

Tools of the Mind: Helping Children Develop Self-Regulation

By Mark Katz, PhD

GIVEN THE IMPORTANT ROLE THAT SELF-REGULATION, WORKING MEMORY, and other execu-

Parents, educators, health care providers and well informed consumers are finding creative ways to address the needs and daily challenges of those who struggle with AD/HD. In each issue of Attention, we highlight one innovative program, model, or practice and pass on appropriate contacts so you can implement similar efforts in your community. Appearance in this column, however, does not imply endorsement

tive functions play in a child's school success, it should come as no surprise why many early childhood educators are excited about Tools of the Mind. Developed by Deborah Leong, PhD, and Elena Boedrova, PhD, of Denver, Colorado, the program teaches children how to use different mental tools to gain greater control of their social, emotional and cognitive behaviors. Tools include things like learning to plan your actions and how to anticipate handling situations that are hard for you. For example, children who have difficulty taking turns learn to identify a turn-taking situation and practice tangible strategies for making turn-taking fair during classroom activities.



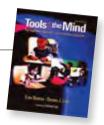
The Tools of the Mind program received quite a bit of media attention following the publication of a 2007 study of its effectiveness. Conducted by Adele Diamond, PhD, professor of developmental cognitive science at the University of British Columbia, the study showed that children enrolled in preschool classrooms using Tools of the Mind improved in their ability to resist distractions and temptations (inhibitory control), mentally hold information in mind (working memo-

Mark Katz, PhD, is a clinical and consulting psychologist and the director of Learning Development Services, an educational, psychological and neuropsychological center located in San Diego, California. He is a contributing editor to Attention magazine and a member of its editorial advisory board, a former member of CHADD's professional advisory board, and a recipient of the CHADD Hall of Fame Award.

ry), and flexibly adjust to change (cognitive flexibility). For further information on this study, read the article "Preschool Program Improves Cognitive Control" by Diamond and her colleagues that appeared in *Science* (30 November 2007: 1387-1388).

The program, which consists of forty individualized fun-filled imaginative play and learning activities, requires children to use private speech, a skill that researchers say is key to improving self-regulation. Activities also emphasize planning and working memory in increasing amounts. "Self-regulation practice is embedded in all classroom activities," say Leong and Boedrova. "Children are strengthening executive functions simply by engaging in everyday routines, play, and the learning of academic skills." As

by CHADD.



children are having fun and learning, their self-regulation grows at the same time. For children needing additional external supports or "scaffolding" to be successful, teachers are coached on how to provide this. As children become better "masters of their own behavior," external supports are gradually relaxed.

Tools of the Mind is currently being implemented in more than 450 preschool and kindergarten regular education and special education classrooms throughout the United States. Children's progress is measured through a dynamic assessment process embedded in the program. As children respond to instruction through teacher prompts, hints, and cues, their responses are recorded along with which hints and prompts worked best with each individual child.

"Self-regulation practice is embedded in all classroom activities," say Leong and Boedrova. "Children are strengthening executive functions simply by engaging in everyday routines, play, and the learning of academic skills."

Data are then used to assist teachers in prescriptively tailoring new activities. Schools are finding the program compatible with Response to Intervention (RTI).

Proponents of Tools believe that executive functions can be strengthened if children are provided activities that require them to use these functions in increasingly more complex ways. This is very hopeful news for parents and teachers of young school-aged children showing weaknesses in selfregulation and other related skills.

Tools is based on the work of the Russian psychologist Lev Vygotsky. Boedrova worked

with Vygotsky's students in Russia before coming to the United States. Those interested in learning more about the program's theoretical underpinnings can read the book by Bodrova and Leong, *Tools of the Mind: The Vygotskian Approach to Early Childhood Education* (Prentice Hall, second edition, 2007).

Readers are encouraged to visit toolsofthemind.org, the program's website, for more general information about Tools of the Mind, including training requirements and program costs. Readers might also wish to listen to NPR news stories about a preschool using the Tools program and the role of imaginative play in helping children improve self-control. One story, "Creative Play Makes for Kids in Control" by Alix Spiegel, can be found on the NPR website (npr.org) or through links under the News and Events section of the Tools of the Mind website. Another NPR news story of possible interest, "Old-Fashioned Play Builds Serious Skills," can be found those websites as well.