic, 36*(5), 279-286.
- Owen-DeSchryver, J. S., Carr, E. G., Cale, S. I., & Blakely-Smith, A. (2008). Promoting social interactions between students with autism spectrum disorders and their peers in inclusive school settings. *Focus on Autism and Other Developmental Disabilities, 23*(1), 15-28.
- Robertson, K., Chamberlain, B., & Kasari, C. (2003). General education teachers' relationships with included students with autism. *Journal of Autism and Developmental Disorders, 33*(2), 123-130.
- Rogers, S. J. (2000). Interventions that facilitate socialization in children with autism. *Journal of Autism and Developmental Disorders, 30*(5), 399-409.
- Sicile-Kira, C. (2004). *Autism Spectrum Disorders: The complete guide to understanding autism, asperger's syndrome, pervasive developmental disorder, and other ASDs*. New York: The Berkley Publishing Group.
- Simpson, R. L., De Boer-Ott, S. R., & Smith-Myles, B. (2003). Inclusion of learners with autism spectrum disorders in general education settings. *Topics in Language Disorders, 23*(2), 116-133.
- Stecker, P. M. (2007). Tertiary intervention. *Teaching Exceptional Children, 39*(5), 50-57.
- Thompson, T. (2007). *Making sense of autism*. Baltimore: Paul H. Brookes Publishing.

Towbin, K. E., Mauk, J. E., & Batshaw M. L. (2002). Pervasive developmental disorders.

In M. L. Batshaw (Ed.), *Children with disabilities* (5th ed., pp. 365-388).

Baltimore: Paul H. Brookes Publishing.

Tsai, L. Y. (1998). *Pervasive developmental disorders* [Electronic version].

Retrieved February 20, 2008, from: www.nichcy.org/pubs/factshe/fs20txt.htm

Waltz, M. (2002). *Autistic spectrum disorders: Understanding the diagnosis and getting*

help. Sebastopol, CA: O'Reilly and Associates.

Wright, J. (2007). *RTI toolkit: A practical guide for schools*. Port Chester, NY: National

Professional Resources.