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Visual Strategies for Students with Autism Spectrum Disorders

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Children with autism spectrum disorders (ASD) commonly have deficits in the areas of communication, socialization, and behaviors. Because many students with ASD are described as visual learners, they tend to show improved response to information presented visually. By using a student's visual processing strength, these strategies can help decrease reliance on areas of deficits, such as auditory processing and communication. There are many supports teachers can use in the classroom to augment and enhance instruction that will increase student independence while decreasing dependence on adult prompts and cues (Ganz, 2007). Because students with ASD can have difficulties processing and understanding language, visual strategies can assist with daily routines and help manage behavior (Rao & Gagie, 2006).

The use of visual strategies with students with autism has been supported through research. These strategies are labeled established treatments in the field by the National Autism Center (2009), in the *National Standards Report.* This means that there have been a sufficient number of studies conducted that provide substantial evidence that visual strategies are able to produce beneficial results (National Autism Center, 2009). The Virginia Department of Education (2011) described visual strategies as evidenced-based in the *Models of Best Practice in the Education of Students with Autism Spectrum Disorders*.

Guidelines for the Use of Visual Supports

a. The first step in implementing visual supports is to assess the students' needs. It is important to understand the uniqueness of each individual with ASD and develop supports that will help meet his or her specific requirements. Supports should be based on the current goals in the education plan for the student with ASD (Volkmar, Paul, Klin, & Cohen, 2005). Students

should be trained to use these supports with explicit instruction, including modeling, prompting, fading, and reinforcement (Rao & Gagie, 2006).

b. Knowing when to begin using visual supports is just as important as when to stop using them. Once a support is selected and the student is taught how to use it, the effectiveness of the support should be evaluated. Start with one or two supports at a time, using trial and error to determine which are the most effective for the student (Cohen & Sloan, 2007). As a student becomes less reliant on the supports, they should be gradually faded. The goal is the students' ability to perform tasks or behaviors independently; therefore visual supports should be used as temporary interventions (Tissot & Evans, 2003).

c. Durability and portability are factors to consider when developing visual supports. Materials should be able to last and withstand heavy use and abuse, as well as water damage or food stains. Since some of these tools will travel with a student throughout the school day, they should be made of materials such as plastic or foam that will hold up to excessive handling and not be of harm to anyone. Many students with ASD need to have visual supports with them at all times, especially if they are used as communication tools. Supports should be portable so they don't hinder the student's mobility or ability to use the tools (Cohen & Sloan, 2007).

d. The age appropriateness of the support should be considered when planning visual supports. As a child gets older, appearance becomes a more important issue for children with ASD. They are more likely to be accepted by their peers if they are using items that typically developing students are using (Cohen & Sloan, 2007). Visual supports should also be chosen based on a student's cultural and social acceptance, (Meadan, Ostrosky, Triplett, Michna, & Fettig, 2011).

e. Students should be able to use the visual supports with little effort and response. A student's abilities and strengths should be considered when developing these tools. This takes into account how mobile a student is, how he communicates, and motor skill abilities. This may require fastening items down or providing assistive technology (Cohen & Sloan, 2007).

Visual Strategies

Classroom structure: Organization of the classroom influences how students react to their environment. Modifications can be made that help students to understand the organization of the classroom and decrease problem behaviors. Providing clear expectations of behaviors and routines also strengthens student independence (Meadan et al., 2011). The physical organization of the classroom should be visually defined so each activity and area of the room is clearly denoted. Organizational supports help students with the social expectations of specific events and structures in the classroom (Volkmar et al., 2005).

Since most students with ASD have some trouble with sensory integration, classrooms should be free from clutter and visual stimuli, and provide a calming atmosphere (Ganz, 2007). Well-defined visual boundaries and arrangement of the furniture in the classroom will provide guidance to students with ASD (Heflin & Alaimo, 2007). This can include room dividers, taped boundaries on the floor, rugs, and clearly delineated work areas for group and independent activities (Ganz, 2007).

Visual Schedules: Schedules can help students with ASD by reducing anxiety and unpredictability in their day. They also provide emotional regulation while reducing the challenge on short-term memory (Volkmar et al., 2005). Visual schedules can occur in many

formats, using photographs, line drawings, written words, and sometimes accompanied by auditory cues. It is important to augment any visual strategy with vocal communication as reinforcement of spoken language (Tissot & Evans, 2003). It is helpful to have items attached to schedules or folders with Velcro so students can physically move items from one place to another as they complete the activities. Visuals schedules should tell what events are going to occur, when they occur, the order of activities and any changes that are going to happen in daily routines. Ganz (2007) notes that changing a student's routine helps teach him to deal with change. If his schedule reflects those changes, he will learn to follow the schedule instead of a typical routine for the day.

Visual schedules can come in the form of calendars, checklists, activity schedules, graphic organizers, or electronic applications. Clocks and timers can also be used as supports that represent the passage of time (Cohen & Sloan, 2007). Schedules can be used as reinforcement strategies to keep track of behaviors during specific time intervals using individual charts for students. This has been shown to improve socially appropriate behaviors in students with ASD (Schneider & Goldstein, 2009).

Schedules can be of great benefit to students who have difficulty with transitions. Schedules that are visually depicted provide icons that represent 'work' that have been completed and what comes next. Students can physically move items from one place to another to represent completion of work. If the student has control of manipulating his own schedule, he can use a format he prefers and gain some control over the order of his day (Heflin & Alaimo, 2007). Individual task supports: Students with ASD will benefit from having individualized work tasks designed in a visually clear manner. Instructions should include the skills and materials

necessary to complete the task with visual task analysis provided (Ganz, 2007). Step-by-step visuals include multi-sequential steps that support independence in the completion of work and eliminate need for adult intervention (Meadan et al., 2011). Keeping students on task is one benefit of using individual task supports. A recent study by Schneider and Goldstein (2009) found that on-task behaviors increased when students were given visuals representing the task components to manipulate. Without clear task instruction, some students with ASD would not participate in leisure activities. Providing visuals of tasks and activities, including playground time, can be used to give students a choice as to what they want to do next (Rao & Gagie, 2006).

Visual scripts: Visual scripts can take the form of social stories, comic strips, power cards, video modeling, or language expression tools. Social stories have been used with students with ASD to help teach social skills and rules of society (Cohen & Sloan, 2007). These include written scenarios that demonstrate examples of appropriate social behaviors and interactions with others. These can take the form of written word alone or incorporate pictures, photos, or concrete objects to help students understand social situations and to solve problems (Meadan et al., 2011). Social stories are sometimes presented in the form of a comic strip. These visuals use cartoon figures in a sequence of pictures that represent a desired behavior. They are used as positive behavior supports for students who have trouble understanding appropriate social rules (Cohen & Sloan, 2007).

Power cards are another visual that supports a student's positive behaviors. These can be carried by the student throughout his day. The cards can be individualized with a student's favorite superhero or cartoon character that 'reminds' him of important strategies such as how

to calm down, proper words to use, behaviors to remember, conversation starters, or communication tools (Cohen & Sloan, 2007).

Video modeling can be helpful for students with ASD to see others acting out the appropriate social scenarios that they need to become familiar with. Seeing peers involved in activities will reinforce instruction and help with generalization of skills (Heflin & Alaimo, 2007). It is also helpful to record students engaging in activities so they can see what they look like. This can be accomplished as a fun activity with the use of peer modeling as part of instruction.

Social scripts are often used as a communication tool for students with language deficits. The most commonly used strategy is the Picture Exchange Communication System (PECS) which uses pictures and words to teach intentional communication (Heflin & Alaimo, 2007). Students can also benefit from using simple pictures with words or sentences that they can present to others at school to communicate needs or questions. An alternate form of visual communication is the movement-based system of American Sign Language. Other physical communication can be seen in gestures, facial expressions, and body language. It is important that the strategies students use for communication are selected that can be easily understood by the community in which they are used (Tissot & Evans, 2003).

Discussion

Although there have been studies that support the use of visual supports for students with ASD, the general opinion is that further research would be beneficial to educators. Schneider and Goldstein (2009) recommended further evaluation of the difference between sequential and non-sequential routines in the use of social stories as well as the use of visual schedules coupled with social stories. There is a need for more specific studies of visual interventions,

and more follow-up on studies already conducted. There is also a need for more evidence concerning the success of visual supports in providing for generalization and maintenance of skills. There is potential in using visual strategies for these purposes, so this is an area that could be of great use in the future and requires further research.

The goal of finding effective and efficient interventions for students with ASD is a daunting one. There is no cure for autism, which punctuates the drive behind research for more interventions and strategies to help our students (Volkmar et al., 2005). As the prevalence of autism rises, we will be even more compelled to look for answers. The research of visual supports must continue to "help educate and confirm to teachers, parents and caregivers that these are crucial tools in the daily life of a person with autism" (Rao & Gagie, 2006).

I have and will continue to use visual strategies as part of my instruction in my professional capacity. I use visual teaching tools throughout my day. These include schedules, reinforcement charts, reminder cards and power cards, graphic organizers, manipulatives, communication tools, charts, checklists, timers, social stories, scripts, and videos to name a few. Since I am a visual learner, I find it easier to teach by using visual supports. The students I work with respond well with visual schedules and teaching supports. I find that a simple picture with one word beneath it can be a great reminder of certain behaviors that can be non-intrusive and a quiet reminder; i.e. a stop sign with the word stop or a picture of someone with a finger at their lips with the word "quiet" beneath it.

I will continue to use visual supports and add new strategies to my ever-increasing tool box for use in my classroom. It is important to keep our students' individual learning styles in mind

when planning instructional supports. Each student responds differently to instruction so we need to continually assess the effectiveness of our interventions.

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