Using Problem-Solving Frameworks to Address Challenging Behavior of Students With High-Functioning Autism and/or Asperger Syndrome

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Students with high-functioning autism and/or Asperger Syndrome (HFA/AS) are characterized by difficulties with communication as well as impairments in social interaction skills (American Psychological Association, 2000). Due to impairments in these areas, students with HFA/AS have difficulties interpreting and appropriately responding to social situations. When presented with difficult social situations, students with HFA/AS often struggle with how to proceed or move past these interactions. In addition, research has indicated that many students with HFA/AS use ineffective strategies for problem solving because they may focus on irrelevant information, have difficulty recalling pertinent information, and may not consider outcomes prior to the use of a strategy (Bauminger, 2007; Solomon, Goodlin-Jones, & Anders, 2004). The strategies and solutions used by this population often involve behaviors and actions that are inappropriate and deemed as challenging. Challenging behavior can take many forms for students with HFA/AS, such as inappropriate language (e.g., swearing, yelling, refusal), aggression, and even withdrawal (Hagopian, Kuhn, & Strother, 2009; Macintosh & Dissanayake, 2006; Matson & Nebel-Schwalm, 2007). All of these challenging behaviors can lead to social (Hagopian et al.) and academic deficits (Blakeley-Smith, Carr, Cale, & Owen-DeSchryver, 2009) as well as difficulties in long-term outcomes (Howlin, 2005).

Nick, a 12-year-old with a diagnosis of Asperger Syndrome, has had a lot of social difficulties in the last few years. His mother reported that Nick struggled with peers as well as with his siblings. With peers, Nick often would argue and have difficulty reaching common ground when disagreements or miscommunications occurred. When Nick was presented with a problem, he would consistently argue or place blame. When he did present his side of the story it would typically be one-sided and not represent any perspective other than his own. His mother also reported that with his brother (14 years) and sister (11 years), Nick had daily confrontations that would result in verbal and physical aggression by both Nick and his siblings. Nick's teachers and parents identified him as continuing to use ineffective and sometimes inappropriate solutions to common problems, even though previously these solutions had led to negative outcomes. To address this, his teacher taught Nick and his family to use both an intermediate problem-solving framework and, subsequently, an advanced framework targeting complex perspective taking. Like his classmates who had used similar frameworks, he improved in his abilities to appropriately break down key components of problems, consider multiple perspectives, and create plausible solutions. Through the use of a consistent problem-solving framework that he can repeatedly access, Nick learned how to generate and analyze possible solutions and their outcomes to not only determine which outcomes met his needs, but also which ones best prevented future situations.

Nick's situation is quite common for students with HFA/AS: the struggle with everyday problems and social situations (Channon, Charman, Heap, Crawford, & Rios, 2001). Despite being able to articulate the issues he was having, Nick was not able to negotiate the steps to solve his problem and collaborate with others. The ability to analyze a problem and systematically determine the best way to handle the problem is a skill needed throughout life. Problem-solving strategies are most likely to be used as a secondary-tier intervention for those with challenging behaviors. Students who are unable to successfully learn strategies to solve problems through general instructional methods may require additional supports and more specialized instruction. These tools are also appropriate for and can be adapted to meet the needs of general education students. However, when using it for general education students it may be appropriate to reduce the intensity of instruction (e.g., repetition), and it may make sense to use their own problems sooner in the process.

Many students with HFA/AS are eligible for secondary-tier interventions because they may not respond as well to general strategies or classroom-wide instruction. Students with HFA/AS often need to be specifically taught strategies to solve problems; however, most traditional classroom-based or on-the-spot interventions merely provide these students with solutions.

Students with HFA/AS have been shown to generate solutions that are lower quality (e.g., less socially appropriate) than those of their typical peers and also to have difficulty judging the quality of their solutions, which creates repeated performance deficits (Channon et al., 2001). Various interventions have been developed that target problem solving; however, they rarely utilize scaffolded instruction to address the skills involved in analyzing...
Problem-Solving Frameworks

Problem-solving frameworks are typically described as tools that provide students with a process to execute the steps involved in effective problem-solving. These frameworks serve as an outline of steps that include processes allowing the student to repeatedly use them across numerous situations. Tools that incorporate visual supports and organize the process are advantageous because they permit the student to become fluent over time, require fewer supports, and promote more independence (Griffin, Griffin, Fitch, Albera, & Gingras, 2006). The following sections provide descriptions of three models of problem-solving frameworks that have been developed for students with HFA/AS. The models range from basic to advanced in nature and therefore can be used as a continuum for students as they progress in their problem-solving abilities. Within each of the frameworks, students are instructed on how to identify a problem, generate solutions to a problem, and then select the best solution; however, the degree of specificity and complexity of the framework is based on the student’s individual needs, abilities, and levels of experience. Each framework uses scaffolded instruction to first teach the fundamental tools and then increase in complexity as students have more success and become more independent in their abilities. Students with HFA/AS are a heterogeneous group demonstrating a wide variety of skills and abilities; therefore, it is likely younger students or those with less experience with problem solving would be better matched with a basic model of problem solving (e.g., Ready, Set, So, Go), and as students gain more experience and have more success, an intermediate (e.g., UNLOCK) or advanced (e.g., Perspective-Taking House) model would be appropriate.

Basic Framework: Ready, Set, So, Go

The first problem-solving strategy, Ready, Set, So, Go, is a basic framework applicable for students who are younger or have limited experience with generating solutions to problems (see Table 1). The first step of the framework, Ready, involves the student preparing to solve the problem by first identifying who is involved in the situation and defining the problem. Many times a student may view the solution he or she chose as the problem (e.g., I was mad so I hit him); however, it is important that the student can identify the actual problem (e.g., another child took his toy). The next step of the framework, Set, involves the student identifying potential solutions to solve the problem. A student is asked to

Table 1 Steps Involved in Problem-Solving Framework

<table>
<thead>
<tr>
<th>Framework</th>
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<tbody>
<tr>
<td>Basic Framework: Ready, Set, So, Go</td>
<td>Ready: Who is in the situation? What’s the problem? Set: What are some solutions? So: If you do that solution what may happen? Go: Choose the best solution</td>
</tr>
<tr>
<td>Intermediate Framework: UNLOCKING the Problem</td>
<td>Use a self-control strategy to stay calm Name the problem you are facing List your possible solutions to the problem Out the consequences that may happen if you do that solution Choose one solution based on the best outcomes Keep your locker open if you need to remember this solution in the future or need to go back through and find a new solution</td>
</tr>
<tr>
<td>Advanced Framework: Perspective-Taking House</td>
<td>Door: Identify who is in the “house” (situation) House: Identify the issue or problem faced by the people in the house Roles: Identify how much each person seemed to contribute to the situation Ladder: Identify the experiences of each person that may have led to their perspective in the situation Platform: Identify the emotions of each person in the house Roof: Come up with a plan to put the roof back on the house, meaning to solve the current problem and/or help prevent it in the future</td>
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situations, generating solutions, and determining the quality of solutions. A more comprehensive tool is needed that matches instructional strategies to the students’ ability level while also supporting ongoing learning and independence, such as a problem-solving framework.

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identify several things they may do to help the situation with the appropriateness of the solution determined in the following step. For a student new to the framework the number of possible solutions can be reduced to two, then later increased to three or more as they are able to generate solutions with fluency and mastery. Following the generation of solutions, a student is asked So? in relation to each solution and identifies what would happen if he or she were to select the presented solution. A visual of a thumbs-up or thumbs-down is paired with each potential solution. Finally, based on the outcomes identified in the Go step, a student is asked to select the “right one.”

The following is an example of the Ready, Set, So, Go strategy for a 6-year-old named John with HFA/AS (see Figure 1). At the time of intervention, John was having difficulty regulating his behavior when interacting with his teacher. He often would interrupt his teacher when she was otherwise occupied, and at times this would lead to additional challenging behaviors (e.g., yelling, name calling) if he did not receive an immediate response. John was taught the basic steps of the framework through the use of fictional situations he was familiar with from his favorite television shows as well as fictional situations mirroring common problems he faced on a regular basis. Once John demonstrated that he was able to accurately complete the framework with fictional situations, he began to analyze his own problem situations, such as interrupting others, with the assistance of his teacher.

Intermediate Framework: UNLOCKing the Problem

The next framework, UNLOCK, is more advanced than Ready, Set, So, Go because it is more complex in the analysis of presented problem situations (see Table 1). The UNLOCK framework provides students with additional components that address self-regulatory behavior when problem solving by including self-control strategies as well as steps that can ultimately be used as a mental script to independently solve problems.

The first step of the framework involves using a self-control strategy such as taking a deep breath, counting to 10, or taking a walk. Students with HFA/AS often have difficulties regulating their emotions when presented with a conflict. Prior to using this framework, the teacher discusses with the student what self-control strategies are and what strategies are most appropriate for the student and the context. The second step of the framework, “name the problem,” provides the student with the opportunity to identify the problem at hand. After identifying the problem, a student then is asked to “list solutions” that are possible for the problem. Once solutions are identified the student is then asked to “out the outcomes,” meaning they predict the consequences of their potential solutions. During this process, a student may evaluate several solutions and outcomes, even
**Figure 2** Intermediate Framework: UNLOCKING THE PROBLEM

"Unlocking the Problem"

**Use a self-control strategy:**
- Take a deep breath

**Name the Problem:**
- Who: Me and James
- What: James called me some names

**List your Solutions**
- Tell the teacher
- Call him names back
- Walk away and ignore him

**Out the Consequences**
- He may get in trouble and stop
- He may keep calling me names and I may get in trouble
- He may keep calling me names or he may stop

**Choose one Solution**
- Last time I walked away he kept bugging me, so this time I will tell the teacher

**Keep your Locker Open!**

if these are not the most appropriate, because this is an essential part of the process. Based on the outcomes of the potential solutions, the student will then “choose” the best solution. Once the problem has been solved, the student is reminded to “keep their locker open,” meaning now that the student has solved the problem he or she can refer back to this process and use the successful solution in the future. For more advanced students a rating system can be utilized to assist in organizing the outcomes (e.g., symbol system that indicates choices with positive outcomes, outcomes where they do not get what they want, and outcomes that involved them getting in trouble).

The following is an example of the UNLOCK framework as used by a high school student named James with HFA/AS who has difficulties regulating his emotions when presented with difficult situations with peers (see Figure 2). Often James would react quickly and inappropriately (e.g., trying to ninja-kick his peer) when presented with a situation where he felt a peer was bullying him or someone offended him. Prior to introducing the UNLOCK strategy, James and his teacher generated a list of possible strategies that he could use to calm himself down when he is feeling a heightened emotion. James identified a few calming strategies that had worked for him in the past and then also identified environments in which these were applicable (e.g., take a walk at home, deep breaths at school). Once James was able to understand self-control strategies, he and his teacher worked through several situations that he is often faced with at school to prepare and serve as a “pre-correct” to set him up for success.

**Advanced Framework: Perspective-Taking House**

As adolescent relationships become more complex, the ability to recognize and understand the perspective of another shifts from desirable to a necessary, functional social requirement. However, many students with HFA/AS have deficits in the area of social perspective taking (often referred to as theory of mind), which involves the abilities to infer and respond to the mental states of others (Fisher & Happé, 2006). The following framework provides a means by which perspectives of other students are acknowledged along with one’s own perspective. The Perspective House is a visual strategy that depicts the students in the situation as members who reside in a house whose roof has come off (which represents the issue). Students need to acknowledge the perspectives of others. This is accomplished by providing a concrete analogy of the house and climbing ladders (which represent experiences of others) to work together to solve the issue and put the roof back on (see Table 1). The use of clear visual analogies like this, by which the student is able to tap into their visual strengths to picture the process, has been shown
repeatedly in our experience to provide value added in teaching these kinds of processes.

The student is initially required to identify the problem and who is involved. The student then is asked to identify his or her role and the role of the other person in the problem by identifying how the student's own actions were involved. At times, it is helpful for the teacher to discuss with the student the percentage of the problem for which each person may be responsible. Next, the student identifies the experiences he or she has had that led to the current perspective of the situation. Similarly, the student will attempt to identify the experiences the other person has had that led to his or her perspective. Once the ladders are complete, the student is asked to reflect on his or her emotional status and that of the other person in the situation. Based on all of the information gathered and interpreted, the student then generates a plan to assist either in the problem at hand (as applicable) or similar problems that may arise in the future.

This final advanced framework example takes us back to our first example of Nick and some of the difficulties he faces with his siblings (see Figure 3). Nick's parents reported that Nick often would not understand the impact his behaviors had on his siblings and would only consider how his siblings negatively affected him. When discussing issues, Nick would often assign all of the blame for a given situation to his sibling and suggest that his involvement was only as the victim. As a result of these home interactions, Nick would often characterize himself as a victim whenever any interaction at school did not go as planned or he was given...
constructive feedback. Due to the constant perseveration on home interactions gone wrong and the tendency to repeat those patterns at school, Nick’s teacher determined that addressing this was a priority for school as well. Throughout the framework process with Nick, his teacher and he spent initial sessions discussing what the presented problems are and the roles of both Nick and his sibling in contributing to the problem. Once Nick was able to identify that he had a role and to assign a percentage to that role (e.g., in one situation it was 50/50 for his sibling’s and his involvement), he was able to more accurately identify the perspective of his sibling. Nick was then taught to identify what experiences he and his sister have had in the past that may have led them to have their current feelings and perspectives about the situation. For example, Nick identified that in the past when he has asked his sister to stop something, she did not, and in the past his sister has expressed that she sometimes likes to bother him purposefully. Nick then was able to identify the emotional label associated with his and his sister’s feelings. Finally, he was able to identify a plan to address the issue. The example shown in Figure 3 is from a frequent, weekly after-school problem between Nick and his younger sister, Claudia, regarding music playing at their home. Depicted here (shown in the roof of the house) is the plan Nick developed to address the issues involved setting a schedule for quiet time and music after school.

### Tips for Teaching

When addressing the problem-solving abilities of students with HFA/AS, it is important to target the individual needs of the student (see Table 2). Similar to learning other advanced skills (e.g., mathematics, reading), when acquiring and developing problem-solving skills, students benefit from scaffolded instruction. In order to have success with these skills, students must master the core components before they can move to more complex skills. Through repeated exposure, practice, and increased independence with the fundamental skills students can then move forward in the use of more complex problem-solving frameworks.

#### Introducing and Implementing the Framework

The use of problem-solving frameworks should be introduced to students at neutral times rather than when they are upset. For example, if these frameworks are only used in crisis situations, students may not learn how to rationally and independently use these tools as preventative measures. Additionally, if these frameworks are only presented when problem behaviors are occurring, students may not have enough opportunities to practice and become fluent, thus minimizing mastery and a feeling of success. Instruction should also begin with fictional examples, rather than beginning with a focus on students’ present issues or problems. If instruction begins with or utilizes too early the student’s own problems, they may become defensive or may be too upset to examine the situation logically. Once students have mastered neutral, fictional situations, problems that mirror their own common problems can be incorporated, with or without fictional characters as the primary individuals involved. Once students are able to logically and masterfully analyze situations similar to their own, the students’ actual problem situations can begin to be used with these frameworks. During the instructional sessions, students’ emotional states should be monitored when discussing their problems because emotionally heightened reactions by the student may inhibit their ability to work through their problem scenarios successfully. For example, if a student becomes emotionally stressed, it may be helpful for the student to access a break or engage in a calming strategy (if applicable). For those students with difficulties regulating their emotional status, this topic itself may be one that is appropriate to analyze within a problem-solving framework (e.g., what makes them feel that way, and what can they do when that emotion is evoked?).

### Table 2 Teacher Tips for Problem Solving

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**Monitoring Progress**

It is essential that the teacher monitors students' progress in using the specific framework appropriately and independently. Students should be provided with self-monitoring opportunities to assess their progress and reflect on how they handled problems both prior to and following use of the frameworks. It is essential to remember these are skills that are difficult to address and generalization is not immediate; therefore, programming for these students should be planned over a period of time, including opportunities for generalization to natural settings.

The use of problem-solving frameworks can increase a student's ability to independently and successfully maneuver through their daily lives and interactions. Many times, students default to solutions or behaviors that are ineffective, inappropriate, and problematic. The use of challenging behavior to address problem situations is common in students with HFA/AS who may have not been taught the skills involved in breaking down and analyzing problem situations. To address challenging behaviors, educators must be proactive and provide students with tools and methods they can use independently and across situations to increase their chances of success across settings and contexts.

**REFERENCES**


