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*Intervention in School and Clinic* published online 10 October 2011
DOI: 10.1177/1053451211423819

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What is This?
Case Studies on Using Strengths and Interests to Address the Needs of Students With Autism Spectrum Disorders

Aaron Lanou¹, Lauren Hough², and Elizabeth Powell³

Abstract
Students on the autism spectrum present with difficulties in a variety of areas, including social understanding, emotional regulation, academics, and behavior. Professionals working in the field of autism must identify and address these areas of need given each individual child’s specific cognitive profiles. In this article the authors highlight not only the importance of addressing these areas of difficulty but also the significance and power of recognizing and incorporating each child’s unique strengths, interests, and talents to accomplish this. The authors present strategies created for individual students with autism spectrum disorders in upper elementary classes that capitalized on the students’ authentic interests and strengths as a way of meeting their school-based challenges. Through these passions, the authors were able to tap into students’ own motivation and true abilities, laying the foundation for success.

Keywords
Asperger syndrome, autism spectrum disorders, instructional practices, academics, social relatedness, strengths

As early as 1944, Hans Asperger recognized that many individuals on the autism spectrum had a “particular originality of thought and experience” (Asperger, 1944/1991, p. 37). While exploring the challenges of an autism spectrum disorder, Asperger also appreciated the strengths inherent in these individuals’ unique thought processes. When working

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with students on the autism spectrum, it is crucial that educators understand and address deficits associated with the disorder. However, it is equally important to identify students’ individual strengths and talents to leverage them to ameliorate the students’ relative weaknesses (Boyd, Conroy, Mancil, Nakao, & Alter, 2007; Klin, Danovitch, Merz, & Volkmar, 2007). Educators can embrace students’ unique humor, idiosyncratic interests, and seemingly “nonfunctional” behaviors to motivate them in meeting challenging social and academic expectations while also increasing their confidence and independence. Higher functioning students with autism spectrum disorders (ASD) are widely acknowledged as having difficulties with social relatedness, pragmatic language, and perspective taking (American Psychiatric Association, 2000). These challenges can affect a student’s ability to interact with others in accordance with social expectations. This has significant ramifications in a classroom where such social skills are necessary to work alongside peers and access the general education curriculum (Gena, 2006). As research into these characteristics continues to develop, there is a growing movement exploring the unique strengths and interests of students with ASD (Kluth & Schwarz, 2008). Teachers working with this population should regularly consider how to incorporate students’ individual skills and interests into strategies to address these social and language deficits.

The strategies outlined in this article were implemented in an inclusive classroom for higher functioning students on the autism spectrum (for additional information on this inclusion program, see Koenig, Bleiweiss, Brennan, Cohen, & Siegel, 2009). In this type of collaborative program, both the classroom environment and the instructional practices are designed to address the specific needs of individuals on the spectrum while the grade curriculum is taught. Elizabeth and Aaron taught the fifth-grade inclusion classroom and consulted regularly with Lauren, a special education teacher who worked within the program. Students discussed in this column were members of this class and worked with this team (see Note 1).

The students for whom the strategies were designed, like many individuals on the spectrum, were creative thinkers with strengths in visual processing, logical reasoning, and attention to detail. However, the students also demonstrated difficulties with certain academic skills and social-emotional regulation and exhibited challenging classroom behaviors (Koenig et al., 2009; Whitby & Mancil, 2009). Given these profiles, the team collaborated to develop strategies based on research-supported best practices that addressed the students’ needs while simultaneously building on their unique strengths and interests. This focus guided the design of the following individualized strategies:

1. An academic strategy to encourage self-monitoring during writing activities
2. An emotional self-regulation strategy to develop skills for self-monitoring throughout the school day
3. A social strategy to clarify “hidden” social expectations
4. A behavioral strategy to provide motivation for respecting clearly defined behavioral rules

The primary objective was to address individual areas of need to facilitate greater access to the curriculum. However, a driving force in designing the strategies was to tailor them to the students’ interests and unique personalities. Rather than working around the students’ so-called “perseverations” (i.e., narrow, stereotyped interests), the strategies capitalized on the strengths inherent in such focused fascinations. In sharing these strategies, the goal is not to provide cookie-cutter ideas to be used exactly as described here. Rather, the purpose of this article is to present examples from a novel framework to help address student needs. The framework is meant to guide educators to capitalize on students’ specific strengths to support their students’ social, academic, behavioral, or emotional growth.

**Academic Strategy**

**The Horseradish Chart**

Chuck was a thoroughly creative student. He delighted his teachers with both his wit and his intricate drawing of maps. He was imaginative and engaged, which made his struggles in school all the more difficult to endure. Chuck struggled with schoolwork and was unable to communicate if tasks were too challenging, confusing, or uninteresting. When feeling unsuccessful, Chuck would melt down, requiring a break that could last several class periods. Writing was consistently difficult, as he found many elements of the required writing curriculum overwhelming. Chuck was unable to plan his stories, meet publishing deadlines, or even begin writing assignments. Although he had a distinctive writing voice and an impressive mastery of mechanics, he became overwhelmed before he could get his ideas on paper. Writing, a “basic” skill fundamental to so many academic exercises, became a significant stumbling block for Chuck. As a result, Chuck associated writing tasks with feelings of frustration, insecurity, and failure.

To help Chuck realize his talent and improve his relationship with writing, the team developed a self-monitoring system that motivated him while also facilitating communication with teachers. Self-monitoring and regulating emotions are skills that can often be challenging for students on the autism spectrum. Students can also have difficulty recognizing their emotional state or the relative intensity of a feeling they are experiencing (Attwood, 2007). For example, students may not be able to identify whether they are bored or angry. They may also be unable to identify their level of frustration about
a task, whether it is mild annoyance or extreme frustration, leading to equally intense breakdowns over the loss of a pencil and a difficulty with a complex assignment. In addition, students often do not recognize confusion and fail to ask for assistance from an adult, as they may not be fully aware that help is needed (Myles & Adreon, 2001).

To help Chuck self-monitor and ask for help before minor frustrations escalated, the team decided to capitalize on his original thinking and interest in drawing. With significant input from Chuck, the team designed a system that he named the “Horseradish Chart.” During writing, Chuck frequently doodled in his notebook. Once, when asked about his drawings, he shared a series of four designs: small and large squiggly lines, a horseradish, and what looked like a house but which Chuck referred to as “box with a triangle on it.” He explained that the sequence of four drawings represented a scale from negative to positive. This self-generated system was then implemented as a tool for Chuck to use during writing (see Figure 1). The team related Chuck’s four doodles to a familiar visual Five Point Scale (a strategy developed by Buron & Curtis, 2003). Chuck identified that these figures could stand for levels of his own writing confidence.

Chuck used this Horseradish Chart during writing. He reflected on his feelings about his writing and marked where he was on his chart 5 min into the period. The “square with a triangle on top” served as the highest level of accomplishment, indicating that he was excited and working on an enjoyable piece. The horseradish root occupied the third level, corresponding with feelings of contentment and competence. The large squiggly line represented the second level, indicating frustration, signaling to his teachers that he was struggling and required assistance. The lowest level on the scale was the small squiggly line. If Chuck marked this level, he was identifying feelings of severe frustration and that he required a temporary break from the activity. Chuck had previously received instruction to develop calming strategies to help him self-regulate on a break, which he could employ independently at this time.

This strategy incorporated his own interests and ideas, making it meaningful, appealing, and motivating. The drawings were favorite doodles, and the horseradish, a fascination from a favorite video game, was intrinsically motivating. The placement of the horseradish at the third level of the scale—a realistic goal—also took into account Chuck’s self-esteem and perception of his writing ability. With this chart, the teachers saw an increase in both his writing stamina and productivity during writing periods, and he began completing assignments along with his peers. The Horseradish Chart also allowed him to communicate his feelings. Teachers intervened only when he placed himself on the squiggly line, the lowest level, so they could remind him to access his bank of calming strategies or ask for help from a teacher or peer. This strategy evolved to a point where teachers could light-heartedly encourage him at times of distress with something as simple as, “Well, Chuck, let’s shoot for horseradish!”

Social and Emotional Strategies
The Success-O-Graph

Eli genuinely adored math. He challenged his peers and teachers alike, even commenting to a teacher after her turn in a math game, “That was kind of lame—let’s see what the ‘Eli-nator’ can do.” But Eli was also a student who rapidly fluctuated between emotional extremes. One moment he would be happy and energetic, the next he would become withdrawn and anxious after the slightest frustration with a classmate or assignment. He was extremely self-critical and unable to forgive himself for any failure. His entire day at school could be affected by a meltdown. Discussions aimed at highlighting past successes did little to alleviate his negative self-image.

Students on the spectrum often operate in extremes; the world to them is either black or white, with no shades of grey (Gutstein & Sheely, 2002). They can also react very strongly to seemingly small issues, causing “meltdowns” that can be difficult to recover from (Myles & Southwick, 1999). Similar to many students on the spectrum, Eli became hyper-focused on negative memories and overlooked positive ones (Attwood, 2007). His parents and teachers became concerned about the intensity and impact of his meltdowns.

Figure 1. The Horseradish Chart

Figure 2. An example of Eli’s Success-O-Graph
A system was needed to help Eli recognize and retain his many positive experiences throughout the day. With both his strength in math and humor in mind, the team developed “Eli’s Success-O-Graph.”

Though the title was silly, the idea was simple: a two-quadrant coordinate grid, posted above his desk, with a plus sign at the top of the vertical axis and a minus at the bottom (see Figure 2). Eli was told, “You’re going to track how successful you feel throughout the day, just to see what the graph looks like. Sometimes when you’re working, we’ll ask you to put a dot on the graph.” Positive feelings would go well above the horizontal axis, OK feelings just above it, not-so-good feelings just below the line, and really unsuccessful feelings far below it. The goal was to encourage Eli to recognize and evaluate the intensity of his feelings during school. With increased self-awareness, the team hoped to highlight Eli’s positive memories.

Eli responded to the system. He marked his graph one or two times a day, sometimes randomly, other times to highlight an observed moment of success. Eli appeared to give genuine thought to his feelings, marking his graph accordingly. Within weeks, he started adding marks independently, sometimes pointing this out to a teacher and other times simply doing it for himself. He soon identified that he had positive feelings in school—and there was tangible proof, right on his desk. The graph quantified how frequently he felt successful in school. Prior to this intervention, Eli’s meltdowns, consisting of crying, verbalizations of inadequacy, and social withdrawal, had occurred roughly once or twice per week and could last more than 50 min. Although times of frustration continued at the same frequency after the graph strategy was initially implemented, their intensity decreased and his recovery time improved. Eli was now able to use a calming strategy, take a short 5-min break, and return to activities with a minimized impact to the remainder of his day. Self-monitoring, Eli recognized and focused on his successes, rather than focusing solely on the challenging moments.

**Iceberg Cue**

Jimmy loved learning about the RMS Titanic. During nonfiction reading, he scoured books for elaborate illustrations or information regarding the Titanic, bringing in books from his local library as additional resources. He could recount the details of its construction, the history of its maiden voyage, and the theories of how it sank. Although Jimmy excelled during these times of research and reading, he struggled interacting with his classmates. His teachers frequently heard frustrated, repeated pleas, “Jimmy, move!” It was common for Jimmy to bump into classmates or stand too close to them in line; he tended to encroach on others’ personal space, standing too close when talking to people or trying to whisper in their ears at inappropriate times. When sitting with his peers, he would lean his body or move his chair, making people clearly uncomfortable with his proximity.

Limited self-awareness, organizational skills, and perspective taking can cause academic problems for students with ASD. In addition, many of our students have social challenges that can affect their success at school (Harbinson & Alexander, 2009). Because of an impaired ability to read nonverbal cues or take the perspective of others, students on the spectrum may not recognize another person’s need for personal space, for example, and they may fail to regulate their movements accordingly (Attwood, 2007). To encourage Jimmy to change his behavior after considering the perspectives of others, the team designed a strategy featuring the Titanic that appealed to both Jimmy’s cognitive abilities as well as his personal interest (see Figure 3).

We used the motivating theme of the Titanic to create a visual reminder strategy built around his topic of interest. The
underlying concept was to compare the Titanic’s collision with an iceberg to his infringement on another’s personal space: Just as the Titanic was threatened by its proximity to icebergs, his own proximity to his classmates could be problematic—he could make other people upset, and it had the potential to incite a physical response from peers.

The intervention was based on core ideas in the Power Card Strategy developed by Elisa Gagnon (2001). Power cards use visual supports that incorporate students’ interests to clarify social situations and offer coping strategies. The team wrote a short story about the iceberg that caused the Titanic to sink. Many historical facts about the Titanic from Jimmy’s extensive personal knowledge were incorporated. Bridging the historical information and the current social problem, the story explained personal space. To increase perspective taking, the story highlighted and explained the thoughts and feelings of others when personal space is infringed. The story closed with a verbal reminder phrase: “Iceberg right ahead!” After introducing the story, Jimmy received a visual “Iceberg Reminder Card,” with a picture of an iceberg on the front and an abbreviated story on the back for easy reference. Jimmy reviewed the story daily, and both visual and auditory cues were used to reinforce the strategy throughout the day. Copies of the card were posted at his line-up spot and desk so he could reference them when necessary. Both teachers and students also used the “iceberg right ahead” language as a reminder when he was getting too close.

After this intervention, there was a dramatic decrease in the number of complaints regarding Jimmy invading peers’ space. Jimmy was also able to explain the importance of personal space, and he responded to both teachers’ and peers’ occasional reminders. One reason this strategy may have been effective was that the story used a motivating interest to clarify an unwritten social expectation, and the card was also available to provide visual support at necessary times of the day. This strategy was also paired with social explanations of other people’s thoughts that addressed his weak perspective-taking and clarified an otherwise unwritten social expectation. It also incorporated peers, who provided immediate feedback in the natural context of the classroom, promoting generalization. Fundamental to this strategy, however, was its use of a motivating interest, which may have increased Jimmy’s willingness to participate in conversations that could have otherwise been uncomfortable.

**Behavioral Strategy**

**Behavioral Rubric**

Devin was another incredibly strong math student. He loved being challenged with complex problems and even spent a full hour absorbed in finding patterns to explain the relationship between square numbers. Though he had many strengths and sophisticated fascinations, Devin also had extensive academic, behavioral, and social difficulties. He frequently refused to do classroom work, claiming that it was “boring” or assigned “just to torture [him]!” He was disruptive during minilessons, calling out and arguing with the teacher, and was frequently unable to begin seatwork independently. His behaviors not only affected his ability to complete work but also seriously disrupted the classroom environment. Many visual strategies and task modifications had been unsuccessful at improving his behavior in the past, and the team recognized a need for a more comprehensive, behaviorally based intervention.

Many students on the autism spectrum display challenging behaviors, such as work refusal or avoidance that can affect their ability to access and participate in the general education curriculum (Myles & Adreon, 2001). These interfering behaviors may enable the student to avoid challenging assignments or obtain teacher or peer attention (Horner,
Carr, Strain, Todd, & Reed, 2002). Through functional assessments, teachers can establish the reasoning behind these behaviors and implement interventions to increase appropriate behaviors and decrease challenging behaviors. Research has shown that individualized behavior systems can be effective interventions to address challenging behaviors (Crimmins, Smith, & Farrell, 2007).

In creating a behavior system for Devin, the team wanted to capitalize on his strong math ability and therefore devised an individualized behavior rubric that involved multiple rating systems and a complex procedure for calculating points earned. Devin and a peer evaluated his classroom performance on a period-by-period basis (see Figure 4 for a template for one class period). At the end of each period, Devin graded himself on a point scale from zero to two on participation, independent work, and being part of the class. A peer then used the same scale to grade how he or she perceived Devin’s behavior, and the Devin and peer scores for each period were averaged. Devin’s total points were tallied at the end of the day. These points accumulated over the course of the week and could be used toward preferred activities, such as computer time at home or in school.

Although previous interventions were neither motivating nor effective, Devin’s behavior improved following this strategy. He seemed more willing to participate in lessons, and both the amount and quality of his independent work increased. As with previous strategies, this behavior system required that Devin self-monitor and self-evaluate. This strategy may have been effective because, prior to introducing the system, appropriate behaviors were explained explicitly and reviewed in behavioral terms. Devin always knew the behavioral expectation, which is particularly important for students with ASD as they oftentimes cannot infer unstated expectations, and they typically respond to clear, explicit explanations (Myles & Southwick, 1999). Although Devin was graded, the team did not require that he earn all possible points for his reward. Devin could earn 36 points on a “perfect” day, but 30 to 36 points was sufficient to earn his computer time. He worked toward a goal without the stress of having to have a “perfect day.” As with the other strategies, incorporating student interests was an essential component of this intervention. Because of Devin’s fascination with words, the intervention also received a humorous title using classroom vocabulary words: “Devin’s Desperately

Planning Strategies That Incorporate Strengths & Interests:

To plan a motivating strategy, consider following this structure:

1. **List** the strengths, interests, and talents of the student. Challenge yourself to write as many as possible!
2. **Identify** the specific area of need of the student. Is the student’s need behavioral, academic, social, or emotional?
3. **Consider** which research-supported strategies could be used to address the need. Consult recent literature or strategies found in journals like *Intervention in School and Clinic*.
4. **Pair** the strategy with a strength, interest, or talent creatively. Ensure that the interest is an inherent part of the strategy itself to increase the student’s motivation.

Here are some of the strengths and interests our students have shared with us. It was our goal to teach with, through, and about these areas.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Interests</th>
<th>Talents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading stamina</td>
<td>Titanic</td>
<td>Conceiving of imaginary worlds</td>
</tr>
<tr>
<td>Hyperlexia</td>
<td>Sharks</td>
<td>Map making</td>
</tr>
<tr>
<td>Attention to detail</td>
<td>Transportation</td>
<td>Creating silly poems</td>
</tr>
<tr>
<td>Computation</td>
<td>Godzilla</td>
<td>Vocabulary</td>
</tr>
<tr>
<td>Ability to focus on areas of interest</td>
<td>Riddles</td>
<td>Creating collections</td>
</tr>
<tr>
<td>Using the computer</td>
<td>Waste Management</td>
<td>3-D design</td>
</tr>
<tr>
<td>Creativity</td>
<td>Elevators</td>
<td>Creating comics</td>
</tr>
</tbody>
</table>

**Figure 5.** Strengths and interests chart
Triumphant Precious Book of Inquiry and Gratification.” Unlike all of his previous behavior systems, Devin’s first response to this plan was laughter. A final key component of the system was the ongoing averaging and totaling of points, an activity that tapped into his natural ability and interest in math. Having Devin stopping to calculate his points frequently throughout the day also provided a built-in break during which he was able to stop working and engage in a preferred, high-success mathematical task.

To create all of the strategies discussed, we had to change the way we thought about our students. As educators, it is our job to assess students and identify their areas of need, and we are therefore programmed to be disability focused. However, we need to begin to see not only their areas of weakness but also their many, myriad strengths. Our students’ passions can be the key to unlocking their motivation. They must be recognized, respected, and harnessed to motivate and enable our students to both succeed and enjoy their successes. See Figure 5 for a suggested structure to use this interest-focused thinking to help students.

**Conclusion**

The strategies described capitalized on students’ authentic strengths and interests to validate their passions while also increasing motivation and access to the curriculum. In addition, they created natural opportunities for positive peer interaction, as in the cases of both Eli and Devin. As all of the strategies discussed here were clearly created for specific students with their particular interests in mind, these interventions are not intended to be replicated exactly; there may be no other student out there who would find the Horseradish Chart a motivating way to self-monitor. Our intention in sharing these ideas is to demonstrate how individually tailored strategies, designed around students’ strengths and interests, can address a variety of school-based needs. Students with ASD present a variety of academic, social, and behavioral challenges in the school setting, but strategies need not be deficit focused. Interventions can be more motivating—and effective—when teachers remember the importance of considering individuality and choose to channel the power of each student’s natural strengths and interests.

**Acknowledgments**

The authors would like to thank Dr. Shirley Cohen for sharing her expertise and for providing constant support and guidance.

**Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interests with respect to the research, authorship, and/or publication of this article.

**Financial Disclosure/Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

**Note**

1. All of the situations presented in this article are authentic, but names have been changed to pseudonyms to provide anonymity.

**References**


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