BY BRENDA SMITH MYLES, PH.D., SHAWN A. HENRY, M.S., AMY BIXLER COFFIN, M.S., BARRY G. GROSSMAN, PH.D. AND RUTH ASPY, PH.D.

The CAPS & Ziggurat Models

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

In recent years, far-reaching changes have occurred in the special education system (which was framed by the Individuals with Disabilities Education Act (IDEA) of 1975), beginning with the 2001 No Child Left Behind (NCLB) Act, which 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 Intervention (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 mandates and movements are comprehensive planning, participation of all stakeholders, including parents, in program planning, program implementation, and monitoring of student progress (Mesibov & Shea, 2006; National Research Council, 2001). In addition to the aforementioned, parent involvement in planning their child's education programs has become an integral part of all special education legislation and has itself become best practice (National Research Council, 2001).

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, 2007a). These two models represent a "design and build" approach to comprehensive program planning for children and youth with autism spectrum disorders (ASD) and related disabilities. In effect, the use of these models results in a transformation of a child's individualized education program (IEP) into a multidimensional document that is useable by all stakeholders. More specifically, this article (a) briefly describes the program planning frameworks and how they converge to build a complete program that directly addresses the individual's underlying characteristics, and (b) shows how the models can be applied in a classroom setting.

What Is the Ziggurat Model?

The Ziggurat Model is a guide for designing comprehensive interventions for individuals with ASDs. The premise of this model is that underlying needs and characteristics related to ASDs must be addressed. 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 1). A discussion of components of the model follows.

DETERMINING NEEDS: THE UNDERLYING CHARACTERISTICS CHECKLIST

The Underlying Characteristics Checklist (UCC) is an informal assessment designed to identify ASD characteristics for the purpose of intervention. The UCC is comprised of eight areas: social, restricted patterns of behavior interests and activities, communication, sensory differences, cognitive differences, motor differences, emotional vulnerability, and medical and other biological factors. It may be completed by parents, teachers or other service providers, individually or as a team. This form allows users to see how "autism" impacts the everyday functioning of the individual on the autism spectrum.

IDENTIFYING STRENGTHS: THE INDIVIDUAL STRENGTHS AND SKILLS INVENTORY

The Individual Strengths and Skills Inventory (ISSI) accompanies the UCC and parallels its first seven areas. The ISSI goes beyond identifying the student's special interests and ensures that underlying strengths and skills are incorporated throughout the student's daily program.

THE INTERVENTION ZIGGURAT

The Intervention Ziggurat, the centerpiece of the Ziggurat Model, is comprised of evidenced-based levels structured into a hierarchy:

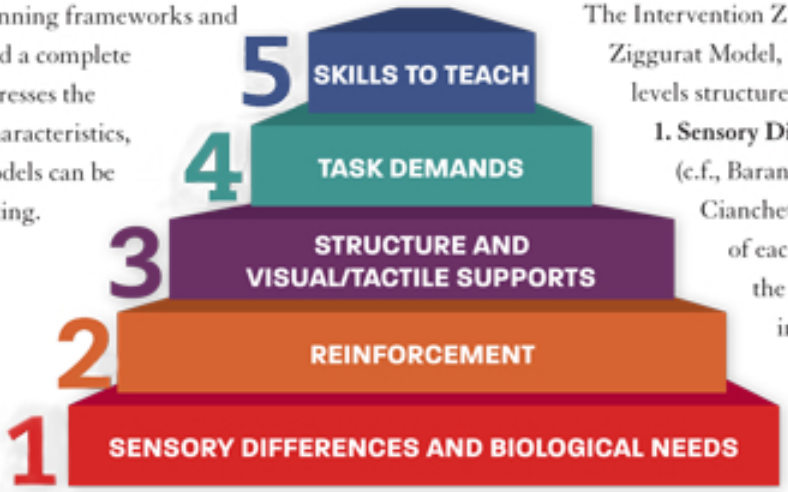

FIGURE 1: The Five Levels of the Intervention Ziggurat

1. Sensory Differences and Biological Needs (c.f., Baranek, 2002; Di Martino, Melis, Cianchetti, & Zuddas, 2004). The impact of each of the seven sensory systems on the student with ASD is considered in this section of the Ziggurat. In addition, biological considerations, such as medication, allergies and sleep needs, are factored into this model.

2. Reinforcement (c.f., Horner, Carr, Strain, Todd, & Reed, 2002). Student preferences are identified and integrated into the Ziggurat framework. "Reinforcement is more than just a reward; it is a powerful tool for teaching and maintaining desirable academic, communicative, and social behaviors" (Downing, 2008, p. 45).

3. Structure and Visual/Tactile Supports (c.f., Nikopoulos & Keenan, 2004; Sansosti, Powell-Smith, & Kincaid, 2004). Classroom layout, home base, visual schedules, choice boards, boundary markers, communication systems, learning style, and modes of expressing and receiving language as well as academic/preacademic modifications are examples of interventions that address the need for predictability and challenges with communication.

4. Task Demands (c.f., Frederickson, Warren, & Turner, 2005; Vygotsky, 1978, as cited in Miller, 1993). Task demand interventions are designed to ensure that students are not required to participate in activities or complete assignments that exceed their abilities. A reduction of demands and the addition of supports are required to facilitate success.

5. **Skills to Teach** (c.f., Barry et al., 2003). Finally, this Ziggurat area includes the skills, tasks and/or behaviors in which the student requires direct instruction in order to experience success.

Each of the levels contributes to the effectiveness of the others. Thus, if all levels are not addressed, the intervention will not be as effective and skills will not develop.

The Ziggurat Worksheet guides the development of a comprehensive intervention plan and is based on underlying needs from the UCC and strengths from the ISSI. This provides a safeguard from developing a plan that addresses only surface issues. The Ziggurat Worksheet promotes collaboration by helping parents and professionals to understand their part in the larger intervention picture. After completion of the worksheet, the team is ready to complete the CAPS.

What Is the Comprehensive Autism Planning System (CAPS)?

Based on information from the Ziggurat Model, the CAPS is a list of student tasks and activities, the times they occur and a delineation of the supports needed for success (see Figure 2). Also, the CAPS includes data collection and generalization columns. The CAPS answers the question: What supports does the student need for each activity?

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, nonacademic times and transitions are all 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. **Structures/Modifications.** Structures/modifications can consist of a wide variety of supports, including visual supports, peer networks and instructional strategies.
5. **Reinforcement.** Student access to specific reinforcers as well as reinforcement schedules are listed here.
6. **Sensory Strategies.** Sensory supports identified by an occupational therapist or others are listed in this CAPS area.
7. **Communication/Social Skills.** Specific communication goals or activities as well as supports are delineated in this section. 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.
9. **Generalization Plan.** 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, they may have as many as nine teachers in nine different classrooms. Despite their movement across classrooms, the activities in each class are similar: (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; therefore, the M(odified)-CAPS was developed (Sue Klingshirn, personal communication, April, 2006). For a high school student who spends extensive time in general education, each academic teacher shares the same document.

From Ziggurat to CAPS: A Case Study

A case study of Michael, a 16-year-old sophomore diagnosed with Asperger Syndrome, can be found at www.texasautism/CaseExample.html. This website contains Michael's Underlying Characteristics Checklist, Individual Strengths and Skills Inventory, Ziggurat Worksheet, and an M-CAPS for his general education classes and a traditional CAPS for PE. For Michael, implementation of the Ziggurat Model and CAPS resulted in (a) increased time in the general education setting, (b) greater access to the general education curriculum, (c) increased participation with peers and teachers, and (d) skill acquisition.

Summary

The Ziggurat Model and CAPS provide a unique way to develop and implement a meaningful and comprehensive program 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. Use of information gathered through the Ziggurat and CAPS process may be used to develop a truly individualized educational plan based on individual assessment and evidenced-based practices. Use of these models ensures that underlying needs are addressed and provides checks and balances to ensure that the carefully designed plan is faithfully implemented.

Compatible with current trends in education, including NCLB, RTI and SWPBS, the Ziggurat Model and CAPS are also easy to use. That is, the framework, designed to be user-friendly for all members of the multidisciplinary team, including parents (Henry & Myles, 2007b), does not require

Time	Activity	Targeted Skills to Teach	Structure/ Modifications	Reinforcement	Sensory Strategies	Communication Social Skills	Data Collection	Generalization Plan

FIGURE 2: The Comprehensive Autism Planning System (CAPS) Worksheet

specialized training and can be used across student ages in a variety of settings. The end result is a program that addresses the student's multifaceted strengths and needs.

ABOUT THE AUTHORS

Brenda Smith Myles, Ph.D., *is chief of programs and development for the Ohio Center for Autism and Low Incidence (OCALI), an associate professor at the University of Kansas, and a member of ASA's Panel of Professional Advisors.*

Shawn A. Henry *is executive director of OCALI.*

Amy Bixler Coffin *is the education autism administrator for OCALI.*

Ruth Aspy, Ph.D., and Barry G. Grossman, Ph.D., *are licensed psychologists with the Ziggurat Group, which specializes in assessment and intervention for individuals with ASD.*

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