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Effective Inclusion of Students with Autism Spectrum Disorders

Abstract

Autism Spectrum Disorder is a very complicated disability. There are various levels of ability a student with this disorder may have and there are many types of this disorder. Teachers must especially be experts on ASD as it is a common disorder. The more teachers know about ASD, the better it will be for the students. There are several effective strategies that may be used with students with ASD that can be helpful for all students in the classroom. Trainings that cover Autism Spectrum Disorders are found to be very helpful for teachers as they become much more comfortable when teaching these students when they are more knowledgeable on the disorder. However, even though it is known that trainings are effective, there are not many schools that actually provide these trainings. This was found through a survey that was conducted to elementary and middle school teachers in five school districts in the Rochester area.

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Abstract:

Autism Spectrum Disorder is a very complicated disability. There are various levels of ability a student with this disorder may have and there are many types of this disorder. Teachers must especially be experts on ASD as it is a common disorder. The more teachers know about ASD, the better it will be for the students. There are several effective strategies that may be used with students with ASD that can be helpful for all students in the classroom. Trainings that cover Autism Spectrum Disorders are found to be very helpful for teachers as they become much more comfortable when teaching these students when they are more knowledgeable on the disorder. However, even though it is known that trainings are effective, there are not many schools that actually provide these trainings. This was found through a survey that was conducted to elementary and middle school teachers in five school districts in the Rochester area.

Introduction

Studies have shown that training significantly impacts a teacher's knowledge as well as their comfort level when teaching in inclusive classrooms. With a greater knowledge of disability and effective strategies to use when teaching students with disabilities, educators generally feel more comfortable when students with disabilities are included into their classrooms (Burns, Leblanc, & Richardson 2009). We know that trainings are helpful and effective however, I wanted to know whether trainings are actually being provided in local schools and how often. There is little research that shows that trainings are consistently being provided in schools in regards to inclusive education of students with Autism Spectrum Disorders. Therefore, the goal of my research was to find out whether trainings are being provided in schools with regards to Autism Spectrum Disorders and whether there are strategies being used in order to promote effective inclusion of students with ASD.

In order to gather this information, I sent out surveys to general and special educators in the school districts surrounding Rochester, New York. The goal of the survey was to gather information on whether local schools provide training as well as to find whether that had an impact on the strategies used within the classroom. In addition to this, I asked which strategies were found to be most and least helpful in regards to teaching students with ASD.

What is Autism Spectrum Disorder?

In order to be able to successfully include students with Autism Spectrum Disorders, (ASD), professionals must first understand the spectrum of disorders as it is a very complicated one. Autism Spectrum Disorders include five subtypes as indicated by the American Psychiatric Association: Autistic Disorder, Asperger's Disorder, Rett's Disorder, Childhood Disintegrative Disorder, and Pervasive Development Disorder Not Otherwise Specified (American Psychiatric Association 2000). Across the spectrum there are a range of symptoms from mild cognitive social and behavioral deficits or more severe symptoms where children have intellectual disabilities and are sometimes nonverbal (Hughes, Katsiyannis, McDaniel, Ryan, & Sprinkle 2011). Children with ASD may exhibit perseverative and self-stimulatory behaviors, impairments in social relationships, impaired communication and language skills, and usually have a restricted range of interests. This list of deficits "can jeopardize student learning, not only because they interfere with relationships, but also because they interfere with the learning environment" (Goodman & Williams 2007, p. 53). This makes including students with ASD in a mainstreamed classroom especially difficult. However, it is important that these students do get included, and that it is done so correctly. There are many similarities within the spectrum, but there are great differences as well that make each one unique.

Autistic Disorder is one of the more common among the five subtypes. Autism is found within the first three years of life. Features of autistic disorder include abnormal or impaired development in social interaction and communication as well as a restricted repertoire of interests. The "impairment in reciprocal social interaction is gross and sustained" (American Psychiatric Association 2000, p. 72). Therefore, children with Autistic Disorder may be impaired in the use of several nonverbal behaviors such as in the ability to make eye contact, facial

expression, body postures, and gestures. They may also be lacking the development of language and in individuals who are verbal, they may be impaired within the ability to initiate or sustain a conversation. Children with Autism may also be unable to understand humor, irony, and implied meaning. They also have restricted, repetitive, and stereotyped patterns of behavior, interests, and activities. Individuals with Autism also exhibit stereotyped body movements such as clapping, finger flicking, rocking, or swaying. Those with autism may also have a range of behavior symptoms. These include, but are not limited to, hyperactivity, impulsivity, aggressiveness, and self-injurious behaviors. Responses to sensory stimuli may also be odd, such as having a high threshold for pain, oversensitivity to sounds or being touched, and a fascination for certain stimuli. Although there are a great deal of struggles and limitations for those with Autism, it is common that they gain developmentally in some areas (American Psychiatric Association 2000).

Asperger's Disorder differs a bit due to the fact that those with Asperger's do not exhibit delays in the area of verbal communication, and can often develop large vocabularies (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011). The most common features of Asperger's Disorder are sustained impairments in social interaction. They also commonly develop restricted and repetitive patterns of behavior, interests, and activities in which they will participate in (American Psychiatric Association 2000). Social interaction lacks in children with Asperger's Disorder, although as they get older, they do have a desire to create friendships. However, they often lack the understanding of the conventions of social interaction. Those with Asperger's Disorder do not have significant delays in cognitive development or in age-appropriate self-help skills (American Psychiatric Association 2000).

Rett's Disorder is a rare genetic disorder and most commonly affects females (Hughes Katsiyannis, McDaniel, Ryan & Sprinkle 2011). Those with Rett's Disorder have a normal prenatal and perinatal period with normal psychomotor development in the first five months of their lives. Head growth then decelerates in these children between 5 and 48 months and consequently, there is a loss of previously acquired purposeful hand skills between 5 and 30 months. Within that time, stereotyped hand movements evolve resembling hand-wringing or hand washing (American Psychiatric Association 2000). Social interaction may develop later on, however, the "communicative and behavioral difficulties usually remain relatively constant throughout life" (American Psychiatric Association 2000, p. 76).

Childhood Disintegrative Disorder, or CDD, is also a rare disorder that primarily affects males. (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011). Childhood Disintegrative Disorder is defined as being a "marked regression in multiple areas of functioning following a period of at least 2 years of apparently normal development" (American Psychiatric Association 2000, p. 77). Between ages 2 and 10, the child has a clinically significant loss of previously acquired skills in two or more of these areas: expressive or receptive language, social skills or adaptive behavior, bowel or bladder control, play, or motor skills. Social and communicative deficits resemble those seen in Autistic Disorder (American Psychiatric Association, 2000).

Finally, Pervasive Developmental Disorders Not Otherwise Specified, or PDD-NOS, is used to describe children who exhibit at least one characteristic of an ASD subtype, but do not meet all of the specific diagnostic criteria (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011).

How common is ASD?

The prevalence of Autism Spectrum Disorder, (ASD), is increasing and currently at the rate of 1 in 110 children who have ASD. Autism Spectrum Disorder, once thought to be fairly rare, is now the most common neurological disorder affecting children as well as one of the most common developmental disabilities (Burns, Leblanc & Richardson 2009). When ASD was found eligible for IDEA service, there were 5,415 students receiving these services which only represents less than one percent of all students with disabilities. Currently, ASD accounts for 4.97% of all students with disabilities, which is a drastic increase (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011).

What is Inclusion?

Inclusion is a complex practice that involves much more than simply “the act placing [a child] in a group or class” as the American Heritage Dictionary has defined it in the past (Irvine & Lynch 2009). A definition that better describes inclusion says that inclusion is:

a unified system of public education that incorporates all children and youths as active, fully participating members of the school community; that views diversity as the norm; and that ensures a high-quality education for each student by providing meaningful curriculum, effective teaching, and necessary supports for each student (Irvine & Lynch 2009, p. 846).

This not so simple definition shows that there is a lot involved in the process of inclusion.

Inclusive education requires an “individualized needs-based approach” (Irvine & Lynch 2009, p. 846). This means that teachers must adapt their lessons to adhere to the needs of each and every student. All students have varied needs that must be met, and supports that they may need in order to truly be able to learn in any type of classroom. Lipsky and Gartner (1997) examined

inclusive practices and found that there are seven elements that are common among effective inclusion education environments. They named these the seven essential elements of inclusion which include visionary leadership, collaboration, support for staff and students, effective parental involvement, refocused use of assessment, appropriate levels of funding, and curricular adaptation and effective instructional practices (Irvine & Lynch 2009).

There are many benefits to an inclusive classroom. First and foremost it has been found that inclusion results in gains of social development because it has been found that students improved much more in this area of social competence. When students with disabilities are placed in restrictive settings, they tend to interact with teachers rather than their peers (Goodman & Williams 2007). Since peer interaction is crucial to proper social development, it is important that students with disabilities are given the opportunities to do so in a general education setting.

Why should students with ASD be included?

Students with ASD are too often placed in segregated schools. The problem with these segregated schools is that they contain only students with disabilities. Therefore students placed in these settings are learning from their disabled peers rather than non-disabled peers. They are not learning appropriate behaviors in these schools because they see such extreme behaviors and they are learning from those instead because that is what is being modeled by their peers. Not only do the students with ASD benefit from being included in a general educational setting, but their “peers benefit from being exposed to children with a diversity of temperaments” (Eldar 2010, p. 98). If students with ASD must be placed in segregated schools, these schools “should really be centers of excellence (not just so claimed), pioneering new ways of working with ASD and dealing with the most extreme cases” (Jordan 2008, p. 13). Therefore, students with ASD should only be placed in these schools when the case is quite severe. There are several other

reasons that students with ASD should be included into a general education setting. For, “education can be, and perhaps should be, an effective ‘treatment’ for ASD in the sense that, since there is so much that individuals with ASD have to learn that is just intuitively grasped by the non-autistic, learning may best be enhanced through high-quality teaching” (Jordan 2008, p. 11). In schools, students are taught values, knowledge, and skills that will enable full participation in their community and they learn from their peers. Autism Spectrum Disorders can occur across the full ability range, and should be able to use that ability in a general education setting. Studies have also shown that students with ASD who are fully included gain a great deal from being in inclusive settings. For instance, they exhibit higher levels of engagement and social interaction, they give as well as receive higher levels of social support, and they have more advanced personal educational goals than students with ASD in segregated placements. Since these students are able to be involved in a community of more positive role models, they will be more likely to be able become active members in society (Eldar 2008).

How can students with ASD be effectively included?

It is true that some aspects of mainstream teaching that are considered best practice are not always suitable for students with ASD. These include the highly stimulating environments with posters and students art work all over the place and talk based teaching. (Beadle-Brown, Roberts & Youell 2011). However, there are many ways in which students with ASD can effectively be included.

First and foremost, teachers need to be adequately trained in educating students with disabilities, specifically students with ASD. Since we are seeing a greater increase in students with ASD being included into general education settings, there is a “real need within the

professional community to understand ASD and the many complexities presented by the various dimensions of the disorder” (Burns, Leblanc & Richardson, 2009, p. 167). There is currently confusion about ASD due to low levels of training, awareness, and knowledge and understanding. Because of this confusion, there are many misunderstandings about the disability. (Beadle-Brown, Roberts & Youell, 2011). Since ASD is such a complex disorder there is a significant amount for educators to learn about the disorder and how its many complexities can severely interfere with learning. Teachers need to be comfortable teaching students with ASD as:

research and literature illustrates that teachers will become more comfortable and positive about including students with disabilities in the classroom as they are themselves able to gain first-hand experiences, and that this may lead to change in values and beliefs consistent with an inclusive school philosophy (Harding 2009, p. 94).

A study was completed with university students enrolled in a bachelor’s degree in order to find whether trainings would be effective in changing participants’ perceptions related to dealing with a student with autism in the classroom, in increasing technical knowledge base, and in providing specific teaching strategies directly related to successfully programming for a student with autism in the inclusive classroom. (Burns, Leblanc & Richardson 2009). In this study, each group received 200 minutes of instructional training offered by ASD consultants. Some objectives of the training include understanding the disorder, diagnostic criteria, and recognizing the communication learning styles of students with ASD. There was a significant increase in the knowledge of how to support students with ASD, and a slight increase in the comfort level of teaching students with ASD. Therefore training in fact does help in the understanding in teaching students with ASD, and other disabilities. (Burns, Leblanc & Richardson 2009). Training also

makes professionals feel less apprehensive when having a student with autism included into their classroom. When teachers lack the necessary training, they are more stressed because of the lack of knowledge of how to teach these students. In fact, research has found that “stress of any kind within the profession had a negative impact not only on the teacher and the learning process but also on the general attainment of most identified educational goals” (Burns, Leblanc & Richardson 2009, p. 168).

Including students with ASD also involves strong collaboration between everyone involved in the education of the student. This includes the principals, general and special education teachers, paraprofessionals, families, specialists, and any other party involved in the success of the students with ASD. All parties must work together in order to provide consistency for the student and “the involvement of parents and/or guardians in their children’s academic programs promotes consistency across all environments and assists in the generalization and maintenance of skills acquired at school” (Irvine & Lynch 2009, p. 855). The student with ASD will be reminded and reinforced to use the learned information and behaviors at home when the family is involved. Also, since ASD is a behavioral disability, it can “present a myriad of challenges to the school environment and it is essential that all staff work a very high level of consistency and understanding while addressing specific student behavior” (Harding 2009, p. 93). The collaboration needs to be there so that everyone can work as a team keeping consistency when dealing with behaviors as well as other methods in teaching students with ASD. Therefore, the child with autism will learn what is expected of them throughout their education and other aspects of their life in terms of how to behave.

The teacher-child relationship is also an important factor in including students with ASD. Rita Jordan presents a nice way of looking at it when she says in her article, “Just as these

students have no natural intuitive ways to understand their teachers, their teachers, in turn have no natural intuitive ways of understanding students with ASD” (Jordan 2008, p. 13). This means that teachers have to work twice as hard to form that crucial relationship with a student with ASD. Because students with ASD have deficits in the areas of social and emotional understanding, it is more difficult for them to gain relationships with both their peers and teachers. Since the teacher-pupil relationship is “viewed as a living system and a vehicle through which positive emotional experiences, concrete help, information and support can be organized and transmitted” (Emam & Farrell 2009, p. 408), it is crucial that teachers form a positive relationship with all students. Educators will need to work out what to do cognitively when relating to students with ASD, and cannot succinctly rely on their natural social instincts. (Jordan 2008). When positive relationships are formed, students are more comfortable in the classroom. Since children with ASD find it difficult to understand the teacher’s perspective, there is already a gap created between the student and teacher that make it harder for them to form a relationship with one another. The “teacher-pupil relationship lacks the living experience of shared moments when teachers ‘laugh’ or ‘make jokes’. As a result, teachers learn to ‘distance’ themselves much in the same way as the pupils ‘do’” (Emam & Farrell 2009, p. 412). This is a barrier for the student with ASD because right off the bat, they have a hard time forming that important relationship with their teacher. These students also get frustrated because of the fact that others do not understand how they themselves perceive things.

Modifying instruction and lessons is another important thing to do when mainstreaming a student with ASD. The great thing about using strategies is that they are always beneficial for all students as everyone has their own unique learning styles. Using many different methods of teaching is recommended and effective in all classroom settings. (Goodman & Williams 2007).

Each child with ASD is unique and gain sensory input through various self-stimulatory behaviors. These behaviors include: Auditory (noisemaking, vocalizations, and covering ears), Visual (covering or closing eyes, looking at things out of the corner of eyes, flapping hands, filtering light, and rapidly blinking eyes), Tactile (rubbing things, mouthing items, pinching/biting self), Olfactory (smelling items, holding nose), Gustatory (licking things, ruminating), Vestibular (rocking, bouncing, spinning), and Proprioceptive (crashing into and squeezing things or people, grinding teeth, biting self, and chewing on things) (Beal-Alvarez, Jolivette & Mays, 2011). When children engage in these self-stimulatory behaviors, they are less engaged in the instruction going on. Self-stimulatory behaviors often seen from students with ASD, also called stereotypy, are repetitive, do not appear to be serving a purpose, and may interfere with the student's ability to attend, communicate, learn, and interact. Since these behaviors have a negative impact on their education, these self-stimulatory behaviors should be replaced with appropriate behaviors (Beal-Alvarez, Jolivette & Mays, 2011).

Before doing this, teachers must first conduct a Functional Behavior Assessment, or FBA, in order to determine the function of the behavior. In order to do this, there must be at least five observation sessions where the behavior occurs. Through these observations, the observer should gather a complete description of the behaviors that the student engages in to gain sensory input or reduce environmental overstimulation through the vestibular system, as these are the types of sensory sensitivities students with ASD experience. Within the description, also included should be body parts being engaged, directions the student moves those body parts, the length, frequency, and the intensity of the behavior. Once the FBA is completed, an appropriate replacement behavior can be determined. The replacement behavior will be one that serves as the

same function as the replaced behavior and will be a sensory activity or intervention that provides movement in a more appropriate way (Beal-Alvarez, Jolivette & Mays, 2011).

These sensory interventions “help students register and modulate responses to sensory stimuli allowing them to overcome some of their over reactive or under reactive responses to sensory stimulation” (Beal-Alvarez, Jolivette & Mays 2011, p. 49). Therefore, students who exhibit self-stimulatory behaviors will be able to slowly adjust to gain the same sensory input, but in a more appropriate and acceptable way. Some specific replacement behaviors for those seeking vestibular, or movement, stimulation include jumping on the trampoline, and sitting in a rocking chair or swing. Educators must also determine when to do these replacement sensory activities, as a student may need it throughout the day, and before or during certain instructional activities. Once the replacement behavior is in place, it must be monitored and adjusted as needed. For instance, if the student is still engaging in frequent self-stimulatory behaviors, their replacement activity may need to happen more frequently or at longer periods of time. (Beal-Alvarez, Jolivette & Mays, 2011). Once the behavior is effectively replaced, the student with ASD will have a much easier time when it comes to focusing on instructional activities.

Several strategies have been empirically supported and are evidence-based on researching the effectiveness of them, specifically when engaging students with ASD in the learning. These strategies help to decrease the off task, self-stimulatory behaviors. Many of these strategies have been found effective in improving academic and social skills in early education as well. The reason these strategies reduce inappropriate behavior is because the student is engaged in proacademic and prosocial behaviors rather than their non-academic self-stimulatory behaviors. (Goodman & Williams 2007).

One strategy is to engage students through their auditory senses such as “during more challenging instructional events, such as transitions and extended listening activities, some children with ASD are more engaged if language is presented in a song” (Goodman & Williams 2007, p. 56). Since transitions are especially hard for students with autism, a song that is regularly played or sung during these times may help cue children to do the desired behavior, such as switching activities. Teachers should select specific songs for common transitions so that students will learn which transition is occurring so that routine can be consistent and predictable. This makes it so that the student with ASD can prepare themselves for what is next in order to reduce the anxiety they may feel. The effectiveness of this strategy can be measured by documenting the level of prompting needed or the length of time required by the students in order to complete the transition. Prompts are given in the beginning of the implementation and should be slowly faded so that eventually the students will only need to hear the song to complete the required transition or task. When songs are used during listening activities, students with ASD remain more engaged throughout the listening activity, such as circle time or story time. One way to incorporate songs during these activities is to intersperse briefer songs throughout verbal instruction times. This can be especially effective when the student with ASD seems to be losing interest and off task. (Goodman & Williams 2007).

There are various practices using visual engagement that are helpful for students with ASD. Teachers have to be careful when doing this because students with ASD often “become fixated on the movement of objects in the classroom and may also attend to other inappropriate visual stimuli” (Goodman & Williams 2007, p. 55). For instance, visual schedules can be used in the classroom using photographs, drawings, or words. Visual schedules are particularly helpful to students with autism because “they clearly indicate what has been completed and what

must be done next” (Goodman & Williams 2007, p. 56). Children with autism need that sense of routine and predictability as to what is coming up later in the day in order to decrease anxiety. Schedules can also be used to increase the independence for students with ASD as these students usually require excessive prompting for classroom activities and the use of the visual schedule lessens that. Visual schedules can also be used throughout the day for less structured activities, including centers. A visual schedule can portray symbols and/or pictures of what is expected of them at that center. Models are another visual that students with ASD can benefit from (Goodman & Williams 2007).

Children with ASD often play with toys inappropriately or self-stimulate using certain parts of the toys. This behavior may interfere with their inclusion into the classroom because it sets them apart from their classmates in the general education setting. Appropriate models would provide them with photographs showing premade structures of items they may play with such as blocks and train tracks. This shows students with ASD how they may use the toys during leisure time when there is less guidance. Many students with ASD often have difficulty developing original ideas so being provided with a visual gives them something to copy if they would like to do so. (Goodman & Williams 2007). It was found in a field testing that “as a result [of using models], students use the materials as intended and engage in fewer stereotypical activities” (Goodman & Williams 2007, p. 57). Another form of visual engagement includes providing a student with a mini-chalkboard or white board. Chalkboards and bulletin boards displaying important information are commonly used in classrooms. However, with such bulletin boards, there is usually an ample amount of information shown on them and they are usually at a distance from student seating. Therefore, it is hard for students with ASD to focus in on the important information when there are so much other visual stimuli being shown and it is so far

away. Providing these students with a small bulletin board with only the important information on it helps them to remain engaged in the lesson as they are better able to follow along. Another way that this can be modified is by highlighting the important points. Another activity that is hard for students with ASD to focus on due to distance is a read aloud. A good way to modify this activity would be to provide students with their own copy of the storybook or any other kind of material that is being used (Goodman & Williams 2007). When used with a story, students are able to follow along. This would be helpful for all students as well by improving their reading skills and tending to the visual learners as well.

A program that specifically highlights the use of visual supports in order to maximize the independence of a child with ASD is called the Treatment and Education of Autistic and Communication Related Handicapped Children, or TEACCH. This program is composed of physical structure and organization of work space, schedules specifying details about the demanded task, work systems portraying detailed expectations of the individual during the task, and task organization that thoroughly describes the learning task. Therefore, the TEACCH program requires the environment to meet the needs of a specific student. This program is used all the way through adulthood for those with ASD. It may help older student prepare for the workplace because their independence is maximized. Studies of the TEACCH program have shown increases in both fine and gross motor skills, functional independence, on-task, play, and imitation behaviors, as well as other functional living skills. (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011). This requires the environment to be changed to meet the needs of the student with ASD, rather than changing the student to meet the needs of the environment.

Students with ASD are usually lacking social skills and find social situations difficult, therefore:

it is important to acknowledge that the very nature of differences experienced by people with autism can make interacting with others in the community very difficult.

Impairments in social interaction, social communication and social imagination mean that people with autism find social situations and conventions difficult (Beadle-Brown, Roberts & Youell 2011, p. 46).

By knowing this crucial information about students with ASD, teachers can and should encourage students with ASD to be social and to act appropriately in various social situations. Those with ASD need extra support through this as they are usually impaired in the areas of verbal and nonverbal communication. Because of these impairments, they are often delayed in developing interpersonal relationships. Students with ASD are more content in participating in self-stimulatory behaviors rather than being social and engaging with others. However, they need to be taught how to interact with others and since, “successful inclusion requires the ability to socialize and participate in a variety of interactive tasks, these deficits must be addressed” (Goodman & Williams 2007, p. 58). There are several ways that this can be done. One way would be for the teacher to encourage this social engagement. They can do this by asking questions throughout their instruction and facilitate the responses through prompting. Providing choices is also a beneficial way to include students with ASD during social activities. By being given choices the student will know what their options are, without having to choose from too many objects. For instance, let the student with ASD choose which materials they would like to use during a project. Give them a choice of using a marker or pencil and poster or paper. It is also important that during peer interactions, teachers facilitate the interactions as it enhances the social engagement of the student with ASD as it has been found that this is most effective with

the student with ASD is actively engaged in choosing the activity and then having peers join in. (Goodman & Williams 2007).

Social stories can also be used with students with ASD in order to encourage positive socialization. Social stories provide a descriptive story in order to help children better understand certain social situations which will in turn prevent undesirable and inappropriate behaviors in those circumstances. There are ready made social stories, or a teacher can create their own that can be specific to the student and their situation. A situation that may require a social story may be school bus issues. For, if the child has had difficulty riding the school bus in the past, their teacher can create a more personalized story that explicitly informs the student of what to expect in the situation and how to act within the situation as well. (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011). The following guidelines should be followed when writing social stories for a student with ASD:

- (a) define a specific target behavior of concern, (b) identify an appropriate replacement behavior, (c) be written from the child's perspective, (d) include pictures or drawings to help the child relate to the desired behavior, and (e) include a ratio of one directive sentence for every two to five sentences that are either descriptive, perspective, or both (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011, p. 62).

These stories should provide an introduction, body, and conclusion as they are important elements. Social stories help increase prosocial behaviors as well as decrease maladaptive behaviors that are less socially acceptable. However, there is not extensive research on the effectiveness of the use of social stories, but has been considered a promising intervention for children with ASD. (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011).

For another way to help with the child with ASD in the area of social skills there is a model called the Developmental, Individual Differences, Relationship-Based model, also called the DIR model. The DIR model focuses on children with ASD in areas of their individual developmental needs. These include social-emotional functioning, communication skills, thinking and learning processes, motor skills, body awareness, and attention span. This model is most effective when it is implemented at a young age. (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011). An important element of this model is called Floortime. This is a type of intervention and a philosophy for interacting with other children and “aims to create opportunities for children to experience the critical developmental stages they are lacking through intensive play experiences” (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011, p. 60-61). This is aimed toward younger children from 2-5 years of age. It is where the parent or teacher gets on the floor with the child with ASD and plays with them in a way that challenges typical ASD behaviors and encourages appropriate and interactive play through parent or teacher directed modeling and prompting. (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011).

A Picture Exchange Communication System, or PECS is another way to promote the communication of students with ASD. PECS are especially helpful when used with children with ASD who are nonverbal or have limited communication skills. Through the exchange of tactile symbols and objects, children learn how to communicate their needs and wants. Various symbols may include photographs, pictures of objects, or other objects that the child with ASD is taught to associate with a desirable toy, person, or activity. (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011). Within the phases of PECS, a child learns to “request an item or activity by giving corresponding picture, symbol, or object to his/her partner, generalize the activity by bringing the request symbol to the partner who may be located in different areas of the room, and

discriminate between two different request symbols before bringing it to a partner” (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011, p. 61). There are different tiers within the PECS program depending on the level of the student. As the student moves from one tier to the next, there are more symbols to discriminate from and there is more complex language used for communication. Symbols are created that are significant and personal to the child so that what the child is requesting will be accurately depicted. As the child graduates through the tiers, he or she will require less prompting from the teacher and will be able to apply these skills to their daily life. (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011)

Another way to keep students with ASD engaged is to do so with the use of physical interventions. Because students with ASD often exhibit stereotypical behaviors that involve moving their hands or bodies, their being included is negatively affected due to lack of engagement. One way to physically engage students with ASD is to give them a tangible object to hold. This is said to reduce those stereotypical behaviors. These students should also be given opportunities to move around in the classroom. If the student needs this movement, place it in their schedule so that they see that they are supposed to do this and certain times. When students with ASD are given such opportunities, they are less likely to become withdrawn during longer sitting and listening activities. (Goodman & Williams 2007).

Many of the strategies above are specific ideas and interventions for educators in order help to improve the behaviors of students with ASD in order to fully be able to include these students. There are also specific behavioral interventions that have been created in order to do so as well. One of these well studied interventions is Applied Behavior Analysis, or ABA, which is an educational practice that:

involves the process of systematically applying interventions based upon empirically derived principles of behavior to improve socially meaningful behaviors, and to demonstrate that the interventions employed are responsible for the improvement in behavior (Mace, Perry, Longenecker & Steege 2007, p. 92).

ABA methods support those with ASD in several ways. These include teaching new skills such as functional life, communication or social skills, reinforce and maintain previously acquired skills, generalize behavior from one situation to another, such as transferring social skills to natural settings, reduce interfering behaviors by reinforcing replacement behaviors, and restrict conditions where those interfering behaviors occur. In the process of ABA, there is an assessment in order to choose the correct type of intervention to use for each specific child. Within this assessment, unique behaviors, needs, and characteristics are identified, the environment is evaluated, and a description of the complex interactions between the student and his or her environment is written up. From this first assessment, an individualized intervention plan and procedure is put in place. Interventions include treatments, instructional procedures and therapies that may be implemented in order to improve the students' behavior depending on the findings of the assessment. All the interventions used have been empirically proven to be effective with this population of students and have been proven to produce meaningful behavior change that is not the result of extraneous or unrelated variables. (Mace, Perry, Longenecker & Steege 2007). At the beginning of the intervention, intense one-on-one instruction is recommended and parent participation is highly important in order to maintain consistency the student is able to generalize behaviors across environments. The goal with these interventions is replacing the old behavior with the new behavior and the new behavior becomes more automatic. (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011, p. 60). While the interventions are

being given, more assessments are conducted in order to monitor student progress. Applied Behavior Analysis treatment is an “...ever-changing process that will need constant reconsideration of the behaviors being taught, the goals of instruction, and the teaching methods and interventions for interfering behaviors” (Mace, Perry, Longenecker & Steege 2007, p. 98). O. Ivar Lovaas, the founder of ABA, that 50 percent of children with ASD treated with ABA before the age of four showed significant increases in IQ, verbal ability, and social functioning. Therefore, when implemented at an early age, the result can be long term, positive outcomes. (Hughes, Katsiyannis, McDaniel, Ryan & Sprinkle 2011).

While all of the above ideas would be extremely beneficial to those with ASD, funding sometimes gets in the way of the schools ability to implement some of them as “the financial constraints of many educational systems often limit the breadth and depth of the service that children are able to receive” (Irvine & Lynch 2009, p. 853). For instance, in order to create PECS the school must pay for a software to do so and training can be costly due to the resources needed. Educators may have to work for and request certain disability-specific supports, but it will be worth it to try your hardest in order to receive the materials needed to really be able to effectively educate students with ASD.

Overall, it is up to the educators to include students with ASD. By implementing the empirically supported strategies and models discussed, students with ASD can learn in an inclusive setting. While this is a challenge, the result is worth it. I conclude with these thoughts:

We, as teachers, need to develop the capacity to imagine things differently...Imagine an educational system that recognized that to treat people equally we have to treat them differently, not the same...Imagine if we allowed people to develop their talents rather than concentrating on their difficulties...Imagine if we were able to exclude fear from

school, rather than excluding children. Imagine that we really valued difference and cared about enabling people to be the best they could become and did not place such a high value on conformity... Wouldn't such a system be one in which all could flourish?

Understanding and getting it right for children with ASD can be a way of getting it right for everyone (Jordan 2008, p. 13-14).

This is a philosophy teachers should live by. By changing your teaching to meet the needs of your students, you are creating an environment where all students can learn. By believing in each student, no matter what their ability may be, the more successful each student will be.

Methodology

Participants

Twenty elementary and middle school teachers participated in this research. Participants were selected because they currently teach in the field of special or general education at the elementary or middle school level. By choosing both general and special education teachers, a difference in opinion or strategies used may be found.

Setting

Five different school districts in the Rochester area participated in the research. These school districts were Rochester City School District, Penfield Central School District, Brighton Central School District, Greece Central School District and Pittsford Central School District.

Rochester City School District participating schools included Martin B. Anderson School #1, Dr. Martin Luther King Jr. Elementary School #9, Pinnacle School #5, Abelard Reynolds School #42, Dr. Charles T. Lunsford School # 19, and Clara Barton School #2. Each school had one response.

Penfield Central School District participating schools were Harris Hill Elementary and Bay Trail Middle School. Each school in the Penfield Central School had one response.

The only participating school in the Brighton Central School District was French Road Elementary with three survey responses.

The participating school in the Greece Central School District was Parkland Elementary with one response.

Participating schools in the Pittsford Central School District were Park Road Elementary with three responses, Barker Road Middle School with two responses, and Calkins Road Middle School with two responses.

Procedure

Respondents participated anonymously through a survey conducted online through Survey Monkey. Surveys were distributed to five different school districts and 20 teachers opted to respond. The survey consisted of ten questions. Seven of which were open-ended questions and participants responded in writing. All participants were informed that their responses would remain completely anonymous via e-mail.

Results

Question: Are you a teacher in an inclusive classroom? If so, how many years of experience do you have in that setting?

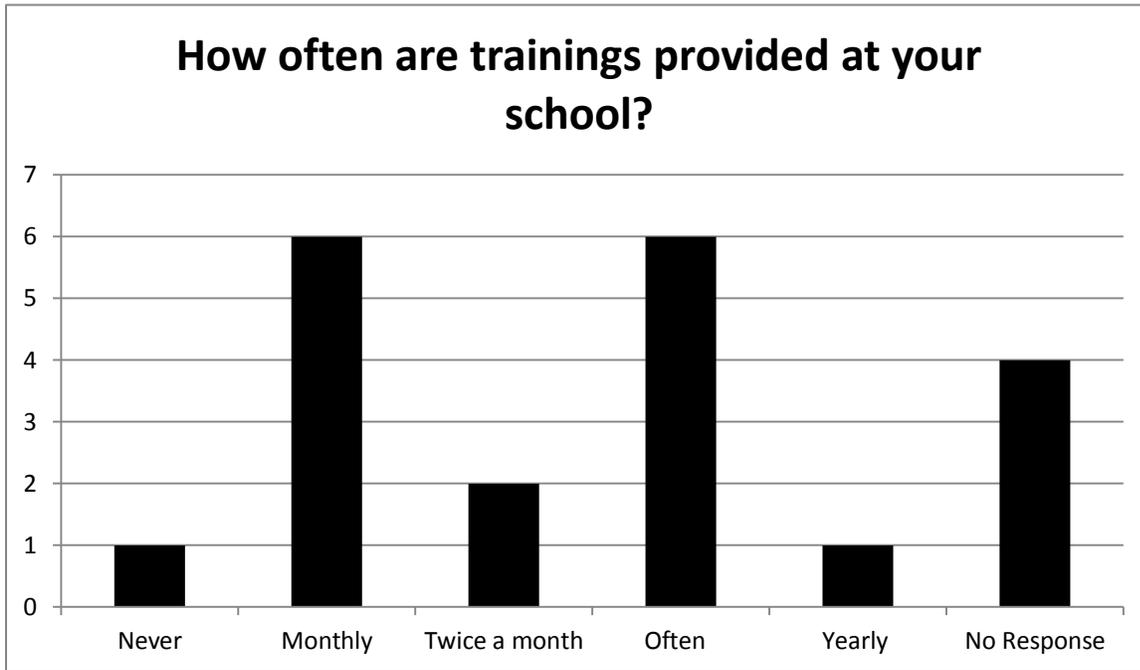
Thirteen teachers signified that they are a teacher in an inclusive classroom. Teachers experience in that classroom setting range from 10 months to 20 years of experience. Four teachers responded no and 3 did not signify whether they are a teacher in an inclusive classroom.

Question: Are you the general or special education teacher?

Six respondents were special education teachers, eleven were general education teachers, and one was an English as a Second Oral Language, (ESOL), teacher. One response had to be thrown out due to an incorrect answer and one participant did not answer the question.

Question: Does your school provide regular trainings for professional development? If so, how often?

All participants responded to this question. One responded no and nineteen responded yes.



For the second part of the question, four did not respond. The one that said they do not receive training was placed in the “never” category.

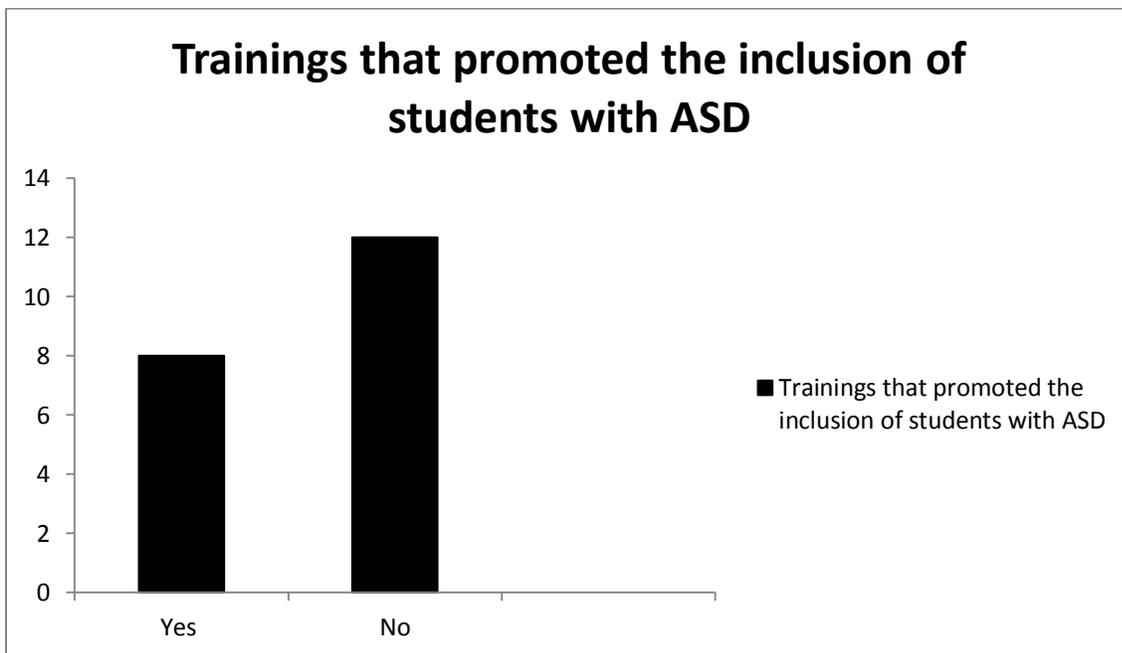
Question: What training have you received?

All participants answered this question. No participants answered that they have received Autism specific training. 8 responded with a training that specifically pertains to special education such as Response to Intervention and co-teaching training. 4 participants were not specific in describing their trainings and 8 responded with trainings that do not pertain to special education.

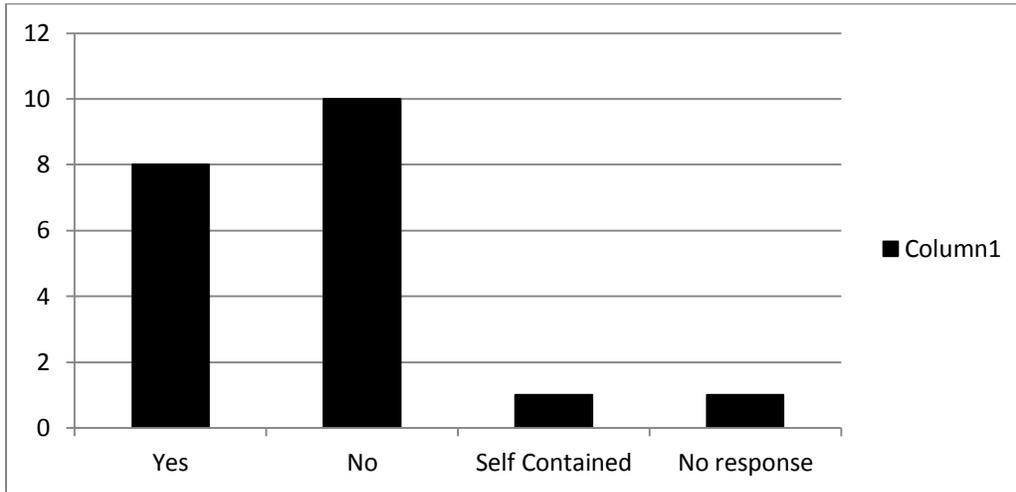
Question: What types of training have you provided?

1 participant responded that they have provided a presentation on Autism. 5 respondents have not provided any training. 5 have provided training in a different area in special education and 8 provided other trainings. 1 person did not respond.

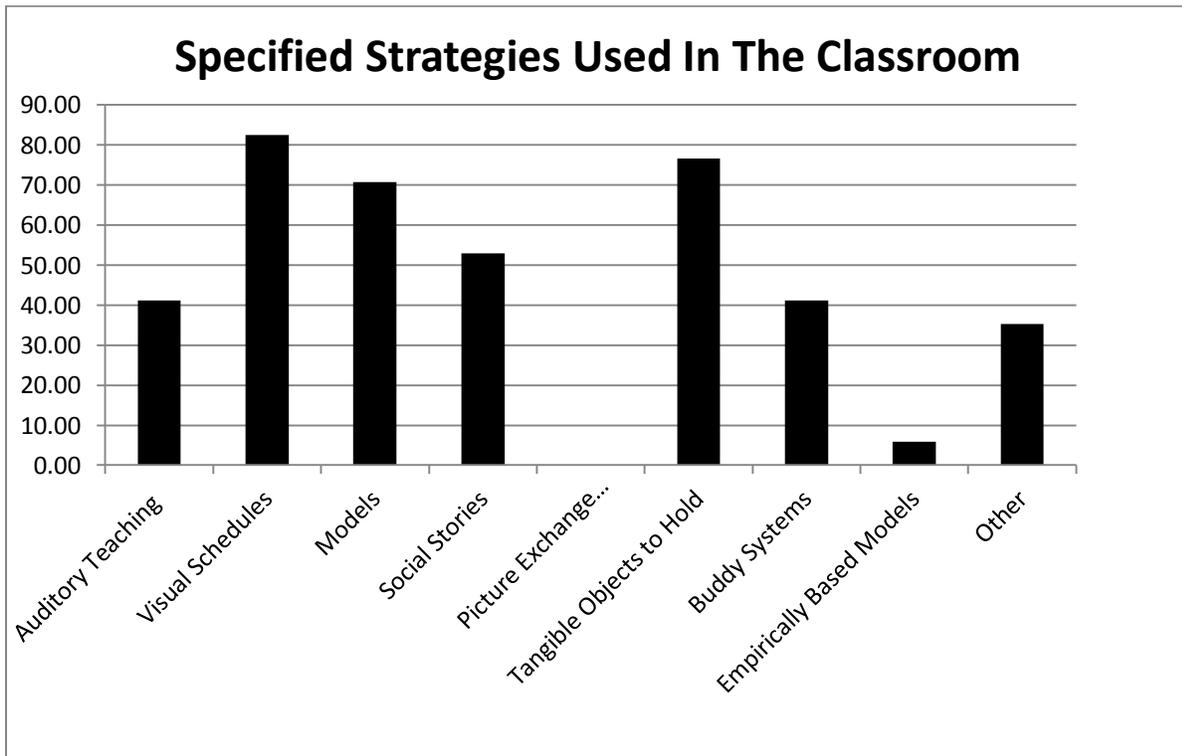
Question: Have you had trainings that promote the inclusion of students with disabilities geared specifically toward children with Autism Spectrum Disorders?



Question: Do you teach an inclusive classroom where there is a student with ASD present?



Question: Please choose the strategies used in your classroom.



Question: Which strategies do you find to be most effective? Least? Please feel free to list strategies not listed above.

Six participants did not respond.

Response: All are effective and necessary. However, we do not use a traditional Floortime into our play experiences. At times, the tangible objects have caused difficulties so we usually allow students to hold one until everyone has transitioned and then had it to the closest adult. That has been more successful.

Response: Buddy system seemed to be the most effective.

Response: Role playing, songs and rhymes, manipulatives.

Response: In the past, social stories and buddy systems. Visual schedule and tangible objects too.

Response: Wait time/processing time. Weighted vest, t-chair manipulatives to maintain focus during instruction. Clear, concise instructions and expectations. Repetition.

Response: Most effective strategies include proximity to teacher due to issues of attention, written and visual schedule, agenda previewed and reviewed, adult support to encourage, redirect, model, and assist with task completion and social interactions, prompts/cues to facilitate pragmatics, speaking, and listening, consistent, predictable behavior strategies with clear expectations and consequences, graphic organizers for structuring writing assignments, use of assistive technology during writing instruction and writing activities, use of fidgets and other sensory tools.

Response: One on one, re-teaching and rephrasing directions, peer modeling, student repeating instruction and directions.

Response: Rapport building with flexible schedule to allow for breaks when needed.

Response: 1:1 paraprofessional to work with the student during transitions and keep them organized.

Response: Taking the time to engage all students through dialogue and promoting an environment where all students are expected to contribute.

Response: Think-pair-share, learning and movement, infinity loop, multi-sensory/multimodal approach, multiple intelligences, many opportunities for collaborative work, both partner and small group, small group instruction, whole group mini-lessons at the start of most readers and writers workshops.

Response: Weekly and monthly calendars to let kids know what will be happening in school. This is for tests, quizzes, after school review, games group, etc.

Response: Visuals seem to be the most effective

Response: Visuals, demonstrations, and peer teaching are most effective.

Discussion:

The majority of participants stated they have trainings provided at their school. Whether it is yearly, monthly, twice monthly, or often, there are trainings. However, no respondent claimed they have had trainings that specifically pertained to Autism. One participant has provided training on Autism, so that shows that there are at least trainings out there on the topic. Although, they are not as common as they ought to be.

Thirteen of the surveyed teachers currently teach in an inclusive classroom and eight of those teachers have a student in their classroom that falls under the category of Autism Spectrum Disorders. With these numbers, there should be a great deal of teachers that are well trained on the disorder.

Another finding was that the numbers were close for the questions regarding whether teachers have had trainings promoting the inclusion of student with ASD and whether they have a student with ASD present. Eight answered yes to both questions and the response for no was close as well. When those were looked at more closely, it was found that six of the eight teachers that have students with ASD have been trained on the disorder and two also have consultant time with an autism specialist, while eight of the twelve teachers that do not have a student with ASD in their classroom have also not had training. This is a commonality that may point to the finding that teachers with a student with ASD in their classroom are more likely to be trained on the topic.

When it comes to specific strategies used in the classroom, there are a variety of strategies being used in the participant's classrooms. However, one strategy that not one participant claimed to use in their classroom are Picture Exchange Communication Systems,

(PECS). Since students with ASD are very visual, these are great tools to use to help remind students what they should be doing or helping them to understand a reading or assignment.

Many teachers find many different strategies to be the most effective. Visuals seem to be the most common however, everyone has their own techniques and strategies may work better for some than others. It all depends on how they are used in the classroom.

Conclusion

It is important that all educators are well informed on Autism Spectrum Disorders. It is clear from that study that there is not enough training on the disorder. Hopefully it will eventually become realized that training on the disorder is highly important. Teachers need to fully understand how to educate students with ASD. Students with ASD can be successful when the right strategies are used to support them.

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Appendix A

Professional Development Survey

1. Name of School:
2. Are you or have you been a teacher in an inclusive classroom? If so, how many years of experience do you have in that setting?
3. Are you the general or special education teacher?
4. Does your school provide regular trainings for professional development? If so, how often?
5. What training have you received?
6. What types of training have you provided?
7. Have you had trainings that promote the inclusion of students with disabilities geared specifically toward children with Autism Spectrum Disorders? Please describe.
8. Do you teach an inclusive classroom where there is a student with ASD present?
9. Please choose the strategies you use in your classroom
 - Auditory teaching (ex. Using songs during transitions)
 - Visual schedules
 - Models (visuals depicting expected usage of center or game)
 - Social stories
 - Picture Exchange Communication Systems (PECS)
 - Tangible objects to hold during instruction
 - Buddy systems
 - Empirically based model (DIR, Floortime)
 - Other

10. Which strategies do you find to be most effective? Least? Please feel free to list strategies not listed above.