

Superheroes social skills training, Rethink Autism internet interventions, parent training, EBP classroom training, functional behavior assessment: A autism spectrum disorder, evidence based (EBP) training track for school psychologists

US Office of Education Personnel Preparation Project: H325K120306

Principle Investigators:

William R. Jenson, PhD
Elaine Clark, PhD

Grant Director

Julia Hood, PhD

University of Utah
Department of Educational Psychology
School Psychology Program

Paper by Angelisa Smith Roper

Autism and Social Skills:

A short review of selected works of Scott Bellini, Carol Gray, and Michelle Garcia Winner

Introduction

Autism Spectrum Disorder

Autism Spectrum Disorders (ASDs) are neurodevelopmental disorders characterized by impaired social interactions, communication deficits, and patterns of restricted or repetitive behaviors (American Psychiatric Association, 2000). They are classified by the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) as one of the subtypes of autistic disorder, Asperger's syndrome, Rett syndrome, childhood disintegrative disorder and pervasive developmental disorder not otherwise specified (PDD-NOS). ASDs occur in all racial and socioeconomic backgrounds and have historically been more commonly diagnosed in boys than in girls. It has been estimated that on average, 1 in 88 children in the United States have been identified as having ASDs (Centers for Disease Control and Prevention, 2009) and that rate is increasing (Fombone, 2005). Currently, the cause of Autism Spectrum Disorder is unknown, but research has shown that inherited genes may play a major role in developing ASD. Along with genetics, ASDs may be influenced by environmental factors (Myers, Johnson, & Council on Children with Disabilities, 2007).

Individuals with ASD commonly have difficulty expressing and communicating their thoughts and emotions resulting in the presence of impaired verbal and nonverbal social interaction. Individuals with ASD often experience a co-morbidity with anxiety, attention, mood, and conduct disorders (Reaven, 2009) and adolescents and adults with ASD often show a lower incidence of friendships and participate in less social activities when compared to peers without ASD (Orsmond, Krauss, & Selzer, 2004). Putting individuals with ASD in social situations

where they may have a fear of being humiliated or embarrassed (Kuusikko, 2008) may lead to negative effects in social functioning such as temper tantrums or total withdrawal from a given situation that could impact daily activities and possible relationships at home and within the community.

Social Skills and ASD

Individuals with ASD experience social impairments such as a lack of shared enjoyment, trouble with perspective taking, difficulty maintaining or initiating social interactions, or the lack of or inappropriate use of nonverbal body language. These deficits in social skills make interacting with peers more difficult for individuals with Autism Spectrum Disorder (Bellini, Peters, Benner & Hopf, 2007). Other impairments such as social play, restricted or rigid interests, and impaired communication skills could limit opportunities to establish positive and long-lasting social relationships with others.

Social skills have been defined as goal-directed, learned behaviors that allow one to effectively interact and function in a variety of social contexts (Greenspan, 1980). Social skills also explain verbal and nonverbal behaviors a person uses to interact with others so that the encounter is mutually beneficial and reinforcing. The goal of social skills training is to help individuals make friends, establish relationships, and have appropriate social interactions. As a whole, research in social skills groups for children with ASD indicates that there is a need to develop effective interventions to elicit growth in social interaction and communication with others.

Purpose

While touching briefly on characteristics and criteria of ASD, the purpose of this monograph will be to focus on three, research-based concepts that encourage building social

skills and improving social cognitive deficits within individuals with ASD. Specifically, this monograph will first touch on Scott Bellini's research on teaching social skills within the ASD community with special focus on his book, *Building Social Relationships* (2006). Secondly, this paper will also discuss the updated version of Carol Gray's *Social Stories™* criteria (2004). Finally, this paper will comment on Michelle Garcia Winner's work on the development of a social thinking skills curriculum for school-age students and use of social skills comic books to teach valuable life skills to those with ASD. In addition, it will also briefly address current supporting research of how to best serve ASD children with social skill deficits.

When reviewing the social skills programs and interventions mentioned above, this monograph will also cite research on whether Evidence Based Practice (EBP) Standards were a strong factor in each program and suggested intervention. EBP should take into consideration the strength of the research results and only include interventions that show beneficial outcomes. It should also include the professional judgment of those who are experts in the field of ASD and what their opinions of the interventions are. One often overlooked, but extremely important component of EBP is the consideration of the values and preferences of the parents and caregivers towards the intervention. If the intervention looks promising on paper, but is not applicable for a parent to do at home, with a busy schedule and no previous training, it will not be effective. Parents, caregivers, and teachers must feel invested in the intervention to make it work.

According to the National Autism Center's National Standards Report (NAC, 2009), the best way to determine if a treatment or intervention is effective is to look at what research and studies have been conducted and if they have been shown to work in real world settings. The National Standards Project includes three main purposes to assess the effectiveness of various

social skills programs currently being utilized by professionals: 1) identify research currently available for educational and behavioral interventions used with individuals with ASD, 2) to help parents, caregivers, teachers, and other providers the information to make important decisions, and 3) to identify limitations of existing interventions for those with ASD and how to make improvements. The National Standards Report also includes a Strength of Evidence Classification System that is broken into four categories in order to determine how effective a treatment or intervention could be and reflects the “quality, quantity, and consistency of research findings that have been applied specifically to individuals with ASD” (NAC, 2009).

Building Social Relationships

Social skills training should target specific skills rather than more general skills and should be adapted on a case-by-case-basis to fit the individual needs of each child. In order to build healthy social relationships, individuals should learn basic social skills, which Bellini defines as the acquisition of learned behaviors that facilitate positive interactions with peers (Bellini, 2006). Bellini’s social skills program focuses on building nonverbal communication skills, social initiations, reciprocity, social cognition, and perspective taking and self-awareness. His textbook includes a list of chapter learner objectives that describe what information the reader should be able to explain after reading each chapter, key vocabulary terms, and short summaries at the end of each chapter that go over main points discussed.

The textbook also provides chapter review questions and answers to check understanding and can serve as a study guide if the adult using the textbook chooses to test on the material included. Throughout the textbook, Bellini reminds adults who are implementing his social skills program (professionals along with parents or caregivers) to always keep in mind that individuals with Autism Spectrum Disorder (ASD) *want* to establish meaningful social relationships, but

must be taught the necessary skills to do so. He goes on to say that those with ASD must be taught that successful social behaviors are not always appropriate social behaviors and they must learn to distinguish between the two types. He also states reiterates that social success is dependent on one's ability to adapt to their environment and that social interaction skills are not the same as academic skills (Bellini, 2006). He includes his own social skills model that incorporates five steps:

Steps	Implementation
1) Assess Social Functioning	Conduct a thorough assessment of the individual's level of social functioning and start where they need the most assistance
2) Distinguish Between Skill Acquisition and Performance Deficits	Gather information to focus an intervention based on either building skills from a deficit in skill acquisition (the child does not possess the skill so cannot perform it) or performance (the child possesses the skill but does not perform it)
3) Select Intervention Strategies	Strategies should either promote skill acquisition or enhance performance of existing skills
4) Implement Intervention	Work with the individual to decrease their specific deficits and help them succeed
5) Evaluate and Monitor Progress	Collect data in order to see if the intervention has worked or needs to be modified

Step 1: Many social skills programs for individuals with ASD tend to focus only on an intervention and skip the actual assessment of which social skills are already learned and which ones need to be taught. The social functioning evaluation should always be done by a

professional and should include interviews with parents, teachers, and the child, ratings scales, observations, problem identification and analysis, and determining specific goals and objectives.

To collect information from a parent or teacher on social functioning, a professional could ask any number of questions such as, “How many friends does the child seem to have?” or “Describe eye contact during social interactions.” The professional should also focus on social communication concerns by asking a parent or teacher if their child asks many questions, requests assistance or information on a given topic, or their ability to engage in a conversation. Since many of these questions may result in negative or less than ideal answers to the parent, Bellini states it is also important to touch on positively-charged questions such as asking what their child’s talents are, their strengths, and what goals they may have for the children in the future.

Bellini’s child interview differs slightly by focusing on social, emotional, and stereotypical behaviors that might manifest in their behavior. He states that the professional should ask questions relating to friendships (“How many friends do you have? What is a friend? Do people ever do things that bother you?”), emotions (“What kinds of things make you happy? Sad? Lonely?”), and on hobbies or interests the child may have (“How much time do you spend on your interests? Do any sounds bother you? What makes you different/same as other people?”). Additionally, Bellini stresses the importance of asking the child what they think their best quality is, what they like the most about themselves, as well as vice-versa. When children with ASD are asked to problem solve, it is very important that the problem is identified, defined, validated, and analyzed. Bellini believes long-term social skills goals are important but that more short-term objectives should be used to help children with ASD practice and work towards long-term goals.

Step 2: The professional working with an ASD student must understand the difference between a skill acquisition deficit and a performance deficit. According to Bellini, a skill acquisition deficit refers to the absence of a particular skill or behavior (the child cannot perform a skill) while a performance deficit infers that a child knows how to perform the skill but will not. The major benefit of using Bellini's model is that it will help the professional select more specific intervention strategies because it identifies what type of deficit the child is showing and the intervention can begin sooner.

Step 3: After the professional figures out if the social skill deficit is a question of acquisition or performance, they must select an intervention. Interventions should always be tailored to an individual child's needs and focus on enhancing their social skill performance. These could include a number of interventions such as reinforcing strategies such as praise for doing a task well, calming skills such as meditation or deep breathing, environmental modifications such as changing where the student sits or where they are allowed to go in the classroom, and priming for appropriate social behavior.

Step 4: Once an intervention is chosen, Bellini suggests that the professional collect baseline, or background data across settings to see where the student's social interactions initially fall. Then, data should also be collected as the intervention is implemented to see if it is actually an effective way of remediating the social skill deficit. In this step, format must be decided upon (individual, group, class-wide) and materials and resources gathered. Bellini stresses that consistent reinforcement and instant feedback should be provided to the child for their participation in the intervention in order to keep them invested in it. In Bellini's program, when selecting an intervention the professional should keep in mind that generalizing social skills to

multiple settings and situations, with multiple people is an essential aspect for the individual with ASD to maintain the social skills they learned.

Step 5: The last step in Bellini's program is to evaluate an intervention's effectiveness as well as implement progress monitoring techniques. As in the first step, data is collected from interviews, observations, and rating scales and reports. Rating scales provide a measure of what social skills deficits the child was exhibiting at baseline and what changes have happened (if any) since the implementation of the intervention.

Social Stories™

The introduction of Social Stories™ in the early 1990's (Gray & Garand, 1993) has been used as an effective evidence-based intervention to help positively remediate certain social deficits associated with ASD. In her new book (2010), Gray updates from 10 to 10.1 criteria:

1. One Goal
2. Two-Part Discovery
3. Three Parts and a Title
4. FOURmat
5. Five Factors Define Voice and Vocabulary
6. Six Questions Guide Story Development
7. Seven Types of Sentences
8. A Gr-eight Formula
9. Nine Makes it Mine
10. Ten Guides to Editing and Implementation

The first criteria, or main goal of a Social Story™ is to share accurate social information with ASD children in a way that is descriptive, meaningful, and feels safe for them. The second

criteria, or two-part discovery gives a more detailed explanation that a Social Story™ introduces specific activities or daily concepts along with the behavioral expectations associated with those activities and concepts (Gray & Garand, 1993; Agosta, Graetz, Mastropieri, & Scruggs, 2004). Within Gray's guidelines, the third criteria states Social Stories™ must include a title and clear introduction, a detailed body, and a conclusion that accurately summarizes the information (Gray, 2010). When creating or using an appropriate Social Story™, Gray uses a concept she defines as "FOURmat," in which the storyteller must consider length, sentence structure, vocabulary and font style, and organization of text and illustrations.

In the fifth criteria, Gray suggests that Stories should also be told from a first or third person perspective, use accurate spatial tenses (past, present, future), use accurate vocabulary, and include literal accuracy because individuals with ASD often have difficulties understanding metaphors or hypothetical situations.

Along with accurate vocabulary, Gray has created her own Social Story™ vocabulary designed to save time and effort when trying to create a Social Story™ from scratch: Author, always with a capital letter A, refers to the person who researches and develops the Story. The Audience is whom the Author writes for and is most often defined as the individual with ASD. Social Stories™ are capitalized and referred to as such only when the 10.1 criteria are met. Story is capitalized as an abbreviated version of Social Story™ and meets the 10.1 criteria as well. Team refers to parents, caregivers, and professionals who are working together to help an individual with ASD succeed.

In addition, according to Gray's sixth criteria, the story should always answer the where, when, who, what, how and why questions.

According to the seventh criteria, Gray insists that every Social Story™ include seven types of sentences. The first type of sentence is Descriptive that provide details of the thoughts and feelings of another person facing the same situation (e.g. “Some vacations are long, others are short”). The second type of sentence is Perspective and should relate consequences or outcomes of the Story (e.g. “Many people think that nice surprises are fun”). Gray calls the third, fourth and fifth types of sentences Coaching sentences: 1) Coaching the Audience, 2) Coaching the Team, 3) Self-Coaching. Including these coaching, controlled sentences help the child self-regulate and feel in control of choices.

The sixth type of sentence is an Affirmative sentence and these provide statements of social value (Ali & Frederickson, 2006). These sentences consist of partial sentences or cooperative sentences that name responsible people who could help in a given situation or who might be impacted by the choices made in the Story (e.g. “Sometimes a student is absent. *This is okay*. The teacher will give them assignments so they can finish their homework”). Gray calls the seventh and final type of sentence a Partial sentence and this helps the child fill in the blank of what answer they think is socially acceptable (e.g. “Wrapping hides a gift and helps keep it a _____”).

The eighth criteria, or Gr-eight Formula includes a basic equation that defines the relationship between the different types of sentences included in a Social Story™ (Gray, 2004) and the seven types of sentences that fall in either those that describe (Descriptive, Perspective, Affirmative) or coach (Coaching). To use the formula, the Author must take the total number of sentences, add them up, and divide the total number of DESCRIBE sentences by the total number of COACH sentences. To be considered a part of the 10.1 criteria, and thus a Social Story™, the mathematical answer must always be greater than or equal to 2.

In the ninth criteria, Gray also encourages storytellers to use their creativity and that Social Stories™ should be short and to the point, tailored to the individual preferences, talents, and interests of the target so they do not lose the interest of the intended audience. Gray also believes that each Story should be adaptable in terms of what font and size the text are in, where the text is in relation to the page, and where the illustrations are on the page and encourages storytellers to experiment with these items to fit each particular child's needs.

In the tenth and final criteria, when trying to edit and implement Social Stories™ the storyteller should also plan for comprehension levels of the audience, recycle old Stories, mix and match stories to build concepts, and monitor progress and collect data. As is important for children listening to or reading any story, Social Stories™ should have a positive, patient, and supportive tone so that while they are learning important social skills, the children are also entertained. Appendix 1 at the end of this monograph gives an example of one of the 158 Social Stories™ included in the book (2010).

Comic Strip Conversations

Cognitive Behavior Therapy (CBT) is a form of psychotherapy based on three main concepts: 1) Cognitive activity affects behavior, 2) Cognitive activity may be monitored and altered, and 3) Desired behavior change can be influenced by the use of CBT (Dobson & Dozios, 2001). Michelle Garcia Winner's comic strip conversations and Think Social! Curriculum (2005) focus on the use of CBT and how to most effectively assist children with ASD to be successful in the social realm.

Comic strip conversations are visual expressions of communication that show words that express feelings, illustrations that show facial expressions, and include inferences that carry over from one comic square to the next (Gray, 2010). For children with ASD who show some

difficulty with acquisition of a social skill, the comic strip follows a format that is easy to follow and imitate in everyday life. In those children who may have problems with performing certain social skills, comic strips include words that tie in the actions of the story and explain “why” someone feels the way they do.

There are many evidence-based comic-type programs that enhance social skills and other important skills that many neurotypical people take for granted but this monograph will focus on the Superflex® comic book series. This series was created to help children learn more about recognizing their own social behavior and to give strategies to regulate it. A total of three comic books serve as the introduction of the core concepts of Michelle Winner’s social skills program.

The first book in the series, “You are a Social Detective!” introduces children to the concept of Social Thinking. It is broken into three distinct sections that explore school smarts, unexpected behavior, and being a social detective. There is only one social skills concept and corresponding illustration per page to allow those with ASD to focus on the skill presented to them on the page. Along with the comic strip conversations, the back of the book includes a page of definitions to further their understanding of social situations; for example, a Social Detective is defined as someone who uses their eyes, ears, and brains to make a smart guess and figure out what others are presently doing, planning to do next, and what they mean by what they say and do (Winner & Crooke, 2008).

The second and third books in the series introduce the reader to Superflex® (Madrigal & Winner, 2008; 2011). In these two books (packaged together), Superflex® is introduced as a social thinking superhero who helps Social Town residents fight the Team of Unthinkables who work to distract them from using their social skills. Specific examples of members of the Team of Unthinkables could include Glassman, who causes people to have big reactions to small

problems or Space Invader who gets people to invade other's personal space. Each page is its own short Social Story™ and includes a well-defined beginning, middle, and end conclusion.

Within this series of books, the authors use comic strip conversations to help children learn different ways to focus on what behaviors they are expected to exhibit while they are at home or school. Very precise scenarios are written into the comic stories and as the children read, they are presented with various social dilemmas or Unthinkables that Superflex® must work through in order to save the day. Fun facts, tips, and quizzes are included within each short chapter to reinforce concepts being taught and a CD-rom comes with the purchase of each book that includes worksheets that reinforce the social thinking concepts children have been reading about.

Once the first three comic books in the series have been utilized to introduce core concepts, three additional Unthinkables books may be used in any order and can be tailored to fit an individual ASD child's social thinking challenges or interests. Each comic book highlights specific Unthinkables and their powers while also teaching the reader about strategies they can use to overcome other Unthinkables they may encounter in their everyday lives.

Think Social! Curriculum

Michelle Garcia Winner's I LAUGH Model of Social Cognition addresses concepts of appropriate social interaction and breaks them into simple skills that people with Autism Spectrum Disorder (ASD) can follow in order to help them see the bigger picture. The I LAUGH acronym stands for Winner's idea of the important pieces of communicative effectiveness and personal problem solving that should be included in effective interactions. It is broken down as follows:

I	Initiation of Language
L	Listening With Eyes and Brain
A	Abstract and Inferential Language/Communication
U	Understanding Perspective
G	Gestalt Processing (Getting the Big Picture)
H	Humor and Human Relatedness

According to Winner, the “I” in the I LAUGH model stands for Initiation of Language. This concept refers to the ability of a child with ASD to ask for help, whether they know which words are appropriate to use, and when the correct time to use the words would be. Adults are given the suggestions to establish an environment where initiating conversation is expected and create routines so that initiating questions or concerns are not difficult or scary concepts to express.

Winner discusses three concepts to teach children with ASD to initiate conversations: asking for help, determining what words to say to formulate the message, and determining the appropriate time to say certain words or phrases. Professionals are encouraged to evaluate the student’s progress by observing the student in their classroom, asking the children questions about how they seek help, writing related goals and objectives in an IEP, and developing a sequence strategy.

The “L” in the I LAUGH model stands for Listening With Eyes and Brain and refers to those with “quirky” attention spans (Winner, 2000). Within this concept, Winner states children who exhibit some form of auditory processing deficits should be given modified instruction, and

given specific procedures to help them increase their ability to listen attend to spoken information based on their individual case.

The “A” or Abstract and Inferential Language could also be defined as inferring information. In general, inferring is a complicated process because it forces the individual to understand an entire concept and then break it down into smaller segments, predict what will happen in the future from events presented to them in the current moment, and sequence or determine the order of events. One of the core characteristics of ASD is a presentation of rigid, or repetitive thinking, and thus being able to make an inference is often difficult for ASD children to comprehend.

The “U” or Understanding Perspective asks children with ASD to reflect on what behaviors others expect from them and what that means in a social situation. They may find themselves asking, “What do people expect?” and not understand what that question means. In Winner’s social thinking model, ASD children must go one step further after defining the expectation and also ask what that means: “Behave. What does that mean? Communicate. What does that mean? Verbally tell the teacher what I want.”

The “G” in the model refers to Gestalt Processing, or a child’s ability to get the big picture. Instead of fixating on a certain action or feeling, Winner encourages children with ASD to organize their thoughts and actions by creating graphic organizers and assigning priorities to tasks and events during the day that recognize that one task or event may be more important than another. Finally, the last letter of the acronym “H” stands for Humor, in which Winner suggests using as a tool to help establish and maintain real relationships. In other words, if two people can find humor in something mundane or difficult, they will bond over making an otherwise difficult situation into one they can relax and laugh about later on.

Winner designed a social thinking curriculum called *Think Social!* (2005) for school-age students that incorporate her I LAUGH Model of Social Cognition. Winner first defines social communication by breaking it into four short steps: 1) Think about the other person's thoughts and emotions, 2) Use appropriate body language, 3) Use your eyes to watch what others are doing and to show others how you are feeling, 4) Use language to show others you are interested. The curriculum is then divided into eight sections that teach concepts that build on each other to help children establish positive social thinking.

In terms of how often students should be working on social skills curriculum, Winner suggests every day for at least 45 minutes but acknowledges in a school setting, time constraints make it almost impossible to work on a single program for that amount of time, and should be based on individual needs and written into an Individualized Education Plan (IEP). Winner emphasizes throughout her books that the primary tools educators need to be effective teachers are creativity, flexibility, humor, and patience. While her school-based curriculum may not work for every student, it is written to fit all of the mentioned tools and can be adapted to fit each individual ASD child's needs.

Within the social thinking curriculum book there are goals related to social thinking concepts at the end of each section. Each goal is measurable and can be used by educators as a form of data collection. At the same time, the goals help children process information and monitor their social skills progress throughout the use of the goal sheets. Appendix 4 illustrates the type of worksheet included in the curriculum to help students and the adults working with them create goals that can be helpful in collecting usable data.

Supporting Research

Evidence-based practice (EBP) refers to clinical practice that is informed by evidence about interventions, clinical expertise, an individual's needs, values, and preferences and their integration in decision-making about individual care. Within ASD research, a principle goal has always been to identify moderators of the intervention or treatments and should include qualitative as well as quantitative research. Possible concerns with EBP have been generalizability across settings, difficulty in translating changes on outcome measures of daily life, and the need for two or more studies that show the same efficacious treatment results.

Reichow and Volkmar (2010) completed a review of sixty-six studies that delivered social skills interventions to 513 individuals with ASD and used a six-criteria best evidence synthesis to ensure strong methodological rigor. The synthesis was broken into three levels; the first included a general overview of the participants and research designs, the second discussed intervention characteristics (intervention type, intervention density, setting, and target skills and behaviors), and the third level discussed the finding across four different types of interventions.

Reichow and Volkmar found that across age groups, interventions based on applied behavior analysis (ABA) were successful in helping to improve social skills in those with ASD. Findings from the synthesis indicated creating social skills groups was found to be generally positive in most studies but some had inconsistent results or low effects. Many of the social skills studies included in the review suggested that social skills should be one component of many in a "treatment package" and the effects of using *only* social skills are not quite clear.

Carol Gray states that her Social Stories™ are effective in promoting social skills and seem to be associated with improved outcomes when used in general education settings and with target children. Ali and Frederickson (2006) conducted a review of 16 articles, including single

and multiple participant and group evaluation studies, to examine the evidence base of using social stories with individuals with ASD.

Within the single participant studies included in the review, all reported positive results in behavior when using social stories as an intervention, but the majority also cited the use of other interventions in conjunction with the social stories. Within multiple participant studies, the review again reported positive results with other interventions being employed along with social stories. Group evaluation study results were also found to be positive but the authors cautioned that there were many limitations to this study that may have positively biased their results to support the initial hypothesis that using social stories can help modify autistic behavior and enhance personal lives.

The review by Ali and Frederickson also includes a helpful implications section for educational psychology practice that suggests that social stories intervention focuses on partnership and that parent and teacher involvement is key in evaluating the functional effectiveness of social story interventions that are relevant to the individual in a real-world setting.

A more recent review done by Karkhaneh and colleagues (2010) identified six studies that support the effects of Social Stories™ for short-term improvements of the social deficits among school-aged children with autism. The authors suggest that a Social Stories™ intervention may be beneficial to modify target behaviors among high functioning children with ASD, such as social interaction, comprehension, facial emotion learning and labeling, communication skills, and social skills. The authors also suggest that further research is needed to find optimal frequency to get best results and to assess long-term maintenance of using Social Stories™.

In addition, Kokina and Kern (2010) conducted a meta-analysis examining the effect of Social Stories™ as an intervention for students with ASD. The results from the meta-analysis of 18 studies concluded that the two main goals of Social Stories™ should be a reduction of inappropriate behaviors and improvement of social skills. A surprising result from the meta-analysis revealed that using Social Stories™ as an intervention seemed to be more effective when used to target reduction of inappropriate behavior than to actually teach social skills. Kokina and Kern suggest that this result may be because social skill concepts are more abstract than behaviors, thus making it more difficult for students with ASD to understand and interpret.

To support Michelle Garcia Winner's curriculum on social thinking, Croke and colleagues (2007) created a research approach that considered the cognitive knowledge required for one to express social skills. They defined social thinking as something that defined the "why" behind socialization and claimed to have the first brief report from a large multiple baseline single-subject design study of children with ASD.

For their study, researchers included six children with high-functioning autism or Asperger's syndrome and reviewed verbal and nonverbal behaviors that were divided into either "Expected" or "Unexpected." After collecting baseline data, lessons from Winner's *Social Thinking* curriculum were used to address the children's social cognitive deficits. After an intervention of 8 weeks, results from this study suggested that teaching *Social Thinking* curriculum to children with ASD may be an effective approach for increasing positive social behaviors and decreasing the less positive behaviors in this population.

Conclusion

The National Standards Report includes three clearly defined categories of interventions: Established, Unestablished, and Emerging. Those interventions included in the Established category have provided positive evidence based practice effects, the possibility of positive long-term effects, and that the interventions do not harm the participants. Interventions included in the Unestablished category have little to no evidence based practice to support their effectiveness. Emerging interventions included in the NAC's National Standards Report include those that do not have research to support their effectiveness or lack any effects as a positive intervention.

Currently, the National Standards Report includes Social Stories™ under the Story-based Intervention Package comprised of 21 studies with criteria that the included interventions “involve a written description of the situations under which specific behaviors are expected to occur” and has an evidence level considered Established. A Social Skills Package comprised of 16 studies with interventions that “seek to build social interaction skills in children with ASD by targeting basic responses (e.g. eye contact, name response) to complex social skills (e.g. how to initiate or maintain a conversation)” with an evidence level of Emerging. This suggests that more research is needed to examine the overall positive effectiveness of these types of interventions within the ASD population in helping increase social skills and peer interaction.

In closing, this monograph has briefly touched on three, research-based concepts that encourage building social skills and improving social cognitive deficits within individuals with Autism Spectrum Disorder (ASD). In addition, it also briefly addressed current supporting research studies showing how using social thinking curriculum and Social Stories™ could best serve ASD children with social skill deficits and improve their overall social skills abilities in the real world.

References

- Agotsa, E., Graetz, J. E., Mastropieri, M. A., & Scruggs, T. E. (2004). Teacher researcher partnerships to improve social behavior through social stories. *Intervention in School and Clinic*, 39, 276–287
- Ali, S. & Frederickson, N. (2006). Investigating the Evidence Base of Social Stories, *Educational Psychology in Practice*, 22(4), 355-377
- American Psychiatric Association (2000) *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR®)* 4th, Text revision edition. Washington, DC: American Psychiatric Association
- Bellini, S., Peters, J., Benner, L., & Hopf, A. (2007). A Meta-Analysis of School-Based Social Skills Interventions for Children With Autism Spectrum Disorders, *Journal of Remedial and Special Education*, 28(3), 153-162
- Bellini, S. (2007). *Building Social Relationships Textbook Edition: A Systematic Approach to Teaching Social Interaction Skills to Children and Adolescents with Autism Spectrum Disorders and Other Social Difficulties*. AAPC Publishing.
- Centers for Disease Control and Prevention (2009). Retrieved from <http://www.cdc.gov/ncbddd/autism/data.html>
- Crook, P.J., Hendrix, R.E., & Rachman, J.Y. (2007). Brief Report: Measuring the Effectiveness of Teaching Social Thinking to Children with Asperger’s Syndrome (AS) and High Functioning Autism (HFA), *Journal of Autism and Developmental Disorders*, Online publication: DOI 10.1007/s10803-007-0466-1
- Dobson, K., & Dozois, D. (2001). Historical and philosophical basis of cognitive-behavioral therapy. In K. Dobson (Ed.), *Handbook of cognitive-behavioral therapies*, pp. 3–39, New York: Guilford.
- Fombone, E. (2005). Epidemiology of autistic disorder and other pervasive developmental disorders, *Journal of Clinical Psychiatry*, 66, 3-8
- Gray, C. & Garand, J. (1993). Social Stories: Improving Responses of Students with Autism with Accurate Social Information, *Focus on Autistic Behavior* 8(1): 1–10
- Gray, C. (2004). Social Stories 10.0: The new defining criteria & guidelines. *Jenison Autism Journal*, 15(4), 2–21
- Gray, C. (2010). *The new social story book*. Arlington, TX: Future Horizons
- Greenspan, S.I. (1980). Analysis of a 5 1/2-year-old girl: Indications for a dyadic-phallic phase of development, *Journal of the American Psychoanalytic Association*, 28(3), 575-603

- Madrigal, S. & Winner, M.G. (2008). Superflex®: A Superhero Social Thinking Curriculum Package, San Jose CA: Think Social Publishing
- Madrigal, S. & Winner, M.G. (2011). Superflex® Takes on Brain Eater and the Team of Unthinkables San Jose CA: Think Social Publishing
- Myers, S.M., Johnson, C. P. & Council on Children with Disabilities (2007). Management of Children with Autism Spectrum Disorders, *Pediatrics*, 120(5), 1162-1182
- Karkhaneh, M., Clark, B., Ospina M.B., Seida, J.C., Smith, V., & Hartling, L. (2010). Social Stories™ to improve social skills in children with autism spectrum disorder: A systematic review, *Autism*, 14(6), 641-662
- Kokina, A. & Kern, L. (2010). Social Story™ Interventions for Students with Autism Spectrum Disorders: A Meta-Analysis, *Journal of Autism and Developmental Disorders*, 40, 812-826
- Kuusikko, S., Pollock-Wurman, R., Jussila, K. Carter, A.S., Mattila, M.L, Eberling, H., Pauls, D.L, & Moilanean, I. (2008). Social anxiety in high-functioning children and adolescents with Autism and Asperger syndrome, *Journal of Autism and Developmental Disorders*, 38(9), 1697-709
- National Autism Center's National Standards Report (2009). Retrieved from <http://www.nationalautismcenter.org/pdf/NAC%20Standards%20Report.pdf>
- Orsmond, G.I., Krauss, M.W., & Seltzer, M.M (2004). Peer relationships and social and recreational activities among adolescents and adults with autism. *Journal of Autism and Developmental Disorders*, 34, 245-256
- Reaven, J. (2009). Children with High-Functioning Autism Spectrum Disorders and Co-occurring Anxiety Symptoms: Implications for Assessment and Treatment, *Journal for Specialists in Pediatric Nursing*, 14(3), 192-199
- Reichow, B. & Volkmar, F.R. (2010). Social Skills Interventions for Individuals with Autism: Evaluation for Evidence-Based Practices within a Best Evidence Synthesis Framework, *Journal of Autism and Developmental Disorders*, 40, 149-166
- Winner, M.G. (2005). *Think Social! A social thinking curriculum for school-age students*. San Jose CA: Think Social Publishing
- Winner, M.G. (2000). *Inside Out: What Makes a Person with Social Cognitive Deficits Tick?* San Jose CA: Think Social Publishing
- Winner, M.G. & Crooke, P. (2008). *You are a Social Detective: Explaining Social Thinking to Kids*. North River Press Publishing Corporation

Appendix

Appendix 1: Social Story™ Example (credit: Carole Gray)

Story #50

How to Greet Someone

There are many ways to greet someone.

When I see someone I know, especially if I am seeing that person for the first time that day, it's friendly to say "hello." They may say "hello," too. They may stop to talk with me.

Sometimes people shake hands to say "hello." People may try to shake my hand if they are meeting me for the first time. This will happen more and more as I get older.

Once in a while, I go to visit relatives or close friends. A short hug as I arrive means *hello*.

Sometimes, if I am just passing someone I know, I may smile, wave, or just nod my head. If I said hello to that person earlier in the day, smiling, waving, or nodding my head means, *Hello again*. This is a friendly thing to do. ■



Appendix 2: Superflex Takes on the Unthinkables (credit: Michelle Winner)

Rock Brain - I make people get stuck on their ideas.

Glassman - I make people have huge upset reactions.

D.O.F. - I make people overly competitive.

Mean Jean - I get people to act mean and bossy.

Space Invader - I get people to invade other's personal space.

One-Sided Sid - I get people to only talk about themselves.

Wasfunnyonce - I get people to use humor at the wrong time, the wrong place or with the wrong person.

Brain Eater - I distract people.

Body Snatcher - I move people's bodies from the group.

Energy Hare-y - I give people too much energy.

Topic Twistermeister - I make people jump off topic.

Worry Wall - I make people worry too much.

Un-Wonderer - I don't like people to socially wonder about others.

Grump Grompaning - I put people in grumpy moods.

SUPERFLEX
takes on the Unthinkables!

Superflex helps a citizen be a more flexible thinker, which allows the person to better control his or her brain and change how he or she thinks. He helps a citizen think about how to act and behave to keep others (and himself/herself) feeling good. He helps a citizen be a better problem-solver by thinking of many different solutions to one problem. He helps a citizen notice when an Unthinkable is becoming more active in his brain and then quickly comes up with a strategy to defeat the Unthinkable.

www.socialthinking.com


© 2010 Think Social Publishing

Appendix 3: Superflex Worksheet examples included on CD (credit: Michelle Winner)

Handout #6 Name: _____


You Affect How Others Feel in Social Town

In Handout #4, you learned that chores can get done pretty quickly. This is important because if you're not quick about getting chores done, it not only affects you but also those around you. For example, in the story book, Superflex Takes on Brain Eater and the Team of Unthinkables, Matt's mom and his friend Aiden were frustrated with Matt because he was not staying focused and getting his morning chores done so he could get to school on time. Aiden and Matt's mom were also worried because it looked like Aiden and Matt would have to rush to get to school on time. When everyone tries to do their best with their chores, this makes others in Social Town feel great! Take a look below and add in some of the missing pieces to the form. We call it a Social Behavior Map because it helps us chart how what we do affects others. In this case it shows how doing your chores or not doing your chores makes others feel. Your teacher or parents can help you fill this in if you have trouble. @



Social Behavior Map: Expected Behaviors for Doing a Chore

Expected Behavior	How do others feel? (Can you add more?)	Consequences (Can you add more?)	How do you feel? (Can you add more?)
<ul style="list-style-type: none"> • Your brain stays focused on each step of the chore. • After one chore is done, you move onto the next one. • Your body is calm while doing the chore. 	<ul style="list-style-type: none"> • Proud • Happy • Comfortable • Calm 	<ul style="list-style-type: none"> • People may compliment you on the great job you're doing. 	<ul style="list-style-type: none"> • Great! • Proud • Calm

Look on the next page for unexpected behaviors 

© 2012 Think Social Publishing, Inc. • www.socialthinking.com



Social Behavior Map: Unexpected Behaviors for Doing a Chore

Unexpected Behavior	How do others feel? (Can you add more?)	Consequences (Can you add more?)	How do you feel? (Can you add more?)
<ul style="list-style-type: none"> You quickly finish a chore and skip steps. Your brain gets distracted with items around the house (for example, a computer or books). Your body wanders away from the chore. Your body has too much energy when doing your chore. You complain a lot about doing the chore. 	<ul style="list-style-type: none"> Worried Stressed 	<ul style="list-style-type: none"> People may have to use a "nagging" voice. You may lose privileges. 	<ul style="list-style-type: none"> Frustrated Sad




Extra Credit: What do you think your Superflex Academy teacher thought about you staying focused to finish your Superflex Handout chore?

(Your teacher will let you know.)

Superflex Points

Teacher circles: 1 Superflex Point Try again ~ 1 Superflex Point 1 Extra Superflex Point

Appendix 4: Think Social! Curriculum Goal Worksheet example (Credit: Michelle Winner)

Goal #	Goal Suggestions
1-5	<p>When getting frustrated, the student will determine the size of the problem (big problem, little problem), describe their own and others emotional reactions to problems based on the size and then minimize their own emotional response to problems they acknowledge to be relatively small, ____% of intervention session, and then using these concepts beyond the intervention room ____% of the time.</p>
	<p>1-5a Given a situation that involves a “glitch” or problem that is frustrating to the student, _____ will accurately determine the size of the problem (big problem, little problem), ____% within the intervention setting.</p>
	<p><i>Take this skill beyond the intervention setting: There the student is expected to determine the “appropriate” size of a frustrating situation ((big problem/little problem) when asked to evaluate the situation by his teachers or parents, ____ % of the time.</i></p>
1-5b	<p>When in a frustrating situation, _____ will describe his/her own emotional reactions to their own problems based on the perceived size of the problem, ____% of the time within the intervention setting.</p>
1-5c	<p>When in a frustrating situation, _____ will describe other people’s emotional reactions to their own problems based on the perceived size of the problem, ____% of the time within the intervention setting.</p>
	<p><i>Take this skill beyond the intervention setting: There the student is expected to describe the emotional reactions of himself or others based upon the size of the problem encountered, when asked by teachers or parents, ____ % of the time.</i></p>
1-5d	<p>When faced with a “small” problem or glitch, _____ will display a minimized emotional response to problems they acknowledge to be relatively small, ____% within an intervention session.</p>
	<p><i>Take this skill beyond the intervention setting: There the student is expected to display a minimized emotional response to a “small” problem, ____ % of the time.</i></p>