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Effective Treatment Strategies for Children with Autism in Grades K-6

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Effective Treatment Strategies for Children with Autism in Grades K-6

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Submitted in Partial Fulfillment of the Requirements for the Degree

Master of Science in Education

School of Education and Counseling Psychology

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Signature Sheet

This thesis is approved by the chair of the Master of Science in Education program and submitted to the faculty of the Department of Education in partial fulfillment of the degree, Master of Science in Education. The content and methodology reflect the work of the candidate.

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Abstract

The incidence of children with Autism Spectrum Disorders (ASD) continues to rise in our elementary schools. With this increase, more and more children with ASD are present and requiring services in public school classrooms. As teachers and parents we need to know how to provide classroom interventions in order to optimize learning with this group of children, and be able to successfully integrate these students within our classrooms and schools. In order to accomplish this, we need to explore effective strategies to produce positive learning and behavior outcomes.

The literature selected and researched for the purpose of this proposal supports using effective teaching strategies with measureable results for our students on the autism spectrum. The sampling groups chosen for the research are the professionals who are currently using effective treatment methods with autistic children in the classroom setting.

Results indicate a wide variety of treatment strategies that address social and communicative, behavioral, and academic needs for students on the Autistic Spectrum. Although there are several promising practices occurring within classrooms, this proposal focuses primarily on evidence based practices that demonstrate successful outcomes for students within an inclusive setting.

Chapter 1 Introduction

It was the first day of school, August 2008. “Kevin”, a new student at the school with autism, entered his first grade classroom, along with nineteen other children, including my son. Despite having a one-on-one aide to provide behavioral support throughout his school day, Kevin had a difficult time transitioning into this new environment. From the first day throughout the first few weeks of school, behaviors erupted. Besides the nearly constant loud screaming, issues of safety quickly came into play. On one occasion, Kevin climbed to the top of the bookcase. There were instances of physical assaults. Kevin began hitting and squeezing other children; one little girl was squeezed tightly around her neck. At the end of a two week period, parents were irate, and the classroom community began to unravel. Three students had transferred out of this classroom. One left the school permanently. The teacher, frustrated, helpless and upset, would break down into tears periodically. One group of frightened parents “manned” the classroom from 8:20 until 2:35 to help supervise. One mom even removed all of the scissors from the classroom. Another group of parents protested to the superintendent, the mother of Kevin, as well as other school personnel. Kevin began spending more time either walking the playground with his aide, or sandwiched between two beanbags in the back of the classroom, than he was at his table group. Eventually, additional behavioral support was provided for Kevin. However, it was just too little, too late, and Kevin only stayed in the classroom until the Thanksgiving holiday, before his

parents transferred him to a different school. I, myself, a firm believer in inclusive education, was disappointed by what had transpired over these weeks. Kevin's needs were not met in his least restrictive environment. In addition, my son, as well as the rest of his first grade class, was denied the valuable learning opportunities that happen when a diverse population of students is present in the classroom. As a Resource Teacher at a different school, I have seen several children within our programs that have ASD. My hope is that we can prevent what happened in Kevin's case, from happening at my school, or elsewhere.

Statement of Problem

The challenge facing educators today is how to successfully integrate children with autism and ASD within our K-6 classrooms. The term ASD refers to autism and a number of related medical diagnoses that share a set of criteria based on impairments in social interaction, communication, flexibility in thinking, and behavior (Frederickson, Jones & Lang, 2010). The classification of this disorder, as specified in the DSM-IV (American Psychiatric Association, 2000), include five major diagnoses that fall under the ASD umbrella. These include Autistic Disorder, Asperger's Disorder, Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), Rett's Disorder, and Childhood Disintegrative Disorder. Autism has also been defined by the Autism Society of America (2014) as a "complex developmental disability that typically appears during the first three years of life and is a result of a neurological disorder that affects the normal

functioning of the brain”. While it is unclear what factors cause autism, there is speculation within several studies, that it is attributed to genetic and/or environmental factors. There is also no known cure. However, with early intervention and specific treatment strategies, children that are affected with autism can make improvements in daily living skills, learning and development.

Knowing how to address this population in our K-6 schools has become not only a necessity, but creates a sense of urgency as well. Since the rates of autism are increasing within our schools and communities, and have been for several years, greater numbers of children with autism are beginning to enter adulthood. According to the Centers for Disease Control (2014), the rate of children afflicted with autism may be as high as 1 in 68 children. With that said, proper interventions and re-mediations need to take place now at the grade school level, so that those living with autism can learn to lead independent and successful lives into adulthood.

Purpose Statement

The purpose of this qualitative study is to evaluate which treatment strategies, or combinations of, have been found to be effective and successful with providing remediation and treatment for children with autism and ASD, primarily reducing undesirable behaviors in K-6 classroom settings. Furthermore, the focus of this proposal is on the exploration of popular methods of treatments that address the social, communicative, behavioral and academic needs of children with autism.

Research Question

Which treatment strategies are effective and successful for addressing the specific social, communicative, behavioral, and academic needs of children with autism in grades K-6? Autism is characterized by challenges with cognition and learning, behavior, social interaction, and communication as compared with neurotypical peers. Challenging behavior is that which negatively impacts a child with ASD in many ways. It can result from a strong need for routine, a desire for repetition, problems handling transition, and difficulty stemming from sensory integration. It can be observed as “meltdowns”. Social interaction is defined as how an individual uses verbal and nonverbal communication during interpersonal exchanges. Children with autism often have difficulty recognizing the thoughts and feelings of others, referred to as “mindblindness”, which can impair effective communication (Aspy & Grossman, 2012). Cognitive differences are also prevalent in children with autism. As a result, academic differences often exist due in part by weaknesses with executive functioning. Treatment strategies are practices and methods put into place to by professionals and parents to compensate for deficits in these areas. They are structured and specialized in hopes of producing the best results for individual needs.

Theoretical Rationale

The theoretical rationale behind this proposal stems from Public Law 94-142, written and designed for children with disabilities in 1975 (Education of All Handicapped Children Act, 1975). It mandates that children with disabilities be fully educated and receive a fair and appropriate education, in their least restrictive environment. The Individuals with Disabilities Act, IDEA of 2004 amended this law to include provisions for early interventions, for ages 3 to 21, and for the right to a full range of educational services to include counseling, transportation, speech and language, occupational and physical therapy. Current legislation in general and special education expands on this to mandate that all educators are implementing evidence-based educational programs that are appropriate to individual education plans (Individuals with Disabilities Education Improvement Act [IDEA] 2004; No Child Left Behind 2001).

The second theoretical rationale behind this proposal is that of B.F. Skinner's Behaviorism Theory. This theory states that human behavior is learned from experience, relying on environmental influences. It is the belief that humans respond in a predictable manner to stimuli. Furthermore, behavior that is positively reinforced will repeat itself, eventually becoming habit, which Skinner refers to as "operant conditioning" (Olson & Hergenhahn, 2009). Treatment practices for Autism, such as Applied Behavior Analysis (ABA) are derived from Skinner's Behaviorist Theory and presently used as a method to condition desired behaviors.

Assumptions

My first assumption is that each treatment strategy is highly individualized. What strategy may work for one child may not work for another. Secondly, the combination of strategies when used together will produce greater effects than a single strategy used by itself. My third assumption is that not all schools have access to similar resources. There may be limited resources and teacher trainings available, or different school cultures, which may limit or influence teacher's ability to choose and try different approaches when educating children with autism.

Background and Need

There are two significant contributors in the field of Autism research who have devoted their lives to studying various treatment strategies for children with autism. They continue to provide education and awareness to the general population in this area. These experts have translated their research into practice and have applied their visions of improving the lives of autistic children and their families. As a result, thousands of people have been provided with a new hope. The first person, Dr. Bryna Siegel with UCSF has devoted thirty years of her professional life studying autism. She has written five books on the subject, created treatment plans for individuals and has opened up world renowned clinics for thousands, in order to search for ways to treat autism. Her research uses an integrated developmental behaviorist approach. This approach targets

treatment areas of autism specific difficulties in perception, processing and retrieval of information (Siegel, 2014).

The second expert in the field of autism is Dr. Temple Grandin (Grandin, 2014). She is a well-known author and lecturer in this field who also is affected with this disorder. She was one of the first contributors in this field that brought to light the sensory issues associated with this disorder. Her research also includes integrated treatment approaches utilizing both behavioral and sensory aspects and emphasizes the importance of early intervention. Living with autism, she brings a different perspective to us. She helps us understand better and relate to this condition, while offering us suggestions on what we can do to improve the lives of those with autism.

There is an increasing need within our schools to develop a high level of expertise that addresses the needs of students with autism. Rising numbers of autism cases, along with the implementation of IDEA, has redefined some aspects of our educational system. This brings a sense of urgency for educators to understand and practice successful interventions for this population within our schools. Effective inclusion strategies and practices are in great demand. In the following chapter, interventions that provide students with optimal educational outcomes will be discussed. Since autism is characterized by a diverse and complex set of characteristics and needs, treatment strategies that positively impact critical areas will be highlighted.

For the purpose of this study, critical areas have been narrowed down to include social and communicative, behavioral and academic. The consideration of a “no one size

fits all” model is also taken, since needs of students on the Autistic Spectrum are highly individualized. Individualized interventions among these critical areas will include video modeling, social narratives, Applied Behavioral Analysis (ABA), Pivotal Response Training (PRT), the TEACCH Approach, computer-aided instruction, and the presence of a resource base program. All are considered evidenced based practices that are practical in classroom settings, which also contribute to developmental gains of students in kindergarten through sixth grade.

Chapter 2 Review of the Literature

The focus of the literature review begins with an overview of inclusion practices and principles among children with ASD within our elementary schools. First, the historical context of various treatment strategies is discussed. The second section, the review of the previous literature, outlines research that has been conducted on effective treatment strategies for children with autism. The literature is divided into sub-sections, each containing specific, scientifically based treatment strategies to address interventions within the following categories: (a) Social Skills and Communicative; (b) Behavioral; (c) Academic. Particular strategies being implemented by teachers within classrooms are reviewed, as will the success rate of the intervention strategy.

Historical Context

With the passage in 2004 of the amendment to the Individuals with Disabilities Education Act (IDEA), there has been an increased emphasis with respect to educating our children in their Least Restrictive Environment {LRE} (IDEA, 2004). For many children, especially those with higher functioning autism, the LRE is defined as the general education classroom environment, where neurotypical children are placed. This legislation, based on the court decision of *Daniel R. R. v State Board of Education* (1989), has been instrumental in redefining how children with autism are included into the general education classroom. Two significant criteria as a result of this ruling are raised. The first is whether the use of supplementary aids and services can be used to

successfully achieve an appropriate education within the general education setting for children with autism. The second is whether a child who is placed into a more restrictive setting is integrated to the maximum time appropriate within the general education setting. As a result, more children with ASD are being served in regular classrooms within our public school system (California Department of Education, 2011).

Communicative / Social Skills

Children with autism are characterized as lacking skills with appropriate social responses and initiations with others. It is imperative that treatment options address and teach these valuable skills (Nikopoulos & Keenan, 2007). One evidence-based strategy, video modeling, involves taping adults or children engaging in a targeted, desired behavior. This has proven to be an effective method of treatment to address social skills and communication deficits for children with autism. Since children with autism generally experience impairments with regards to adequate social skills such as maintaining reciprocity, perspective taking, ability to initiate interactions, as well as inferring the interests of others, they often suffer social consequences. Furthermore, implications of this often worsen with age, following children into adulthood, affecting the social, emotional, and cognitive development of those with autism (Flynn & Healy, 2012). One of the most notable strengths of video modeling not only includes rapidly acquiring successfully new social skills, but also the ability to generalize this skill across different settings, peer groups, and time (Nikopoulos & Keenan, 2007). When combined

with other interventions used jointly, such as cue cards, task analysis and reinforcement, the effectiveness of this intervention increases (Nikopoulos & Keenan, 2007). Specific skills that have been taught using this method include reciprocal play engagement and social initiation skills. Flynn and Healy (2012) maintain that a child with autism, in order to successfully benefit from this treatment, must first develop imitative skills, the ability and desire to imitate others. However, according to Nikopoulos and Kennan (2007), there is evidence that use of video medium will actually enhance children's imitative skills, by drawing on the visual strengths that so many children with autism tend to have. Recent advances in classroom technology have made this intervention more possible than ever before. It has also been found that this method is more cost efficient than producing booklets, and employing aides to teach communicative and social skills.

Another evidenced based method of teaching communicative and social skills, developed by Carol Gray, is Social Stories™. This is an individualized approach, described by Aspy and Grossman (2012) as a method of task analysis, whereby information is broken down into smaller, distinct parts. The implementation of this method consists of delivering a script to the learner, using specific types of sentences, from the learner's perspective. Delano and Snell (2006) found that Social Stories™ were effective both with and without the additional social skill interventions. In a study consisting of three children with autism, children increased social engagement with peers during play sessions, specifically with initiation and response to peers during

conversation. Furthermore, two of the three children in this study generalized gains with social skills to the general education classroom (Delano & Snell, 2006).

A second study conducted by Hanley-Hochdorfer, Bray and Kehle (2010), also measuring the effectiveness of Social Stories™ to increase social engagement skills suggests that this strategy is most effective and prudent when used in combination with other interventions such as modeling. While Social Stories™ was effective in decreasing disruptive behaviors, using it in isolation did not produce the same outcome as was seen the previous study by Delano and Snell (2006). It also appeared that Social Stories™ would be best suited to positively impact the social and communicative behavior in children with autism rather than Asperger's Syndrome (Hanley-Hochdorfer et al., 2010).

Behavioral

There are many variables that exist within the classroom that may lead to challenging behavior. Teachers should consider all aspects of the environment as they work to successfully include children with autism into regular education settings. One study conducted by Conroy, Asmus, Boyd, Ladwig, and Sellers (2007), demonstrates that a teacher can be proactive by manipulating these variables in order to prevent problem behaviors before they arise. Additionally, interventions that consist of both the manipulation of antecedents along with a consistent schedule for reinforcement, is most effective for treating behavior challenges in the classroom. Considering

antecedent factors in combination with a reinforcement system for guiding desired behavior, is rooted from the conceptual framework of Applied Behavioral Analysis (ABA) principles. Generalizations from the study by Conroy et al. (2007) of typical antecedent classroom factors include that the frequency of disruptive behavior increases during independent seat work activities, as opposed to group settings. The study also concludes that there are higher rates of disruptive behavior during child centered activities, than with adult directed activities. The availability of classroom materials was also a factor. Higher rates of disruption were correlated with availability of materials than when they were not readily available (Conroy et al., 2007). Additionally, this study concluded that there were no universal factors among all individual children. For this reason, the need for a Functional Analysis Assessment is crucial for understanding antecedents that influence classroom behavior that are specific for individual students.

Pivotal Response Training (PRT) is another behavioral approach based on B.F. Skinner's Theory of Behaviorism. An overview of this approach within inclusive classroom settings is provided by Koegel, Koegel, Harrower and Carter (1999) which includes the application of PRT to teach self-management skills in students with autism. PRT, a naturalistic approach, provides students with autism motivation and reinforcement while engaging in desired behaviors. PRT has been found to be effective within a broad population of children with autism, with a wide variety of behaviors. The structure is focused on defining target behaviors, identifying and distributing motivating reinforcers, fading of undesirable behaviors and validating appropriate behaviors within natural

settings. By teaching students self-management techniques within the context of PRT, students are actively involved in their own intervention process, by learning to manage this process on their own. Ultimately this has resulted in reduction of disruptive behaviors and autonomy. Furthermore, it was found that students generalized pivotal skills across settings and behaviors, making it ideal for inclusive classroom settings since it decreased the need for teacher vigilance (Koegel et al., 1999). Favorable results continue as self-management practices have successfully carried over to job placements and other community settings (Koegel et al., 1999). A study by Southhall and Gast (2011) furthers the literature by Koegel et al., (1999) when considering the use of self management as a procedure to modify one's behavior and generalize learned behavior across different environments with independence. Southhall and Gast (2011) reviewed 24 empirical studies that compare and contrast the use of self management, finding that those interventions that include these tools are found to be a highly effective method when teaching social, vocational and communication skills, as well as reducing the occurrence of restrictive and repetitive patterns of behavior for children on the Autistic Spectrum.

Academic

Children with autism are typically found to have a higher than normal occurrence of learning disabilities which makes functioning in a regular education classroom challenging (Aspy & Grossman, 2012). Hume and Odom (2007) provide details of one

evidence-based method, Structured Teaching, to help address this issue. Developed by Division TEACCH (Treatment and Education of Autistic and Related Communicatively Handicapped Children), Structured Teaching has proven to be an essential element of effective classroom instruction for children with autism. It includes the integration of visual supports, careful organization of the classroom environment, emphasizes social communication, and incorporates special interests in order to increase motivation and learning (Aspy & Grossman, 2012). Furthermore, this strategy is designed with consideration of strengths commonly found in children with autism. These strengths include visual spatial organization, and the need for structure and predictability (Hume & Odom, 2007).

Participants of the study outlined by Hume and Odom (2007) demonstrated higher levels of on task behavior, task participation and task completion in the general education classroom when Structured Teaching was used. It was found that participants also improved with their ability to initiate academic tasks and generalize skills learned to different settings. Additionally, the frequency of teacher reprimand was reduced. It was found that all essential components of Structured Teaching methods should be in place, for this strategy to be most effective. Components include organization of the classroom to reduce distractions, visual schedules, and the use of a work system in class that consists of visual instructions which provide both organization and clarity to the task (Hume & Odom, 2007).

Frederickson, Jones and Lang (2010) found that having a resource base at a school site can contribute to the academic success of children with autism. A resource base consists of a special education program run by learning specialists and offers services within a pull-out or push-in model. Resource bases offer a “well-graded progression of inclusive experiences matched to individual need” (Frederickson et al., 2010). Results from a qualitative study indicate that the presence of a resource base has many advantages when compared with schools that do not have such a program in place for children with autism. One advantage is a higher rate of teacher trainings among schools with resource bases. Frederickson et al., (2010) also found an increased rate of collaboration between teachers and education specialists, resulting in better teaching practices within the general education classroom. These included more appropriate lesson structure and increased visual cues. Additionally, a resource base allows opportunities to re-teach difficult concepts, modify assignments or provide alternative lessons when appropriate. In some instances, a resource base can provide a pull out to a quiet room if a break is needed. It was found that resource bases were also associated with higher rates of parent satisfaction with their child’s school success. This resulted in increased home and school collaboration, than found in those schools with no resource base. Finally, Frederickson et al., (2010), discovered that schools without a resource base relied too heavily on teaching assistants, who lacked sufficient knowledge and training, for educating children with autism.

The final review of literature supports the effectiveness of using technology based interventions for children with autism. In a study outlined by Goldsmith and Lablanc (2004), eight Autistic children who used computer-aided instruction improved their recall of newly learned grammar and vocabulary by 85%, as demonstrated during a post- test, 30 days after instruction. Using a computer to create a video medium to present basic instruction is appealing and engaging to students, especially those on the Autistic Spectrum since they are predominately visual learners (Aspy & Grossman, 2012). Goldsmith and Lablanc (2004), further state that students with autism were observed as more attentive and motivated when using computer technology. Additionally, they were less resistant with lesson engagement and spent more time on reading material when it was offered on the computer. One limitation of technology use as an intervention tool is that it requires a high level of technical expertise on the part of the behavioral clinician or teacher. Collaboration with an expert in technology is a necessity in order to help select and use the technology most efficiently (Goldsmith & Lablanc, 2004).

Students on the Autistic Spectrum experience deficits with social and communicative, behavioral and academic skills (Aspy & Grossman, 2012). Research has led us to evaluate evidence based practices. Those that have been reviewed include video modeling, Social Stories™, Pivotal Response Training, Applied Behavior Analysis, TEACCH, computer instruction, and the implementation of a resource base at a school site. All of these treatment options have been effective addressing the skill deficits typically found in children with autism. Results indicate substantial improvement made

by students within all studies. Improvement made in the areas of academic and behavioral, have been demonstrated by students' on-task behavior, ability to generalize learned skills, as well as application of self management techniques. Gains made in the area of social skills include the development of imitation skills, reciprocity, and social engagement. Research supports that strategies introduced in a discrete manner, when methods of structured teaching are implemented, and consist of highly visual components, lead to the greatest amount of success. The following chapters will include investigating how these highlighted treatment strategies are producing the desired learning outcomes for students with autism within natural settings.

Chapter 3 Method

Introduction

This study explores effective treatment strategies for educating children with autism within inclusive classroom settings, in grades K-6. My research follows a qualitative design using interviews and observation with professionals, all of whom having a wide range of expertise in this field. Their knowledge in this field offers educators new insight into effective strategies when working in our classrooms with children on the Autistic Spectrum. Additionally, their professional perspective on teaching social and communicative skills, integrating behavioral strategies, and addressing academic challenges serves as a resource for all teachers at my school site. My interviews are focused on professionals with first-hand knowledge and demonstrated success rates with working with this population.

Sample and Site

Two professionals were selected forming a purposive sample. The first, a psychologist with over thirty years of experience in this field has a background with helping establish autism programs within the County. He was chosen for his expertise as he brings a wealth of information to this nature of study. I expected that he would make a valuable contribution to my project. The selection of my second participant, a speech and language pathologist, has over fifteen years of experience working within public and nonpublic schools. Most recently she held an administrative role within a well-known

non public school specializing in students with Autism Spectrum Disorders. My selection to interview this professional was also based on her extensive professional background and the potential contributions that she could make to this project.

The site of the interviews took place at a local elementary school in a rural setting within the greater San Francisco Bay Area.

Ethical Standards

This paper adheres to ethical standards in the treatment of human subjects in research as articulated by the American Psychological Association (2010). Additionally, the research proposal was reviewed by the Dominican University of California Institutional Review Board for the Protection of Human Subjects (IRBPHS), approved, and assigned number 10244.

Access and Permission

Professional colleagues, employed by the same school district as myself, were selected for an interview taking place within our school setting. These colleagues, who provide services to students on the spectrum, as well as offering their expertise through collaboration with other teachers, are my target subjects. Approval was granted by the Dominican University of California Institutional Review Board for the Protection of Human Subjects prior to the interviews. I obtained the necessary permission by my school district's administration. I also met my employing school district's requirements

to interview my professional colleagues. The interviewees were made aware of the purpose of my study and understood that all information gathered from the interviews would be kept confidential.

Data Gathering Strategies

Using a qualitative research approach, my data is based on interviews conducted with professionals. Interviews were set up following Institutional Review Board for the Protection of Human Subjects approval. Professionals were asked if they would be willing to discuss approaches to working with students with ASD. Information was gathered using ten questions, designed to elicit open ended responses. Questions targeted effective instructional, behavioral, and communicative strategies. Interviews were conducted individually, in order to insure privacy as well as to keep results from each participant from influencing another's responses. Interviewees had experience and training and were held with high regard by other colleagues. Both professionals have had a high success rate with implementing effective strategies that lead to integration of students with autism into the general education classroom.

Data Analysis Approach

Once information was gathered, the researcher examined the text of the interviews and observations. Themes were identified and described in narrative form. Information was transcribed and shared with each participant via email in order to ensure accuracy.

Chapter 4 Findings

Description of Site, Individuals, Data

Ten questions were asked of two professionals, a school psychologist and a speech and language pathologist. All names have been changed to protect confidentiality, therefore the school psychologist will be referred to as Mr. Smith, and the school speech and language pathologist will be referred to as Mrs. Jones. Interviews were conducted individually, at a rural elementary school in the greater San Francisco Bay Area. The questions and responses are listed below. All questions were designed to elicit open ended responses to gather as much information and insight as possible with regards to the most effective treatment approaches for teaching children with autism. The following summarizes my interviews with each participant.

After reviewing the literature on effective treatment strategies to address social skills and communication, behavior and academics, I found the following strategies to be of some importance of working with children with autism. These strategies include the following: Video Modeling, Social Stories™, Pivotal Response Training (PRT), Applied Behavioral Analysis (ABA), Structured Teaching (TEACCH), Computer Instruction, and the implementation of a resource base at a school site. Please identify strategies that are familiar to you. For the ones that you selected, please comment on your perceptions of their effectiveness in working with students.

Mr. Smith (anonymous, personal communication, March 14, 2014) has identified Social Stories™, Video Modeling, TEACCH / Structured Teaching, and methods derived

from ABA as being the most familiar and significant strategies used in schools that he has worked. The latter two methods have been of greatest importance in his opinion. Mr. Smith refers to one example leading to the success of ABA. He explains that it considers the manipulation of antecedent factors and combines these with a reinforcement system. In particular, he has seen successful outcomes in one K/1 classroom for students with autism. Here, the classroom teachers have paid careful consideration to environmental factors, since all of their students with autism have issues managing sensory input. An example of this is made by the efforts of the teachers to diffuse overhead lighting in the classroom by using colored table clothes on each table to reduce glare.

In addition to manipulating antecedent factors, the TEACCH approach was also emphasized by Mr. Smith as another approach that has been successful in many classrooms that he has observed. He stated that the classroom environment should be a “highly structured and purpose driven environment, one that creates a highly predictable school day with use of visual schedules, visual supports, and organization and structure to the classroom”. The response by speech pathologist, Mrs. Jones (anonymous, personal communication, March 27, 2014) was similar to Mr. Smith’s insights, also specifying that ABA is used across the board for all students. In her responses, she also considered level of cognitive functioning of students. She specified that the practice of Video Modeling and Social Stories “is useful for students with higher functioning autism, since these practices require the student to have a certain degree of cognition in order for them to

have a lasting effect.” Mrs. Jones has observed students who are lower functioning to experience success from PRT and TEACCH Approaches, since they are both very direct and highly concrete methods.

Please describe effective communicative and social skills treatment strategies that you have seen in place within the various schools that you have worked.

Mr. Smith explains that the use of iPads has effectively provided both social stories and video clips to students in order for them to learn appropriate communicative, social and behavioral skills. Mrs. Jones also describes Video Modeling as a particularly effective strategy, and one that she chooses to utilize within her own classroom.

Additionally, Mrs. Jones recommends the use of a specific curriculum, one that has been integral with teaching perspective taking. The *Social Thinking Curriculum*, designed by Michelle Garcia Winner creates a framework for building social skills and learning how to process social information. Its lessons are comprehensive, consisting of narratives, videos and comic strips that are motivating for all students.

What intervention strategies to address academic challenges have been in place at your schools?

Mr. Smith believes that when addressing academic challenges, the most commonly practiced strategy includes one-on-one interventions with exposed group instruction. Additionally, instruction with iPads, the use of audio and visual technology in the classroom, and teaching assistants are widely used with success. Mrs. Jones has suggested that in addition to current technology available in the classroom, the Apple

Application has become a favorite at one of her school sites. She also specifies that regardless of high or low functioning autism, manipulatives and “everything visual” is paramount.

From your experience, what do you feel are the best practices to address challenging behavior? a. What effective strategies have been / are in place at ours or other school sites? b. Even though strategies will vary according to individual needs, if you were to choose two strategies from each component that consistently work, which ones would they be?

Both Mr. Smith and Mrs. Jones are in agreement when describing best practices to address challenging behavior. Best practices include ABA in combination with a Functional Analysis Assessment across all school settings they have worked. Mr. Smith explains that behaviors of children with autism change rapidly. Creating assessments based on individual needs and behaviors result in a better understanding of each student, which in turn leads to more effective outcomes in the classroom.

What is the school’s role in documenting the effectiveness of strategies used? How is the success rate measured?

Mr. Smith describes the collection and sharing of data as integral when determining and measuring the effectiveness of treatment strategies. Teachers must be adept with documenting students’ individual performance, whether it is social, behavioral or academic. Progress is measured by teacher’s extensive data by daily log keeping and IEP goal progress. This information is essential to inform decisions, and create goals,

whether individual or school wide. Mrs. Jones expands on the importance and relevance of data keeping. She explains that the data system in place must be user friendly so that data can be taken continually throughout the course of the school day. Within non-public schools she has worked, there have always been both individual and classroom goals associated with each student with autism.

Please describe the in-service / teacher trainings that have positively impacted staff expertise.

For Mr. Smith, this topic is one of the most important for selecting and practicing effective treatment strategies. He states that the trainings provided by the local county office of education have been of quality. These included a Social Stories™ Workshop and an Asperger's Conference within the last year. The workshop was appropriate for all grade and developmental levels, while the Asperger's Conference was more suited for the upper grades that were transitioning to junior high school. Mrs. Jones attends regular in-services. Most of these take place in-house on a monthly basis within nonpublic schools. Her opinion of trainings that positively impact staff include the topics of "Understanding Behavior" and "Depersonalizing Behavior." These have been an asset for staff by changing their own perspectives on the issue of behavior.

Please describe how treatment strategies are selected and progress monitored.

Mrs. Jones described the basis for the selection of treatment strategies at one school. Strategies are selected from four different tenets, based on school philosophy. These include positive behavior intervention, social skills training with respect to the

Theory of Mind perspective, sensory integration and regulation, and appropriate academics for each student. Specific treatment strategies within each tenet are chosen based on current research of evidence based practices. Progress is monitored school wide through data records.

What has been used for reinforcement that has had success?

Mr. Smith has outlined common reinforcers that typically work with most students. These include iPads, verbal praise, extended recess time, and art activities. In upper grades, a popular method has been classroom currency and the operation of a classroom store. Mrs. Jones reports that it is essential to get to know all students' individual interests, as each student will have varying motivational factors. In her experience, she has seen individual reinforcers such as computer time work very effectively. Point systems and a school store have been successful for whole group reinforcement.

In what ways do you model / instruct interpersonal communication with your students?

Depending on level of functioning, Mr. Smith directs higher functioning students to make eye contact, while for students who are nonverbal he will use visual aids and modeling. Mr. Smith also has seen mixed ability peer grouping work for students on the Spectrum. Mrs. Jones states that correcting undesirable behavior, then modeling appropriate behavior is the method that she will employ. Once correct behavior is observed, reinforcement is provided. When asked her thoughts on mixed ability peer

grouping strategies, she was against this approach, specifying the lack of imitation skills present in children with autism.

Please share any other thoughts that you have on this topic.

Mr. Smith shared the importance of frequent, ongoing communication between teachers and aides of students with autism. The resource programs that exist in the schools that he has worked have facilitated communication between teachers, aides and parents. Additionally, collaboration on a daily basis is essential for the success of the student. He also stated the importance of incorporating language development and life skills across the curriculum. The last topic of importance was the concept of teaching flexibility for students on the Autistic Spectrum. What he recommends is making minor changes every so often throughout the school day. Mrs. Jones has considered the topic of early intervention to be of primary importance. The participation of preschoolers with autism in county programs has led to greater skill development of these students in later years. Secondly, the need for all professionals involved to collaborate regularly and suggested the notion of providing “wrap around” services, whereas each service provider focuses on the student’s goals in all areas. She reiterated her stance on grouping by ability and developmental levels, since children with autism do not customarily pay attention to one another. The final topic introduced by Mrs. Jones was the value of discrete teaching for children with autism.

Overall Findings, Themes

Overall findings include several treatment strategies that have had documented success. These include Video Modeling, Social Stories™, PRT, ABA, TEACCH, and computer instruction. The establishment of a resource base at a school site has also been thought of as an effective method to facilitate collaboration between regular education teachers, classroom aides, and families of students with autism. Common themes among participants included similar perceptions of Applied Behavioral Analysis and Functional Analysis Assessment as well as TEACCH approaches. Video Modeling and social narratives were also common practices, thought of as effective strategies by interviewees. Both Mr. Smith and Mrs. Jones agreed students with autism can experience a higher success rate, when given a structured, predictable environment, combined with strong visual components throughout the school day. Data collection is an integral source of information. Without having this information, teachers struggle to guide instruction and interventions. Commonalities of responses also exist among technology. These include the use of iPads and Apple applications. A school store was identified as a method of group reinforcement. The final commonality among participants includes the need for collaboration among all service providers, professionals and families.

Chapter 5 Discussion /Analysis

Summary of Major Findings

From interviews conducted as part of this project's research methods, there is evidence to indicate that video modeling, Social Stories™, PRT, ABA, TEACCH and computer instruction are strategies highly thought of, and significant when working with children on the Autistic Spectrum. In order for these treatment strategies to be most effective, however, there are two criteria, collaboration and early intervention, that are highly recommended. It is also important to understand the highly individualized nature of interventions for students with autism. There is a "no one size fits all" approach. This theme is consistent among all literature and those interviewed. Stemming from this rationalization is the importance of creating the Functional Behavioral Assessments in order to determine underlying functions of behaviors for students with autism. Another important finding was the unexpected differences that exist among school cultures. It is apparent that within the non public school studied, there are distinct methodologies in place that are more rigid than public schools. These dictate which treatment strategies will be used for the school's population, leaving teachers with limited choices of treatment strategies.

Comparison of Findings to Previous Research

Findings from this study support previous research on effective treatment strategies. Similarities include methods of discrete teaching, teaching with a high degree

of structure and using visual approaches throughout the school day are consistent across all findings and research. Teaching social skills through narratives, modeling and the use of video allows for the rehearsal of target behaviors and are commonly viewed as effective practices that help students adjust to new situations. ABA along with a Functional Analysis Assessment also connects research findings to the review of literature. Reinforcement is another area that is consistent with findings and research. Both review of previous literature and current research supports the presence of a resource base as essential in facilitating collaboration as effective practices.

Limitations/Gaps in the Study

There are a few limitations and gaps in this study. First, the number of experts interviewed was a select few. Increasing the sample size is one area that potentially could be expanded. Interviewing a wider range of professionals, experienced classroom aides, and parents may provide additional insight. Another gap in the study was the limited data available with respect to classroom observations. Had this portion of the study been expanded, more data to substantiate effective treatment strategies could be obtained.

Implications for Future Research

This study invites several implications for future research. One area for future research is exploration of the effectiveness of mixed ability peer groupings to teach social

skills among higher functioning students with autism. Another area is to explore practices of self management techniques following the application of behavioral interventions in the classroom among students with autism as an approach to assisting students in their ability to generalize newly learned skills. Additionally, target students could be followed over a longer period of time, with further documentation of student success.

Overall Significance of the Study

The overall significance of this study is to provide valuable information and resources for all teachers who work with students on the Autistic Spectrum within their classrooms. Teachers most often are responsible in making informed decisions regarding instructional strategies.

About the Author

Lisa Blakley has worked in the field of special education since 1997. After taking time off to raise a family, she continued on with her profession and furthering her education. She has since cleared her special education credential and completed her work towards her master's degree. Currently, she is in her third year working as a resource specialist teacher within the San Francisco Bay Area. She lives with her husband and three children.

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