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Autism spectrum disorder : characteristics seen with ASD and interventions used in and outside the inclusion classroom

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Autism spectrum disorder : characteristics seen with ASD and interventions used in and outside the inclusion classroom

Abstract

The number of children in our country diagnosed with an Autism Spectrum Disorder (ASD) is sharply increasing and does not seem to be slowing down in the near future. It is becoming increasingly more common to see schools implementing inclusion classrooms. These programs range from partial inclusion, where children with special needs spend various numbers of hours in a general education classroom each day, to full-inclusion classrooms. Still others use reverse inclusion, which entails general education students coming into a more self-contained special education classroom for part of the school day.

It is critical that general education teachers learn how to meet their students' needs and appropriately adapt their curriculum and classroom management to create a successful learning environment for all students, including those with ASD that will likely be part of their class.

**Autism Spectrum Disorder: Characteristics Seen with ASD and Interventions Used
In and Outside the Inclusion Classroom**

Submitted

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Education

Educational Psychology: Professional Development for Teachers

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Chapter One

Introduction

The child playing alone in a corner of the classroom, another child fixated on stacking blocks just right, or the child completely dependent on a picture schedule that must be followed have all become a common sight in American classrooms. The number of children in our country diagnosed with an Autism Spectrum Disorder (ASD) is sharply increasing and does not seem to be slowing down in the near future. Autism Spectrum Disorder is the general term for three types of disorders: Autism Disorder, Asperger Syndrome, and Pervasive Development Disorder. Common symptoms seen in children diagnosed with ASD are communication and social problems, a strong need to follow a routine and/or using repetitive actions or words.

American schools are currently using a wide variety of formats in their special education programs. Some continue with more traditional self-contained classrooms that may or may not be geared toward specific special education needs. However, it is becoming increasingly more common to see schools implementing inclusion classrooms. These programs range from partial inclusion, where children with special needs spend various numbers of hours in a general education classroom each day, to full-inclusion classrooms. Still others use reverse inclusion, which entails general education students coming into a more self-contained special education classroom for part of the school day.

A great deal of research is being done to determine which of these environments is best for students.

All students have individual needs, and that is most definitely true for students with special education needs. When specifically looking at children with ASD, they fall along a very large spectrum that ranges from highly functional to very severe needs. Therefore, each child's needs have to be assessed to determine what type of program will best help them learn and grow. That being said, there is a lot of current research examining what types of programs and interventions best help students with ASD. That research needs to be reviewed by teachers and administrators and the effective programs and interventions need to be utilized in inclusive classrooms.

More and more children are being diagnosed with ASD which has in turn caused a large increase in the number of students needing special services in schools. Teachers in the early grades are also seeing signs of ASD in many children who have yet to be diagnosed. It is critical that general education teachers learn how to meet their students' needs and appropriately adapt their curriculum and classroom management to create a successful learning environment for all students, including those with ASD that will likely be part of their class.

Research Questions

The number of children diagnosed with ASD is growing at a rapid pace. This is impacting the lives of parents, families, and educators across the globe. Educators must find the most effective ways to teach these students and help them develop to the best of their ability. They must also take into account the trend of inclusion classrooms being seen in American schools. These issues have led to the following research questions

which will be the focus of this paper: What are the characteristics and behaviors seen in children with Autism Spectrum Disorder? What interventions best help children with Autism Spectrum Disorder develop socially and cognitively? What interventions can teachers use to foster a successful learning environment for children with Autism Spectrum Disorder in an inclusion classroom?

Significance of the Problem

As stated earlier, more children are being identified as having ASD and these children are being included in general education classrooms. This means a very large majority of teachers are likely to have students in their classrooms with ASD. They need to understand the characteristics and behaviors associated with this disorder and how to best meet these students' needs. This includes being aware of the latest research findings and knowing what recommendations the research provides about possible interventions designed to help students with ASD.

Another aspect of this problem is learning how to balance instruction for both children with and without special needs. A tremendous benefit of inclusion classrooms is the acceptance and tolerance children learn for one another and their unique differences. It is the role of the teacher to foster this acceptance for diversity while also meeting the needs of each student in the classroom. Research on current practices and interventions should be analyzed to see what is best practice and how to best help all students learn appropriate social skills and meet their academic expectations.

Definition of Terms

Autism Spectrum Disorder: A developmental disorder generally appearing in children before the age of three. Children show a range of behaviors that affect their

communication skills and ability to interact with others.

Autism Disorder: A disorder under the umbrella of Autism Spectrum Disorder.

“Classic” autism generally includes symptoms seen in ASD along with difficulty learning and language delays.

Asperger’s Syndrome: This syndrome falls along the autism spectrum at the milder end.

Children exhibit behaviors of poor communication and social skills.

Pervasive Development Disorder: Developmental delays in language and communication skills are seen with this disorder. Other common autism symptoms may also be seen in people with PDD.

Inclusion Classroom: A classroom that includes both general education and special education students. Special education students can be included for a short amount of time to full inclusion.

Organization of the Paper

This paper contains five chapters. Chapter one includes a brief description of Autism Spectrum Disorder and how it impacts children and teachers in the school setting. It also reviews current practices in special education in American schools. Research questions are stated to address these issues and a rationale for the significance of each problem is given. Chapters two and three review literature on ASD and what interventions have been successful with these students in inclusion classrooms. Chapter four discusses what interpretations can be made from the literature. And finally, chapter five looks at how teachers can utilize the information gained from the literature with students with ASD and in inclusion classrooms.

Chapter Two

Introduction

Before beginning to look at what interventions work with students inside and outside of the classroom, it is initially important to know what characteristics are seen in children with ASD. Teachers look at each student as an individual with unique personality traits and skills, but there must be characteristics that stand out in children with ASD. Is there a set of traits to look for and identify? What are the commonalities among students with this disorder? As mentioned in the previous chapter, there is a range of disorders within ASD. How do the characteristics vary between disorders? Once the symptoms have been identified and a child has been diagnosed with an ASD, how can that child be helped? What interventions best help children develop as close to their typical peers as possible? All of these questions are addressed in this chapter. It builds a foundation of what ASD is and describes several interventions used with children who have ASD.

Literature Review

Three pieces of literature were analyzed to determine what common characteristics are seen in children with ASD. The first piece is an interview with Steven Shore by Mary T. Brownell and Chriss Walther-Thomas (2001). At the time of the interview, Shore was a doctoral student at Boston University studying the area of special education, specifically the autism spectrum. Interestingly, Shore was also diagnosed with

autism at the age of two-and-a-half-years-old. He describes the onset of autism as the “autism bomb”. Children tend to develop normally as infants and then their development suddenly stops and may even regress. They have difficulty with language, often times developing stronger receptive language than expressive language. Children with autism also have extreme difficulty appropriately interacting in their environment. Shore goes on to describe the tendency for individuals to perseverate on objects or intellectual ideas, take everything literally, and have sensory needs greater than their peers. Shore makes it clear that these characteristics vary among children and are seen at varying intensities in every child.

This article displays a diagram showing how similar and dissimilar children are at the opposite ends of ASD. The most severe children show stereotypical behaviors like isolation, no communication, higher frequency of tantrums, and possible self-abusive behavior. At the opposite end, children diagnosed with High Functioning Autism and Asperger’s Syndrome show only a small number of these characteristics or in much milder forms. Children fall between these two extremes and their characteristics can change based on the interventions they receive.

As stated by the American Psychiatric Association in *Autism Spectrum Disorders*, “Autism is a neurodevelopmental syndrome that is defined by deficits in social reciprocity and communication, and by unusual restricted, repetitive behaviors” (Lord, Cook, Leventhal, & Amaral, 2000, p. 355). As Shore described in his interview, Lord, et al. agree that children with ASD do not develop typical social and language skills. They state examples of young children often playing without seeking to show others their happiness, objects they may be interested in or calling out their parents’ names. While

the other pieces of literature did not give a specific time frame, Lord, et al. describe autistic characteristics usually beginning during infancy, and no later than three-years-old. Again, it is stressed that no two children with autism are completely alike and their “disorders vary in pervasiveness, severity, and onset” (Lord, et al, 2000, p. 355).

Finally, the journal article *Verbal Expression and Comprehension Deficits in Young Children with Autism* (2005) takes a closer look at children’s verbal skills and ability to comprehend spoken language. The authors of this study assessed forty-six children ages five and six. Twenty-seven were typically developing and nineteen had autism. Results from three assessments supported the characteristics described in the two previous pieces of literature. Students with autism scored lower than their typical peers in the area of nonverbal intelligence. As would be expected, they also scored lower in verbal production. The authors of this study confidently state that language delays can be seen in children with autism as young as five- and six-years-old. However, it has been mentioned earlier that these characteristics can be seen even earlier.

Based on the articles reviewed, very similar characteristics were found among children with ASD. Similarities and agreement among professionals on how to best treat these children is harder to find. Three more articles were reviewed to see what interventions are being used to help children with ASD and what successes can be found with each intervention.

Reed, Osborne, and Corness (2007) evaluated the effectiveness of three types of interventions used with children who have ASD. They include Applied Behavior Analysis (ABA), special nursery placements, and portage. ABA Therapy focuses on developing cognitive, linguistic, social, and self-help skills through one-on-one teaching.

The therapy in this study was conducted at home. Special nursery placement involves the autistic child participating in a small group school setting. The teacher works with students on learning, sharing attention, motivation, and participation. Lastly, portage is a home-based program that involves parents working with their child on developing joint attention and shared attention skills. This study included forty-eight participants, all along the spectrum of ASD, who received interventions in the community as opposed to a clinical setting. Five measures were used in this study prior to beginning the interventions and following the nine months of intervention.

The authors found little change in the severity of autistic symptoms among the participants. However, the children who received ABA therapy showed small positive growth in their educational and intellectual functioning. Children in the special nursery program showed improved adaptive behavior functioning. The authors hypothesized that combining these two treatments may have the strongest positive impact on children with ASD.

Another study, by Wong, Kasari, Freeman, and Paparella (2007), looked at how two types of naturalistic instruction could improve autistic children's ability to use symbolic play and develop the skill of joint attention when playing with a peer. Forty-one autistic preschoolers participated in this study and were involved in an early intervention preschool at the time of this study. The children received two types of intervention. The Naturalistic I setting took place at a table and each skill was drilled repetitively. The same students also participated in the Naturalistic II setting. This intervention took place on the floor and was a more "natural" environment.

Results from this study showed that children learned the skills of symbolic play and joint attention with peers in both settings. However, they learned them faster in the Naturalistic I setting and learned the skill of symbolic play faster than the skill of joint attention. When looking at how the intervention worked with children along the spectrum of autism, higher functioning children were more successful than their more severe peers in the Naturalistic I setting, but no difference was seen in the Naturalistic II setting. Lastly, Wong, Kasari, Freeman, and Paparella explained that both interventions were used on all of the participants, so it is unclear how well these two interventions would work independently.

Relationship-Focused (RF) intervention is the final intervention looked at in this chapter. This approach uses parents' responsive interactions to encourage growth in their autistic child's development. The authors of this study found at least thirteen previous studies that suggested RF can improve children's language and cognitive functioning. When analyzing the data from this specific study, the authors found that mothers increased their responsiveness to their child by 80%. Their children showed an average growth of 50% in the areas of attention, persistence, interest, cooperation, initiation, joint attention, and affect. As in the previous RF studies, significant improvements were seen in children's social-emotional development. However, the authors warn against generalizing their findings as participants were not representative of the entire population. Further research needs to be conducted to determine how successful it could be with all ASD children.

Summary

The review of these six pieces of literature describes the common characteristics that can be found among children with ASD. However, it is very clear that children fall along a wide spectrum of autism disorders and have unique sets of characteristics that can change with various interventions. The interventions described had differing degrees of success. Thus, it would be safe to say these interventions certainly work differently with different children. ASD is a complex disorder that still has many unknown facets. However, with an ever increasing population of children being diagnosed with ASD it is critical to look at how to best help meet the needs of these children. We've addressed what interventions families can use at an early age, but what happens when they go to school? It is also critical to know how to best help them succeed in a classroom. This topic is what we turn to next.

Chapter Three

Introduction

‘What interventions can teachers use to foster a successful learning environment for children with Autism Spectrum Disorder in an inclusion classroom?’ This chapter looks at literature that addresses the third and final research question. Four articles were reviewed to help answer, The authors of the first three articles conducted research to determine if their specific interventions helped children with ASD make progress in an inclusive classroom environment. The authors looked at interventions to help develop social skills, peer interaction, and improve behaviors in the classroom. Their processes and outcomes will be described in the first part of this chapter. A fourth article described previous research that supports a wide variety of interventions that have shown positive results when used with ASD students in an inclusion classroom. The author discussed practical and effective interventions that general education teachers can and should use with ASD students. This chapter contains vital information for understanding what tools to use with autistic students and how to best help them when they are included in general education classrooms.

Literature Review

In *Teaching Social Interaction Skills in the Integrated Preschool: An Examination of Naturalistic Tactics*, Kohler, Anthony, Steighner, and Hoyson (2001) looked at three behaviors. They studied students’ social interaction, other active behavior, and passive

responding. Four autistic children who were enrolled in a half-day integrated preschool program participated in this study. The authors looked at the impact naturalistic teaching had on the students' social behavior, how well the teachers implemented the naturalistic teaching, and how much the students retained after the teaching.

What is naturalistic teaching? This type of intervention requires teachers and aides to be trained on strategies to use with autistic students during their playtime to help promote social growth. The teacher sat down and interacted with the autistic child for 10 minutes of a 40-minute playtime each day. She used strategies to engage the student in social activities with her and with other students. Those strategies included using novel materials, the teacher joining in the activity, inviting the child to make choices, using incidental strategies to disrupt the student's expectations, making comments or asking questions, requiring the student to expand his speaking, and inviting the student to interact with his peers.

The results from this study varied, however all students showed growth in their social skills. It should be noted that while there wasn't a large increase in the students' skills, growth was seen without the teachers directly prompting any of the students. The authors also looked at how well the students maintained the skills they learned during the intervention. The teachers were able to decrease their prompts and the students continued to use their new social skills. Data indicated that three of the four students maintained at least some of the social skills 100% of the time. The teachers received a great deal of assistance while teaching this approach to their students and found it difficult to learn. However, all four teachers were able to use this intervention once they fully learned how

to teach with this approach. This intervention appeared to be challenging to use in the classroom, but showed positive results with the four autistic students.

Kohler, along with Greteman, Raschke, and Highnam, conducted another study on the social interactions of an autistic student and her general education peers. This article, titled *Using a Buddy Skills Package to Increase the Social Interactions Between a Preschooler With Autism and Her Peers* (2007), looked at how an autistic student improved her social skills when taught by her peers. The participants included one preschooler with autism and six preschool classmates with typical development. The students were in a half-day inclusive preschool setting and the autistic student was in both the morning and afternoon sessions.

The six normally developing peers were divided into three groups and the autistic student worked with each of the pairs. The Buddy Skills Package included three skills to work on: stay, play, and talk. Each of those skills were taught in three steps. First, the teacher introduced and modeled the specific skill to all three students in each group. Next, the two typically developing students practiced the skill together. Finally, the peers practiced the skill with the autistic student. The teacher gave the students prompt cards with pictures that cued them on what to do for each skill.

Prior to implementing the Buddy Skills intervention, both the autistic student and the typically developing peers had very little social interaction with one another. After the implementation, results for both groups showed a large increase. The peers used social interactions 37-41% of the time. The autistic student increased to 5-14% use of social interactions depending on which group of peers she was with. Another positive outcome of this intervention was that all of the students maintained and some increased

their social interactions during the maintenance portion of this study. These results show strong support for using the Buddy Skills Package intervention in an inclusive classroom.

A third article by Blair, Umbreit, Dunlap, and Jung, *Promoting Inclusion and Peer Participation through Assessment-Based Interventions* (2007), looked at the challenging behavior displayed by a child with autism and how to improve his behaviors through assessment-based intervention. The authors state,

“Challenging behaviors present the single biggest obstacle to including young children with disabilities in typical early education programs (Conroy, Dunlap, Clarke, & Alter, 2005). If challenging behaviors are not reduced and replaced with more appropriate behaviors, students who display them are likely to be removed from an inclusive class and placed in a more restrictive environment. (Carta et al., 1994; Palfrey, Singer, Walker, & Butler, 1987)” (Blair, Umbreit, Dunlap, & Jung, 2007, p. 134).

The authors examined one kindergarten student who was diagnosed with autism and mental retardation. He was in a public kindergarten classroom in South Korea with 22 typically developing peers and two other students with disabilities who were included for a minimal amount of time each day. Prior to the intervention, the autistic student had little meaningful participation with his peers because of limited skills and constant behavior challenges. These included crying, vocalizing, lying down on the floor, screaming, hitting objects against the floor, and jumping. He was also known to hit, bite, pinch, and scratch his peers.

The intervention began by conducting a Functional Behavior Assessment (FBA). This was followed by interviews with the student’s mother, general education staff, and special education staff. Next, structured observations took place. The researchers collected A-B-C data. This involved looking at the antecedent conditions before the problem, what behaviors the student exhibited, and what consequences followed the inappropriate behavior. After collecting all of this data, the researchers hypothesized the

student would, “engage in low levels of challenging behavior during group activities when (a) activities incorporate his preference or interests, (b) instruction is provided for a replacement skill, and (c) the group size is reduced” (Blair, Umbreit, Dunlap, & Jung, 2007, p. 138).

As predicted, the student showed the smallest amount of challenging behavior when all three accommodations were made. The teachers provided choice for the student during playtime and group instruction. They also incorporated the student’s interests into the instruction and play areas. Once his behaviors were under better control, the researchers set a goal to work on increasing the autistic student’s interaction with his peers and increase his involvement in the classroom. To do this, they again gave him choice in his playtime activities, reduced the number of students who could play in his group, and used peer modeling to teach the child how to play in each area.

This student was also taught replacement skills when he wanted the teacher’s attention. He learned to use communication cards to gain attention, seek help, and initiate play with a teacher. The teacher ignored challenging behavior and gave him a 3-minute break after 10 minutes of positive behavior. After implementing all of these interventions, the autistic student only showed a small amount of challenging behavior and continued to maintain his progress after the intervention. His teacher also found these interventions to be feasible in the classroom. This data showed support for implementing assessment-based interventions within the inclusion classroom.

Interventions for Increasing the Academic Engagement of Students with Autism Spectrum Disorders in Inclusive Classrooms (2007) was the fourth and final article reviewed for this chapter. It combined research conducted by others and looked at a wide

variety of interventions that have been successful with autistic children in inclusion classrooms. Goodman and Williams open their article by stating why it is important for all teachers to know successful interventions to use with autistic children. They state,

“The increased numbers of students with ASD that educators encounter in mainstream settings result not only from legal and empirical support for this placement option but also from increases in the incidence of this disorder. The Centers for Disease Control and Prevention (2006) reported that the occurrence of autism has increased from 2 to 6 children per 1000. Between 1994 and 2003, the number of students receiving special education services with an autism diagnosis increased six-fold” (Goodman & Williams, 2007, p. 53).

Goodman and Williams focused on four areas that can help autistic children.

Interventions can be implemented in the areas of auditory engagement, visual engagement, social engagement, and physical engagement.

The authors described the difficulties many autistic children have hearing verbal cues, especially in the large group setting. To help with this, they suggest using focus cues like rhythmically clapping your hands or ringing a bell to gain the students’ attention. Autistic students can also have a hard time transitioning from activity to activity. It is suggested to use a song to cue the students to move. It is important that the same song is always used for the same transition. Songs can also be used throughout lessons to refocus autistic children. An example of this would be to sing the days of the week during calendar time. All of these suggestions can be tried to help autistic children with auditory engagement.

Using visual interventions has been shown to increase autistic students’ levels of appropriate academic and social behavior (Goodman & Williams, 2007). Goodman and Williams encourage teachers to use visual schedules to provide routine and show the students what comes next in their day. The schedule has pictures in the order of each

activity the students are expected to do. Once each activity is completed, they remove that picture and can see what they must do next. Visual schedules can also be used to show a student what choices he or she may pick from during playtime or another activity time. The ultimate goal of these schedules is to develop the student's independence. Picture models can also be used to show a student what he or she is expected to do or to extend his or her options during an activity. For example, pictures of various building models can be placed in the block center. Another visual intervention is giving autistic students their own copies of books or bulletin board models so they can follow along with their own personal set of materials. Finally, the teacher can highlight the most important information shared to limit what a student may see on an overhead or whiteboard.

The area of social engagement can be particularly difficult for students with autism. One intervention to try is requiring the student to respond. Ask frequent questions to engage the student in conversation or the lesson. You can also have the class respond in group response or use choral readings to engage autistic students. Choice can also be implemented in this area. Again, giving choice during playtime or allowing the student to choose materials will decrease challenging behavior and lead to more social interaction with the teacher and peers. The student can also choose an activity and then peers can join that activity.

The last area the authors investigated was physical engagement. Students with autism often use repetitive movement of their hands or entire body. To help reduce this, Goodman and Williams suggest giving the student an object to hold. However, this can sometimes be more of a distraction so consider and monitor how well it works for each

student. Incorporating movement into lessons can also be beneficial for autistic students. They can be the “teacher’s helper” and move about the classroom. Imitation activities with songs or books are also very good for autistic children. All of these interventions can be used to help provide physical movement for autistic students and help maintain their focus on instruction.

Summary

The authors of the articles reviewed looked at the social, academic, and behavioral needs of students with ASD. They conducted or analyzed research to determine what best practices for these students are and how to implement them in an inclusive classroom. Autism is on the rise and more and more of these students are receiving special education services. With IDEA in place, these children are also being included more frequently in general education classrooms. Teachers need to have a variety of interventions to try with students and figure out how to best help the autistic children be as involved as possible in their classroom community. Just as every child who walks through a classroom door is different, every child with ASD is different. Some of these interventions will work well for some students and others will need to be adapted or not used at all. It should also be mentioned that many of these interventions and strategies can benefit every child in the classroom. An analysis of these pieces of literature give teachers a foundation of possible interventions to use in their classrooms with autistic students that will most likely walk through their doors in the very near future.

Chapter Four

Introduction

When reviewing the literature on ASD, I specifically looked at resources that would better help me understand the characteristics of autism and varying levels of the autism spectrum. I then wanted to know what interventions work with these children, specifically, interventions that are best to use with children with ASD in a classroom setting. As the previous two chapters described there are many findings about children with ASD, and some findings are agreed upon by researchers but more research needs to be conducted on the areas that lack consensus among researchers. One conclusion from the literature is that autism is an area of study that is being looked at and researched at a very high rate. The number of articles and research studies published and continue to be published on ASD is overwhelming. Below is my interpretation of the literature I previously described and what conclusions I drew from them.

Interpretation

As Lord, Cook, Leventhal, and Amaral (2000) site in their article, autism is a neurodevelopmental syndrome (p. 355). These same authors also state that autistic characteristics generally begin to appear between infancy and three years of age. This could not be confirmed by the other articles I reviewed because those researchers worked with participants in preschool and kindergarten settings. However, many articles

described characteristics appearing very early in the children's lives and they agreed that early intervention is best for the children.

Now that we know ASD emerges early in most children, what common signs should parents and educators look for? According to the literature, children with ASD have difficulty with language and social skills. It seems to be strongly agreed upon that these children struggle with verbal and nonverbal language development and need therapy to help improve these skills. Interventions were also encouraged to help autistic children develop social skills. Later in this chapter I will discuss my interpretation of possible interventions and in which situations they are most successful.

In Brownell and Walther-Thomas's (2001) interview with Steven Shore, he described how children with ASD tend to perseverate on intellectual ideas or objects. This characteristic was also described by other researchers. For example, a child may draw the same cartoon scene repetitively throughout the day every day. Another child with ASD may constantly spin whatever is in front of him or repeat lines from a book. Shore also states, "Many students on the autism spectrum are oversensitive to touch." (Brownell & Walther-Thomas, 2001, p. 298). Most of the literature I reviewed did not address sensory issues, however Goodman and Williams' article *Interventions for Increasing the Academic Engagement of Students With Autism Spectrum Disorders in Inclusive Classrooms* (2007) also describes the physical needs of students with autism and how to help them with sensory issues. I know from personal experience, students with ASD can range from loving touch and sensory materials to absolutely hating them.

Just as children can vary in their desire of touch, autistic children can show varying degrees of any of these common characteristics. Both Brownell and Walther-

Thomas' article and Lord, Cook, Leventhal, and Amaral's article describe the differences in characteristics between children with ASD. In the article *Autism Spectrum Disorders*, it states, "Autism is a heterogeneous condition; no two children or adults with autism have exactly the same profile." (Lord, Cook, Leventhal, & Amaral, 2000, p. 355). In all the literature I have reviewed, the authors agree that children with ASD fall along a large continuum of characteristics ranging from high functioning autism to severe autism. That is what makes finding successful interventions so difficult. Each intervention needs to be tweaked for each child and some may work better with some children than others.

I will now look at the specific interventions reviewed and discuss their outcomes. Three studies were conducted to determine how well a specific intervention worked with children who have ASD. As I was looking through literature I noticed that there are a number of different interventions that seem to show small growth with autistic children. However, there does not seem to be one or two approaches that consistently help a large number of children. The literature I reviewed all showed some success, but the results were not overwhelmingly successful.

Reed, Osborne, and Corness looked at three different interventions in their article *The Real-World Effectiveness of Early Teaching Interventions for Children with Autism Spectrum Disorder* (2007). They found that ABA therapy showed small growth in children's education and intellectual functioning. This is one of the two therapies I have seen used in my school district with our autistic students, but I have not directly been involved with it to know how well it works with our students. Reed, Osborne, and Corness also found that special nursery programs showed small improvements in children's adaptive behavior skills. The difference between these two interventions in

this particular study is that ABA takes place one-on-one in the child's home and the special nursery program is taught in a small group environment in a preschool setting. It makes good sense that children would improve academic skills in a one-on-one setting. It also seems appropriate that a child would better adapt to their peers and environment when they were taught in a group setting.

The second article reviewed focused on how well students learned in two different types of naturalistic settings. As you recall from chapter two, the Naturalistic I setting took place at a table and was taught with a repetitive or rote method. The Naturalistic II setting was more natural and took place on the floor. The researchers found better results with the Naturalistic I setting. Because of the structure and sequence most autistic children need, it makes perfect sense that they would be more successful with the Naturalistic I intervention. However, I would like to see how well the children retained their newly learned skills and if they eventually learned to independently play with their peers.

The relationship-focused intervention takes a different approach to working with children who have ASD. This intervention is done in the child's home and their parents are the ones leading the intervention. This approach showed some growth in children's social-emotional development. I find this intervention particularly interesting because it seems like a natural intervention that could take place during everyday activities between a parent and a child.

While reading these articles, two questions continually reoccurred. First, what is the success rate of combining these interventions? Do children have more success when they receive more than one intervention? Or, is it too much for one child to receive more

than one ASD intervention? It would be interesting to see if there is research on combining approaches. Second, as was mentioned earlier, children with ASD are so drastically different from one another. It seems clear that one approach may work great for one child and a different approach is a better choice for another child. The small gains seen in these children appear to support the notion that one intervention can have just as much success as another. The most positive finding is that children with ASD can improve and learn skills to better their educational and social development.

Now that we have looked at what ASD is and what interventions can be done at the earliest stages, what do teachers need to know? How can they best help students with ASD in their classrooms? Chapter three reviewed four articles that suggested interventions to use in an inclusive classroom with students who have ASD. I was particularly interested in these interventions because I am a kindergarten teacher who has an inclusion classroom and am seeing more and more students with ASD. Like most teachers, I want to know how to help all my students succeed.

The first school intervention reviewed focused on the Naturalistic Approach. Kohler, Anthony, Steighner, and Hoyson (2001) trained teachers to use this direct approach to help students learn social interaction skills. The students learned important skills like making choices, coping with unexpected disruptions, asking questions, and interacting with peers. I think all of those skills are important to develop. Students showed social growth and were able to maintain it without direct teacher prompting. I do question how challenging this approach would be to implement. It requires a lot of teacher training and the teacher's direct attention with one student. I would like to see

this approach used with co-teachers so that one teacher could be working with the autistic child while another teacher works with other students in the classroom.

A second intervention focused on using peers to teach the autistic child rather than the teacher. I think this is a great method to use as long as the typically developing peers are properly taught how to use the intervention. The pairs of typically developing peers worked with the child with ASD to develop three skills; stay, play, and talk. Very positive results were seen with this intervention. I believe the strong teacher modeling and use of visual cards helped make this intervention successful. Using the Buddy Skills Package seems like a win-win situation for all the students in the classroom. It is important for children to learn to work with other students and helps build compassion when they are working with a peer who has special difficulties. The only downfall I see with this intervention is the time it would take to initially teach and review with students. The school district would have to agree to give teachers time to develop social skills. If that happens, I think this could be a very positive component of any classroom.

A third intervention focused directly on one particular student rather than involving peers. Blair, Umbreit, Dunlap, and Jung (2007) conducted a Functional Behavior Analysis on one boy to determine how to reduce his challenging behavior. This is a very common problem for teachers of students with ASD and other special needs. After analyzing his behavior and hypothesizing what may be causing the poor behavior, the school staff determined three actions to take to help the student successfully decrease his challenging behavior. They incorporated activities of interest into instruction, taught him replacement skills for poor behavior, and reduced his group size. When all three were put in place, they saw success. I have used this same process with many students.

Sometimes it works and sometimes it does not. I believe it depends on the severity of the behavior and the school staff pinpointing exactly what triggers the child. This intervention also takes a lot of teacher time to implement and may take time away from the other students in the classroom. Like with the naturalistic teaching, it would be helpful to have a co-teacher in the classroom to spend the appropriate time needed with all students.

As mentioned in chapter three, the authors of the final article I reviewed took several pieces of research and compiled those findings to create a full list of interventions and strategies to use with children with ASD. Goodman and Williams (2007) listed practical strategies to help children with ASD in the areas of auditory, visual, social, and physical engagement. These strategies are very teacher friendly and have proven to work with children in many classrooms. I have used several of these strategies in my own classroom. They are generally easy to create and implement and can be very successful for children with ASD. What I appreciate most about this article is that these ideas can be used with any child having difficulty. They may be geared towards children with ASD, but so many other children benefit from their use in the classroom.

Summary

The literature reviewed for this paper has given me a greater understanding of what autism is and what characteristics children with this disorder display. I better understand what to look for in my students but also know that each child with ASD is unique and has characteristics that may fall anywhere along the autism spectrum. The research has also helped me develop a basic level of understanding of what resources are available to families and what interventions may work for their child. Again, it is clear

that each intervention works differently for different children, but there are programs available to help children at a very young age. Most important to me are the interventions I can use in my classroom. I know I have students with ASD in my inclusion classroom and many teachers in the United States will continue to see an increase of children with ASD walk through their doors. There are interventions in place and research has been done to help teachers see what may work in their classrooms. The literature I reviewed gave me a good starting point to try interventions in my own classroom and see what works for my students.

Chapter Five

Introduction

It is very important as a teacher to continue learning and to keep up with current developments in education. One of those developments is the ever increasing number of students in America's classrooms with ASD. This is impacting both special education and general education classrooms. We have learned that autism affects children in a wide range of ways. Many of these children are fully capable of being included in a general education classroom, so we as teachers need to know how to teach them and help them reach their full potential.

After reviewing the literature and analyzing the research, what does that lead me to do as a teacher? My ultimate goal is to be the very best I can for my students and help them be as successful as possible. This goal applies to every student in my classroom, typically developing or not. Learning the characteristics of ASD will most certainly help me, or any teacher, identify students who may possibly be showing characteristics of having ASD. The literature has also helped me learn what interventions parents can use with their children prior to coming to school and after they begin their formal education. Most importantly, reviewing the research and interventions has helped me learn what programs to try with ASD students and what supports I can use in my inclusion classroom.

Teaching Application

Teachers spend a tremendous amount of time with their students during the school year. We see them work and play, succeed and struggle, and interact with one another each and every day. Teachers and parents are the key people to notice how well a child is progressing. A critical aspect of our job is to look out for warning signs that something may not be typical in a child's development. With the increasing diagnoses of autism in our country, teachers certainly need to know what characteristics are common among children with ASD. This paper has given a basic description of what those autistic characteristics may be.

We need to be observant of children who isolate themselves from their peers. We need to ask: are they playing with the other children or always choosing to play by themselves? How are the children communicating? Is there a child who struggles with understanding directions or interpreting a story? Does he or she struggle with speaking to you or classroom peers? Both interpretive and expressive language needs to be analyzed. If there is a child the teacher is concerned about, they should also look to see if the child perseverates on something. Does he or she spin objects or repetitively move an object. Is there another motion that the child does constantly? Or maybe the child repeatedly talks about a movie, toy, or academic subject. Again, these can be characteristics displayed by children with ASD. Finally, teachers should look for any children who have sensory needs. Do they become aggravated by someone touching them or seek out touch more than the average student? Does the child bounce or rock? Does he or she need to be holding something in their hands at all times? Any of these actions should cause a teacher to look further into the child possibly having ASD.

That being said, we know that every child is different and every child has unusual quirks and characteristics about them. Because a teacher sees these warning signs in a student does not mean he or she has ASD. If a teacher has concerns that a child is showing several characteristics associated with ASD, he or she should conference with her teaching team and seek further evaluation from building or Area Education Agency staff. The teacher should also meet with the child's parents or guardians and discuss what he or she is noticing in the classroom. A teacher is not qualified to make a diagnosis, however, that teacher can share his or her observations and possibly suggest they see their family doctor for more follow-up.

If a child is diagnosed with ASD, it is important for the teacher to know what interventions the child has previously participated in and what services they are currently receiving. The teacher may have very little to do with many services like ABA Therapy or Relationship-Focused Intervention, but it is good to have a basic understanding of what that child has received in the past and how successful they were with that intervention. All teachers and parents need to have open communication, but it is particularly important when working with a child with special needs. Knowing the child's previous education history helps the teacher know what has been tried, how well it worked, and gives him or her a place to work from in their own classroom.

Behavior challenges can happen with any student and in any teacher's classroom. However, having a student with autism in your classroom increases the likelihood that you will see more behavior problems from that child. Teachers may also see increased behavior problems from other children when the child with ASD is receiving more attention or is displaying disruptive behavior. So what has the research taught us about

combating this issue? The article, *Promoting Inclusion and Peer Participation Through Assessment-Based Intervention* by Blair, et al. (2007), suggests beginning with an FBA. I fully agree that this is the place to start. As the article described, this approach helps teachers list the problem behaviors, what might be triggering those behaviors, and what possible strategies can be used to decrease them. It is a good tool to use as a starting point. Once possible strategies are in place, try them out, collect data on the child's behavior, and use the data to determine if the strategies are successful.

Chapters two and three described many successful strategies to use with students. In the area of behavior, students may need picture schedules to help them see what they are expected to do and what is coming next. They may need objects to follow along with instruction like their own copy of the teacher's book. This may help them focus and stay on task. Students with ASD who struggle with learning appropriate behavior may need to be taught with a Buddy Skills Package and learn how to behave from their peers. Maybe a child needs to take a break from instruction, walk around the school for five minutes, and then rejoin the class. Assess what the child struggles with, what triggers those behaviors, and then use the interventions suggested in this paper to try to meet the child's needs and decrease his or her behavior problems.

Once the behavior is under control, how do we help the child with ASD learn social and academic skills? Socially, we need to help them develop appropriate relationships with their peers and communicate effectively. I am a strong believer that we need to use their peers to help teach them and research from this paper supports that belief. Again, using the Buddy Skills Package is a great way to teach students to work together and learn from one another. It benefits all students in the classroom and can be

adapted for any skill as long as it can be modeled to the typically developing peer. Using the naturalistic teaching described in Kohler, et al. (2001) is another great way for teachers to help students develop social skills and include other students in that teaching. Questioning students, having them elaborate on their initial comments, including them in social activities that pique their interest, and using picture cues are just a few strategies to use when helping a child with ASD develop critically important social skills.

A child with ASD may be very successful academically or he or she may struggle a great deal. It is important to look at how that child learns best. It is very likely that they do well with very structured and routine activities. I suggest using picture cues with almost any autistic student, as is mentioned by Goodman and Williams' (2007) article. It is probably best to also work with that student in small groups and in their areas of interest whenever possible. Do they have a particular topic of interest? What motivates them to learn? Does giving them choice increase their attentiveness and success? Again, I believe it is helpful to use a picture schedule so that the child can see what they need to do now and what is coming next.

Some children with ASD may need additional visuals, like a copy of the calendar bulletin board or sentence strips that the teacher is using. If they struggle with auditory instruction, the teacher may need to sing songs or have a copy of directions in picture or list format. The directions may need to be highlighted on the board. As mentioned before, many children with ASD have sensory and movement needs. It may be important to give the child a squishy ball to hold during instruction. Maybe he or she needs to sit on a partially inflated beach ball to help them gain an awareness of their body. As Goodman and Williams mentioned, moving about the room as the "teacher's helper" may

be enough to get out their excess energy and focused back on the lesson. Look at each individual child's needs to determine what type of additional interventions, strategies, or supports they need to be academically successful.

Summary

The purpose of this paper was to answer three questions: (1) What are the characteristics and behaviors seen in children with Autism Spectrum Disorder?, (2) What interventions best help children with Autism Spectrum Disorder develop socially and cognitively?, and (3) What interventions can teachers use to foster a successful learning environment for children with Autism Spectrum Disorder in an inclusion classroom? A number of articles reviewed helped answer these questions and gives a glimpse of the research available in the area of Autism Spectrum Disorder.

We know that it is a disorder on the rise in America and one that teachers will see more of in their students. We have learned that ASD presents itself differently in every child, however, there are basic characteristics that are commonly seen in most children with ASD though they may be at varying degrees of severity. There are successful interventions that parents can seek out for their children at very young ages, and should do so to help their child develop as typically as possible. Teachers need to be aware of these interventions to help them prepare to teach children with ASD in their classrooms. It is safe to say that most teachers in America have had or will have students with ASD, diagnosed or not. Therefore, they need to know how to best help those students grow socially and academically. The literature in this paper has given suggests on interventions to use with autistic children and strategies to put in place to create an inclusive classroom that meets the needs of all children.

Though each child with ASD may be unique, each one has the potential to learn and become a successful member of the community. It is our job as teachers to help them reach their full potential and succeed in our classrooms. Using the knowledge gained from this paper and continuing to research ASD will help us accomplish that critically important task.

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