Planning a Comprehensive Program for Students with Autism Spectrum Disorders Using Evidence-Based Practices

Brenda Smith Myles
University of Kansas

Barry G. Grossman and Ruth Aspy
The Ziggurat Group

Shawn A. Henry and Amy Bixler Coffin
Ohio Center for Autism and Low Incidence

Abstract: This article outlines two compatible models of planning and implementing programs for students with autism spectrum disorders (ASD). The Ziggurat Model begins the process with an assessment of student strengths and concerns related specifically to ASD and identifies interventions across five tiers that match these strengths and concerns: (a) sensory and biological, (b) reinforcement, (c) structural and visual/tactile supports, (d) task demands, and (e) skills to teach. Content from the Ziggurat Model is then placed with the Comprehensive Autism Planning System (CAPS) to allow the student's day to be operationalized and matched to student goals, state standards, and related benchmarks. This article overviews this process and offers a brief case study as an example.

As educators and parents strive to develop meaningful educational opportunities for individuals with autism spectrum disorders (ASD), it is important to begin with a thorough understanding of the student's needs, especially those related to the underlying characteristics of ASD. Next, a comprehensive daily schedule for the student is critical. A schedule should embed the supports needed for success as well as continual development of student skills and measurement of those skills with a vision of how this will affect the student now and in the future (Mesibov & Shea, 2006; National Research Council, 2001) This is achieved through well-organized planning with clearly defined objectives and goals.

Far-reaching changes have occurred in the educational system in recent years, beginning with the No Child Left Behind (NCLB) Act. This legislation was designed to increase student achievement through accountability and scientifically based instruction provided by highly qualified and effective teachers (U.S. Department of Education, 2002). Compatible with NCLB are the (a) Response to Instruction (RTI) movement, which emphasizes data-based decision making and problem solving, evidence-based interventions, student performance, and continuous progress; and (b) Statewide Positive Behavior Supports (SWPBS), whose goals are to support (a) students' social and academic competence, (b) student behavior, (c) staff behavior, and (d) decision making (Sugai & Horner, 2007).

Fundamental to these recent educational mandated movements is comprehensive planning, program implementation, and monitoring of student progress. To date, no system has existed that can accomplish these lofty goals. The purpose of this article is to introduce two linked comprehensive planning models that meet the rigor required by NCLB, RTI, and SWPBS: the Ziggurat Model (Aspy & Grossman, 2007) and the Comprehensive Autism Planning System (CAPS; Henry & Myles, 2007). Figure 1 depicts the process of comprehensive planning using the Ziggurat Model and CAPS.

What Is the Ziggurat Model?

The Ziggurat Model is a guide for designing comprehensive interventions for individuals

Correspondence concerning this article should be addressed to Brenda Smith Myles, Ohio Center for Autism and Low Incidence, 5220 N. High Street, Building C1, Columbus, OH 43221.
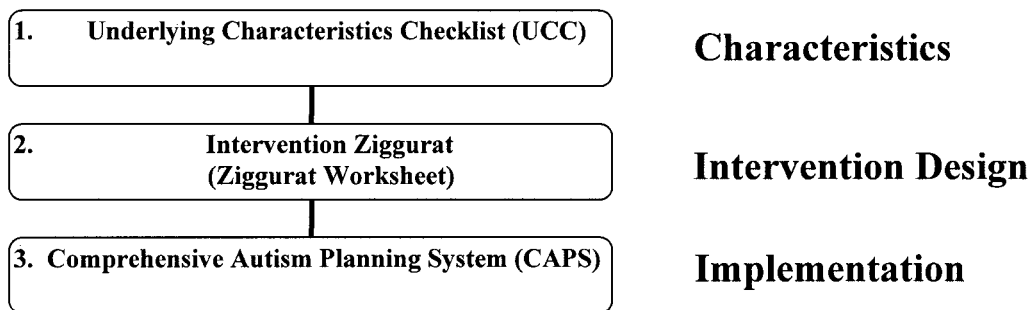
1.	Underlying Characteristics Checklist (UCC)		Characteristics
2.	Intervention Ziggurat (Ziggurat Worksheet)		Intervention Design
3. Comprehensive Autism Planning System (CAPS)			Implementation

Figure 1. The process of comprehensive planning for students with autism spectrum disorders using the Ziggurat Model and CAPS.

with ASD. The premise of this model is that underlying needs and characteristics related to the autism spectrum must be addressed. Therefore, the Ziggurat Model is designed to utilize students' strengths to address true needs or underlying deficits that result in social, emotional, and behavioral concerns. The Ziggurat approach centers on a hierarchical system, consisting of five levels that must be addressed for an intervention plan to be comprehensive (see Figure 2).

When designing a comprehensive program, it is essential to consider the *context of the underlying autism spectrum disorder*. This is overlooked all too often. Targeting underlying

needs leads to interventions that are more proactive and fundamental. In comparison, interventions that are solely designed to address surface behavior without consideration of the underlying ASD are potentially less effective and less likely to result in sustained behavior change.

As mentioned earlier, the process of intervention design should begin with an assessment of the presenting characteristics of ASD (see Figure 1). A thorough assessment of underlying characteristics helps parents and professionals to plan a program that takes into account the individual's strengths and needs. Further, assessment of underlying characteris-
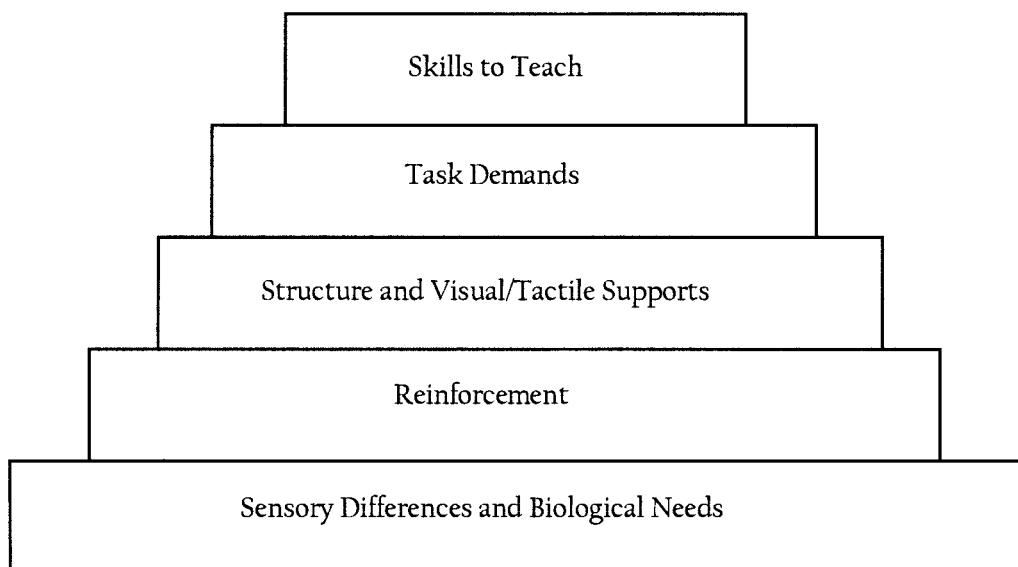

Figure 2. The five levels of the Intervention Ziggurat.

tics provides insight into which skills should be taught and how to design instruction in order to facilitate learning and bring about meaningful and long-lasting change. The Underlying Characteristics Checklist (UCC) offers a comprehensive perspective as a basis for program planning.

The Underlying Characteristics Checklist

The UCC is an informal assessment designed to identify ASD characteristics for the purpose of intervention. There are two versions of the UCC, one intended for use with individuals who are high functioning (UCC-HF), including those with Asperger Syndrome (AS), and one for use with those with a more classic presentation (UCC-CL) in cognition and speech-language skills. The UCC is comprised of eight areas. The first three represent the autism spectrum triad, social, restricted patterns of behavior interests and activities, and communication. Characteristics often associated with ASD are addressed in the next four areas: sensory differences, cognitive differences, motor differences, and emotional vulnerability. The eighth underlying area is known medical and other biological factors.

Based on the results of completing the UCC, a comprehensive intervention plan is developed that targets ASD characteristics by incorporating each of the five levels of the Ziggurat. The UCC may be completed by parents, teachers, or other service providers, individually or as a team.

The Individual Strengths and Skills Inventory

The Individual Strengths and Skills Inventory (ISSI) was designed to accompany the UCC. The ISSI parallels the first seven areas of the UCC. The purpose of this tool is to ensure that underlying strengths and skills are incorporated in the intervention design process. For example, one student may have a strength in imitation whereas another has an intense interest in and knowledge of animals. These assets can easily become keys to addressing underlying skill deficits. An example of a completed ISSI is provided in the case example of Michael.

The Intervention Ziggurat

The Intervention Ziggurat (IZ) is the centerpiece of the Ziggurat Model and is the framework on which comprehensive interventions are built. The IZ is comprised of five critical levels structured into a hierarchy: Sensory Differences and Biological Needs, Reinforcement, Structure and Visual/Tactile Supports, Task Demands, and Skills to Teach (see Figure 2). The first level, Sensory Differences and Biological Needs, addresses basic internal factors that impact functioning. The second level addresses motivational needs prerequisite to skill development. The third level draws on individuals' strength of visual processing and addresses their fundamental need for order and routine. The final two levels of the IZ emphasize the importance of expectations and skill development in light of the characteristics of individuals with ASD.

The IZ helps parents and educators avoid overlooking critical areas that impact the effectiveness of any intervention plan. Each of the levels is essential and contributes to the effectiveness of the others. Thus, if needs on all levels are not addressed, the intervention will not be as effective and skills will not develop. The following is a brief discussion of the five levels of the Intervention Ziggurat.

Sensory differences and biological needs. The first level of the IZ represents what is, in one sense, the basis of all behavior—biology. Consideration of biological factors is especially important in the case of ASD due to the strong genetic and neurological underpinnings of this disorder. Unmet sensory and biological needs will result in changes in behavior, highlighting the importance of including strategies to address these needs.

While sensory differences and biological needs are not included as symptoms of ASD in the current diagnostic manual (*Diagnostic and Statistical Manual of Mental Disorders* of the American Psychiatric Association [APA], 2000), they often present some of the greatest challenges for individuals on the spectrum. For example, anxiety (Pfeiffer & Kinnealey, 2003), distractibility, overactivity, impulsivity, perseveration, delayed receptive and expressive language skills, poor social skill development, and poor eye contact have all been

related to impaired sensory functioning (Stackhouse, Graham, & Laschober, 2002).

Research exists on sensory interventions for individuals with ASD. In 2002, Baranek identified 22 studies conducted on sensory and motor interventions. Additional studies have been conducted since then (cf., Kaplan, Clopton, Kaplan, Messbauer, & McPherson, 2006).

Much of the research on biological interventions has centered on the use of medications. There is support for three classes of drugs, including antidepressants (cf., Namerow, Thomas, Bostic, Prince, & Monuteaux, 2003); antipsychotics (cf., Erickson, Stigler, Posey, & McDougle, 2005); and stimulants (cf., Di Martino, Melis, Cianchetti, & Zuddas, 2004).

Reinforcement. All intervention plans ultimately target the development or increase of a behavior or skill. This goal can only be accomplished by incorporating reinforcement into the comprehensive plan. Without reinforcement, there is no intervention. Because of its fundamental nature, reinforcement is included as the second level of the Intervention Ziggurat.

It may be necessary to think creatively about reinforcement for students with ASD. While social opportunities are often reinforcing for typically developing students, these may be some of the most challenging situations the same is usually not the case for students with ASD for whom social competence presents challenges. In seeking to identify effective reinforcers, it is often helpful to consider the student's preoccupations (Sakai, 2005). Indeed, research has found that activities or objects related to obsessions are often more effective reinforcers than food (cf., Charlop-Christy, Kurtz, & Casey, 1990) for individuals on the autism spectrum.

The principles of effective reinforcement are well established in the research literature. At times there seems to be an unfortunate tendency within the education system towards "stinginess" in providing reinforcement. Hesitation to deliver reinforcers may be related to a concern about "fairness"; that is same-aged peers have already mastered the skills and therefore, are not reinforced for exhibiting them. However, these and similar concerns are short-sighted and unfair to the student with ASD, who will only gain new skills when effective reinforcement systems are in place. Other students may suffer as well due to the time spent addressing behavioral difficulties in the classroom that would be prevented if replacement behaviors were mastered. Effective intervention programs deliver reinforcement for positive behaviors and limit access to reinforcement of problem behaviors (cf., Horner, Carr, Strain, Todd, & Reed, 2002).

Structure and visual/tactile supports. The third level of the IZ is a direct response to the core characteristics of ASD. That is, individuals with ASD function best when predictability is established across the school day, including schedules, routines, environments, behavioral and academic expectations, and interpersonal interactions. If changes in routine occur, preparation for such change should be incorporated into the intervention plan. In addition, verbal communication deficits are primary characteristics of ASD, leading to a disadvantage in the school setting where most communication takes place through talking and listening. In contrast, visual processing is often a strength for students with ASD; therefore, visual supports are critical aspects of intervention plans. Tactile supports are an additional alternative to verbal communication and should be considered, especially for students with a vision impairment.

The areas of structure and Visual/Tactile Supports often overlap. Visual supports such as pictures, written schedules, and task strips may be used as tools to clarify the structure of an activity. For example, visual schedules have been shown to be effective for improving the speed of transitions (cf., Dettmer, Simpson, Myles, & Ganz, 2000); decreasing behavior problems during transition (cf., Dooley, Wilczenski, & Torem, 2001); increasing on task behavior (cf., Bryan & Gast, 2000); and enhancing independence (c.f., Pierce & Schreibman, 1994). There is substantial research support for other visual strategies, such as Social Stories™ (cf., Sansosti, Powell-Smith, & Kincaid, 2004) and video modeling (cf., Nikopoulos & Keenan, 2004).

Task demands. Task Demands with the IZ include academic demands but go beyond, to include social, communication, organizational, sensory, and other demands. For example, recess may be exceedingly difficult given social and communication requirements (e.g.,

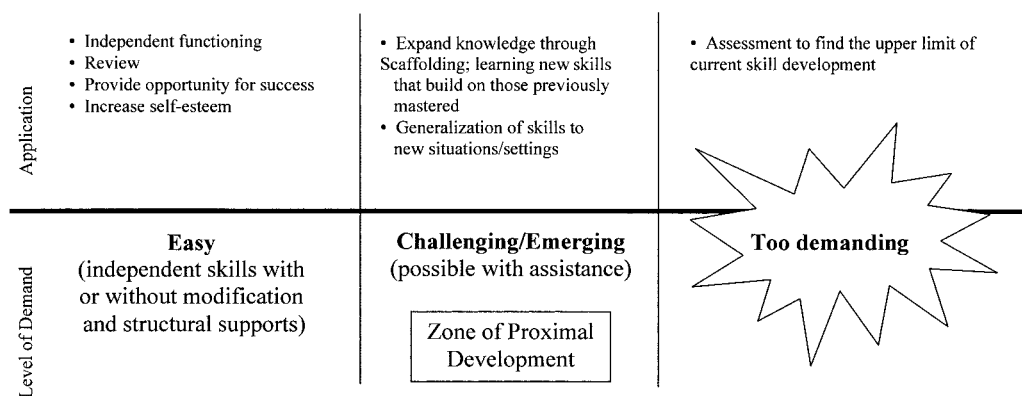|			
Application	• Independent functioning • Review • Provide opportunity for success • Increase self-esteem	• Expand knowledge through Scaffolding; learning new skills that build on those previously mastered • Generalization of skills to new situations/settings	• Assessment to find the upper limit of current skill development
Level of Demand	**Easy** (independent skills with or without modification and structural supports)	**Challenging/Emerging** (possible with assistance) Zone of Proximal Development	**Too demanding**

Figure 3. Three levels of task demands and applications. From *The Ziggurat Model: A Framework for Designing Comprehensive Interventions for Individuals with High-Functioning Autism and Asperger Syndrome* (p. 77), by R. Aspy & B. Grossman, 2007, Shawnee Mission, KS: Autism Asperger Publishing Company. Copyright 2007 by AAPC. Reprinted with permission.

join activities, initiate conversations, resolve peer conflict). For the purpose of designing quality interventions, expectations must be reasonable; that is, an individual must be capable of succeeding either independently or with assistance. This is known as the zone of proximal development (ZPD; Vygotsky, 1978, as cited in Miller, 1993). The ZPD refers to skills that can only be accomplished with assistance. By acknowledging and carefully adjusting task demands, we can often prevent problems. Thus, it is essential to match the demand of a task to the ability of a student. The ZPD represents an optimal level for new learning (challenging with assistance). As depicted in Figure 3, there are three levels of Task Demands: easy, challenging/emerging, and too demanding. Tasks that are too easy are appropriate when independent function is desired; however, it must be kept in mind that skills will not expand. At the other extreme, if a task is too demanding, the individual will fail or become overwhelmed and quit. Behavior problems are often observed when task demands exceed the student's ability. In either case, skills will not expand.

One aspect of intervening at the Task Demands level, therefore, is to identify skill deficits to target for skill development. Once deficits have been identified, decisions can be made on how to match demands to ability. For example, a team may recognize that because a student lacks the skills to negotiate peer con-

flict, he will be provided a trained peer "buddy" during group activities until he is able to master strategies for compromise. Numerous evidence-based interventions reduce demands. For example, peer networks (cf., Kamps, Dugan, Potucek, & Collins, 1999), circle of friends (cf., Frederickson, Warren, & Turner, 2005), and peer buddies (cf., Laushey & Heflin, 2000) have been found to be beneficial in promoting social skills.

Skills to teach. The first four levels of the Ziggurat set the stage for skill acquisition. It is possible to resolve many behavior concerns using strategies on the first four levels without ever teaching skills. Indeed, many improvements may be seen as a direct result of attending to an individual's biological needs, providing meaningful reinforcers, addressing the need for structure and predictability, and carefully matching demands to ability. Comfortable with behavior gain, intervention teams may overlook this crucial last level. However, such a "partial" approach to intervention will have negative long-term outcomes because it does not allow for independence or promote generalization or growth. It is for this reason that the authors view Skills to Teach as the ultimate goal of any intervention plan.

Several approaches to teaching skills to individuals with ASD have been supported in the literature, including priming (cf., Zanolli, Daggett, & Adams, 1996); formal social skills

groups (cf., Barry et al., 2003); and pivotal response training (PRT; cf., Koegel, Carter, & Koegel, 1998).

Ziggurat Worksheet

The Ziggurat Worksheet guides the team through the development of a comprehensive intervention plan. With a new understanding of the student's needs based on completion of the UCC and the information on strengths and current skill level provided through completion of the ISSI, the team is now prepared to design an intervention plan that is targeted to the individual student. Areas of the UCC are prioritized and specific UCC items are selected. All interventions incorporated into the plan must address underlying needs from the UCC. This provides a safeguard from developing a plan that addresses only surface concerns or from recycling interventions that have been used with other students with ASD without careful consideration of the specific student. Further, the Ziggurat Worksheet promotes collaboration by helping parents and professionals to understand their part in the larger intervention picture.

An intervention plan is truly comprehensive when interventions address each of the five levels of the Intervention Ziggurat, three points of intervention—antecedent, behavior, and consequence—and when each intervention strategy addresses underlying characteristics from the UCC. The Ziggurat Worksheet provides a structure for verifying that the intervention plan is indeed comprehensive. Interventions that are not comprehensive leave unnecessary "holes" where difficulties may occur and begin to undermine the effectiveness of the intervention techniques that are put into place. After completion of the Ziggurat Worksheet, the team is ready to complete the CAPS. While the Ziggurat Worksheet allows a team to know that the intervention plan is thorough and targeted, the CAPS provides a structure for implementation.

What Is the Comprehensive Autism Planning System (CAPS)?

CAPS provides an overview of a student's daily schedule by time and activity and specifies of supports that he needs during each period.

Thus, the CAPS enables professionals and parents to answer the fundamental question: What supports does the student need for each activity?

Once a multidisciplinary team, including the parents, has identified the student's needs through completion of the UCC (CL or HF) and ISSI and has developed interventions across the six areas of the Ziggurat that match the student's UCC- and ISSI-identified strengths and concerns, the team is ready to complete the CAPS. That is, based on information developed using the Ziggurat Model, the CAPS is a list of a student's tasks and activities, the times they occur, along with a delineation of the supports needed for success. In addition, the CAPS includes a place for recording the results of ongoing data collection and consideration of how skills are to be generalized to others settings.

Components of CAPS

The CAPS contains the following components:

1. *Time.* This section indicates the clock time of each activity that the student engages in throughout the day.
2. *Activity.* Activities include *all* tasks and activities throughout the day in which the student requires support. Academic periods (e.g., reading), nonacademic times (e.g., recess, lunch) as well as transitions between classes are all be considered activities.
3. *Targeted Skills to Teach.* This may include IEP goals, state standards, and/or skills that lead to school success for a given student.
4. *Structure/Modifications.* Structures/modifications can consist of a wide variety of supports, including placement in the classroom, visual supports, peer networks and instructional strategies (e.g., priming, self-monitoring).
5. *Reinforcement.* Student access to specific types of reinforcement as well as reinforcement schedules are listed here.
6. *Sensory Strategies.* Sensory supports and strategies identified by an occupational therapist or others are listed in this CAPS area.
7. *Communication/Social Skills.* Specific com-

munication goals or activities as well as supports are delineated in this section. Goals or activities may include (a) requesting for help, (b) taking turns in conversation, or (c) protesting appropriately. Supports may encompass language boards or augmentative communication systems.

8. *Data Collection.* This space is for recording the type of data as well as the behavior to be documented during a specific activity. Typically, this section relates directly to IEP goals and objectives.

9. *Generalization Plan.* Because individuals with ASD often have problems generalizing information across settings, this section of the CAPS was developed to ensure that generalization of skills is built into the child's program.

When students transition to middle and high school, the daily structure of school changes. Students may have as many as nine teachers in nine different classrooms. Despite their movement from classroom to classroom, the activities in which the students participate in each academic class is similar, however. That is, in each class students are likely to be required to participate in (a) independent work, (b) group work, (c) tests, (d) lectures, and (e) homework. From this standpoint, the activities in English class and geometry are the same.

Due to the fundamental differences between the structure of elementary school and middle/high school, the CAPS must be modified accordingly. The Modified Comprehensive Autism Planning System (M-CAPS) is an effective means of communicating to educators who teach academic subjects the types of supports that students need during each activity (Sue Klingshirn, personal communication, April, 2006). The multidisciplinary team that plans the program for a high school student with ASD who spends extensive time in general education classrooms develops the student's program using the M-CAPS. As a result, each of the student's academic teachers shares the same document. The M-CAPS used in biology is the same as the M-CAPS used in sociology. Likewise, the supports for a given student are the same.

Case Study for Michael: From Ziggurat to CAPS

Michael is a 16-year-old young man diagnosed with AS. He lives with his mother and two younger brothers; one is diagnosed with attention deficit hyperactivity disorder (ADHD) and obsessive-compulsive disorder, and the other has learning disabilities. Michael is currently taking medication. Although Michael's mother noticed already when he was 3 years old that he was developing differently from his same-age peers, it was not until Michael turned 6 that he was diagnosed with AS.

Throughout elementary school he received special education services including speech and language therapy focused on pragmatic language, and social skills and occupational therapy. After transitioning to middle school, Michael no longer received direct therapy services. Michael is currently in the second quarter of his sophomore year of high school. He attends all general education classes, including biology, history, English literature, algebra, composition, and physical education (PE). His schedule also includes a daily support period where he is given assistance with organizational skills and social skills.

Michael is motivated by things, not by people. He does not process what is said to him as well as when things are presented to him visually, and he has difficulty reading facial expressions and body language. Although he is very bright, Michael receives mostly C's on his report card due to the fact that 25% of grades for all academic classes are based on homework assignments that he often forgets to record in his planner, and therefore fails to complete and turn in. In addition, he does not bring home materials needed to complete assignments.

Michael prefers looking at sports magazines over interacting with peers. Due to excellent rote memory skills, Michael can quickly memorize the most recent statistics of any Major League baseball player and can easily recall those statistics in conversation.

Michael excels in math and in history; however, he struggles in literature and composition class. His fine-motor skills are delayed, and writing is laborious for him. He also has difficulty interpreting concepts covered in his literature class. Both subject-area teachers re-

Individual Strengths and Skills Inventory

Ruth Aspy, Ph.D., and Barry G. Grossman, Ph.D.

In designing effective intervention plans, it is important to be aware of individual strengths. Please describe strengths in the following areas:

Social	
• Initiates interactions with peers • Socializes well with adults	• Likes to share interests with others • Recognizes basic feelings of others when calm

Behavior, Interests, and Activities

- Strong interest in sports statistics
- Diligent in pursuit of interests

Communication

- Converses with peers

Sensory and Biological

- No sensory defensiveness has been noted with visual stimuli
- No health concerns – good attendance in school

Cognitive

- Very intelligent
- Attends all classes in the general education environment with passing grades
- Strong rote memory skills
- Likes to read

Motor

- Legible handwriting
- Participates well in tennis and other non-contact sports

Emotional

- When upset, Michael will remove himself from the situation

Figure 4. **Michael's ISSI. From** *The Ziggurat Model: A Framework for Designing Comprehensive Interventions for Individuals with High-Functioning Autism and Asperger Syndrome* **by R. Aspy & B. Grossman, 2007, Shawnee Mission, KS: Autism Asperger Publishing Company. Copyright 2007 by AAPC. Reprinted with permission.**

port that he is anxious in their classes. Michael also has difficulty tolerating mistakes. He often gets upset when he receives a poor grade on a test and frequently argues with his teachers over the reasoning behind the grade.

Over the past several weeks, Michael has

UNDERLYING CHARACTERISTICS CHECKLIST-HF

Ruth Aspy, Ph.D., and Barry G. Grossman, Ph.D.

NAME	COMMENTS:	
Michael		
	DATE:	FOLLOW-UP DATE:

DIRECTIONS: Place check beside all items that apply and describe behaviors observed.

Area	Item	√	Notes:
COMMUNICATION	1. Makes sounds repeatedly or states words or phrases repeatedly [non-echolalic] (e.g., humming, "well actually")		
	2. Displays immediate or delayed echolalia (e.g., reciting lines from movies, repeating another person's question or statements, repeating sounds)		
	3. Interprets words or conversations literally/has difficulty understanding figurative language		
	4. Has difficulty with rules of conversation (e.g., interrupts others, asking inappropriate questions, poor eye contact, difficulty maintaining conversation)	√	**Interrupts asks inappropriate questions, obsesses on topics of his interest, has difficulty understanding others' perspectives and likes/dislikes (TOM)**
	5. Fails to initiate or respond to social greetings		
	6. Has difficulty starting, joining, and/or ending a conversation	√	
	7. Has difficulty asking for help		
	8. Makes irrelevant comments	√	**Makes unrelated comments during lessons**
	9. Has difficulty expressing thoughts and feelings	√	
	10. Speaks in an overly formal way		
	11. Gives false impression of understanding more than actually does		
	12. Talks incessantly		

Figure 5. Michael's UCC-HF (partial view only). From *The Ziggurat Model: A Framework for Designing Comprehensive Interventions for Individuals with High-Functioning Autism and Asperger Syndrome* (p. 77), by R. Aspy and B. Grossman, 2007, Shawnee Mission, KS: Autism Asperger Publishing Company. Copyright 2007 by AAPC. Reprinted with permission.

become increasingly anxious in PE class where the noise level is often extremely loud. When participating in team contact sports, he removes himself from the game and sits on the sidelines. When his teacher approaches him to discuss the situation, Michael frantically tells him that his peers are intentionally trying to hurt him. In such situation, Michael's be-

ZIGGURAT WORKSHEET
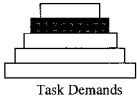Ruth Aspy, Ph.D., and Barry G. Grossman, Ph.D.

BEHAVIOR/AREAS OF CONCERN Social, Communication, Sensory, Cognitive, Emotional Vulnerability	FOR SPECIFIC INTERVENTION PLAN Operationalized Behaviors ☞ ☞ ☞	PRIORITIZED UCC ITEMS		CHECK ALL THAT APPLY		
		# [1] mindblindness # [9] difficulty understanding others' nonverbal communication # [25] Difficulty with rules of conversation # [28] Has difficulty starting, joining, and/or ending a conversation	# [39] Difficulty talking about others' interests # [42] Responds in unusual manner to sounds, pain, and touch # [53] Has poor organizational skills # [89] Difficulty managing stress and anxiety	A	B	C

Task Demands	Task Demand Intervention:	• Provide coping cards and other visual supports (see above). • Establish and train a circle of friends. Peers will participate in modeling and role play and including him in other activities. They will also cue Michael to use his skills. Initially provide adult assistance with organizational skills. • Use high interest activities to encourage social interactions. • Teach parents, mother's friends, teachers, and circle of friends to "narrate."		√		
	Underlying Characteristics Addressed:	• [1] mindblindness • [9] difficulty understanding other's nonverbal communication • [25] Difficulty with rules of conversation • [28] Has difficulty starting, joining, and/or ending a conversation • [39] Difficulty talking about others' interests				
Skills to Teach	Skill Intervention:	• Develop CAPS for each academic setting – provide copy to each teacher. • Teach Michael to identify body cues that indicate stress/anxiety and associated relaxation techniques including calming sensory strategies. • Teach Michael to read others' thoughts and feelings (mindblindness). Use narration, video, and role play/modeling. • Teach Michael how to problem solve using the flow chart system (and worksheet). Work through samples together when calm and reinforce for participation. Guide Michael through the chart following real incidents and provide reinforcement. Fade adult assistance over time. • Provide speech therapy services to address pragmatic (social) language skills. • Practice skills in a safe environment (e.g., role play) and reinforce. Reinforce Michel for practicing and maintaining skills. • Teach Michael how to recognize the right time to talk.		√	√	
	Underlying Characteristics Addressed:	• [1] mindblindness • [9] difficulty understanding other's nonverbal communication • [25] Difficulty with rules of conversation • [28] Has difficulty starting, joining, and/or ending a conversation • [39] Difficulty talking about others' interests • [89] Difficulty managing stress and anxiety				

Figure 6. Michael's Ziggurat Worksheet (Task Demands and Skills to Teach only). From *The Ziggurat Model: A Framework for Designing Comprehensive Interventions for Individuals with High-Functioning Autism and Asperger Syndrome* (p. 77), by R. Aspy and B. Grossman, 2007, Shawnee Mission, KS: Autism Asperger Publishing Company. Copyright 2007 by AAPC. Reprinted with permission.

M-CAPS
Michael Thomas

Activity	Skills/STO	Structure/ Modifications	Reinforcement	Sensory Strategies	Social Skills Communication	Data Collection	Generalization
Independent Work	Task completion	-Task organizer -Organization calendar -Peer buddies	-Completing homework/in-class work (*from menu*)	-Coping cards -Ear plugs -Stress thermometer	-Asking for help	-Task organizer -Organization calendar	- Homework completion
Group Work	Conversatio nal rules	-Task organizer -Organization calendar --Peer buddies	-Completing homework/in-class work (*from menu*)	-Relaxation techniques	-Cues for commenting and asking questions -Social Story™ about group work	-Task organizer	-Lunch conversation
Tests	Task completion	-Task organizer -Organization calendar	-Calming skills -Test completion (*from menu*)	-Relaxation techniques -Stress thermometer	-Cues for commenting and asking questions		-Turning in assignments
Lectures	Attention to task	-Task organizer -Organization calendar	-Appropriate conversation (*from menu*)	-Coping cards -Stress thermometer	-Conversation cues -Cues for commenting and asking questions	-Organization calendar	-Listening during group work
Homework	-Task completion -Materials and supplies needed	-Homework checklist (double-check with student)	-Homework turned in (*from menu*)	-Relaxation techniques -Stress thermometer	NA	-Homework turned in complete	-Turning in classwork

Figure 7. Michael's M-CAPS (partial only).

CAPS
Physical Education Class - Michael Thomas

Activity	Skills/STO	Structure/Modifications	Reinforcement	Sensory Strategies	Social Skills Communication	Data Collection	Generalization
PE	-Participation in group sports -Accepting loss	-Calendar of competitive sports -Run errands, as needed (behavior: space invasion, loud voice; when game ends) -Review sportsmanship guidelines (with entire class) using cue cards -Present miniature cue card at 5-minute warning	-Participation -Accepting loss (Use reinforcement menu) -Social reinforcer	- Ear plugs -Calming cards -Sensory breaks -Stress thermometer	-Game statistician -Peer buddy -Social Story™	- Time in PE -Number of meltdowns	-Accept loss during games in Scouts.

Figure 8.   Michael's CAPS for physical education.

havior typically is to leave the gym. His teacher thinks that Michael is a "sore loser."

Michael's multidisciplinary team, including his parents, met to develop his program. They completed a UCC-HF (see Figure 4 for a portion of Michael's UCC) and ISSI (see Figure 5). Using information from these activities, Michael's team completed the Ziggurat Worksheet (see partial copy in Figure 6). Finally, they created a M-CAPS for his general education classes (see partial copy in Figure 7) and a traditional CAPS for his PE class (see Figure 8).

Summary

The Ziggurat Model and CAPS provide a unique way to develop and implement a meaningful program and comprehensive for a student with ASD. The structure fosters consistent use of supports to ensure student success as well as data collection to measure that success. Compatible with current trends in education, including NCLB, RTI, and SWPBS, the Ziggurat Model and CAPS are also easy to use.

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