

# COGNITIVE BEHAVIOR MODIFICATION

## CHARACTERISTICS OVERVIEW CHART

Verbal Skills	Grade Levels	Cognitive Level	Areas Addressed
<input checked="" type="checkbox"/> Nonverbal	<input checked="" type="checkbox"/> PK	<input checked="" type="checkbox"/> Classic	<input checked="" type="checkbox"/> (Pre)Academic/Cognitive/Academic
<input checked="" type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Elementary	<input checked="" type="checkbox"/> High	<input checked="" type="checkbox"/> Adaptive Behavior/ Daily Living
<input checked="" type="checkbox"/> Verbal	<input checked="" type="checkbox"/> Middle/High	Functioning	<input checked="" type="checkbox"/> Behavior <input checked="" type="checkbox"/> Communication/Speech <input checked="" type="checkbox"/> Social/Emotional

## BRIEF INTRODUCTION

Cognitive behavior modification (CBM) is an intervention that combines cognitive and behavioral learning principles to shape and encourage desired behaviors. To be more specific, cognitive behavior modification refers to theoretical and applied orientations that share three underlying assumptions: (a) an individual’s behavior is mediated by cognitive events; (b) a change in mediating events results in a change in behavior; and (c) an individual is an active participant in his learning. In short, the cognitive behavioral approach assumes that individuals have both the capacity and preference for monitoring and managing their own behavior (Heflin & Simpson, 1998).

## DESCRIPTION

Cognitive behavior modification aims to teach individuals to monitor their own behavior, pace, or performance, and to appropriately dispense self-reinforcement. As such, it emphasizes modifying thinking as a means of changing feelings and behavior (Corey, 1991; Harris, 1988). The teacher strives to activate the child’s cognitive processes using a behavior change system to alter his thinking as well as his behavior. According to Meichenbaum (1980), the premise of CBM is that individuals must develop the ability to notice (a) how they feel, think, and behave and (b) the impact their behavior has on others as a prerequisite to behavior change.

According to Kaplan and Carter (1995), five characteristics distinguish cognitive behavior modification from other types of behavior management systems:

- Participants themselves rather than external agents are the primary change agents.
- Verbalization is on an overt level, then a self-monitor level, and then a covert level.
- Participants are taught to identify and use a series of problem-solving steps.
- Modeling is used for instructional purposes.
- Cognitive behavior modification facilitates self-control. (p. 381)

Cognitive behavior modification has been widely used in a variety of settings to address aggression, anxiety, panic disorders, substance abuse, schizophrenia, bipolar disorder, borderline personality, depression, limited self-control, poor social problem solving, and related problems (Kendall, 1993; Larson & Lochman, 2002; Leahy & Beck, 1988; Mayer, Lochman, & Acker, 2005). The technique has been applied successfully with individuals with autism who exhibit a range of skills (Quinn, Swaggart, & Myles, 1994).

## STEPS

Quinn et al. (1994) outlined the instructional sequence for individuals with classic autism as follows:

- *Model.* The teacher verbalizes aloud what he is doing while demonstrating the strategy steps of a task.
- *Put-through.* Following modeling, the teacher puts the student through the process, providing prompts if necessary. This procedure is performed on a daily basis until the student completes the task with minimal prompting. The teacher collects data and monitors the process until the student is able to master the task at the preestablished criteria.
- *Self-recording.* After following a signal or visual representation of a step, the student places a chip on a board, places a mark on a self-monitoring sheet, or otherwise records the occurrence of the target behavior.
- *Self-rewarding.* After the picture sequence or after the self-monitoring has been completed, the student self-rewards from a menu of preferred reinforcers.

Quinn et al. (1994) also listed a three-step instructional sequence for individuals with high-functioning autism:

- *Self-monitoring.* The student listens to an audiotaped signal; when she hears a signal, the student self-questions, “Am I paying attention?”
- *Self-recording.* The student quickly assesses whether or not she was attending. If the student was attending, she circles “yes” on the self-monitoring sheet. If she was off task, she circles “no.”
- *Self-rewarding.* The student provides a self-reward for on-task behavior by saying, “Good job.” If the student was off task, he or she will silently prompt himself or herself by saying, “Get back to work.” The student resumes work immediately.

## BRIEF EXAMPLE

Norton is a 15-year-old with Asperger Syndrome. He has difficulty with social limits and understanding subtle social rules. He often makes mistakes in social judgment that make others uncomfortable. For example, he oversteps traditional greeting protocol by hugging and kissing people.

Norton’s teacher, Ms. Williams, decided to introduce a problem-solving scale to him with various ways to greet friends, parents, etc. Ms. Williams and Norton matched greetings to individuals, such as saying “Hi” to friends and shaking hands with or giving a high five to his baseball coach after a game. Ms. Williams also taught Norton to use a daily diary to rate his greeting with others.

## SUMMARY

Cognitive behavior modification involves both cognitive and behavioral components. It is an intervention designed to enhance self-regulation, which involves monitoring one’s own behavior and performance and delivering reinforcement accordingly. Studies have demonstrated the effectiveness of a variety of cognitive behavior modification techniques with individuals with disabilities. It holds promise as an effective intervention for individuals with autism.

## RESEARCH TABLE

Number of Studies	Ages (year)	Sample Size	Area(s) Addressed	Outcome
9	3-adolescence	71	Aggressive behavior, on-task behavior, stereotypic behavior, social behavior, communication skills	+

## STUDIES CITED IN RESEARCH TABLE

1. Palmen, A., Didden, R., & Arts, M. (2008). Improving question asking in high-functioning adolescents with autism spectrum disorders. *Autism, 12*, 83-98.  
Nine high-functioning adolescents with autism participated in the study to evaluate the effectiveness of small-group training consisting of feedback and self-management. All participants demonstrated a significant improvement in correct question asking after training.
2. Sofronoff, K., Attwood, T., Hinton, S., & Levin, I. (2007). A randomized controlled trial of a cognitive behavioural intervention for anger management in children diagnosed with Asperger Syndrome. *Journal of Autism and Developmental Disorders, 37*, 1203-1214.  
The study evaluated the effectiveness of a cognitive behavioral intervention for anger management with children with AS. Forty-five children and their parents were randomly assigned to either intervention or control conditions. Results indicated positive effects of the cognitive behavioral intervention.
3. Ben-Arieh, J., & Myles, B. S. (2003). The use of a cognitive behavior modification strategy to increase on-task behavior in a student with Asperger Syndrome. *Journal of the International Association of Special Education, 4*, 19-28.  
The effectiveness of a cognitive behavior modification strategy was investigated with a 6-year-old boy with AS. The child was taught to use the strategy to increase his ability to stay engaged in a task while eliminating or decreasing his dependency on adult prompts. Data revealed that the child exhibited “on-task” behavior for an increasing period of time following introduction of the strategy.
4. Barry, L. M., & Singer, G.H.S. (2001). A family in crisis: Replacing the aggressive behavior of a child with autism toward an infant sibling. *Journal of Positive Behavior Interventions, 3*, 28-38.  
This study evaluated the use of clinician-implemented skill training of replacement behavior and clinician fading with self-management of replacement behavior as a means of managing the aggressive behavior of a 10-year-old child with autism toward his sibling. The results showed a decrease in the occurrence of the aggressive behavior, an increase in the

percentage of intervals in which replacement behaviors occurred, and an increase in the duration of sibling interactions.

5. Callahan, K., & Rademacher, J. A. (1999). Using self-management strategies to increase the on-task behavior of a student with autism. *Journal of Positive Behavior Interventions, 1*, 117-122.  
This study evaluated the effectiveness of using self-management strategies and reinforcement to increase the on-task behavior of a second-grade student with autism. Data indicated that the rate of on-task behavior was significantly increased when self-management and reinforcement procedures were implemented. In addition, improvements in independent academic and behavioral functioning were also documented.
6. Shearer, D. D., Kohler, F. W., Buchan, K. A., & McCullough, K. M. (1996). Prompting independent interactions between preschoolers with autism and their nondisabled peers: An analysis of self-monitoring. *Early Education and Development, 7*, 205-220.  
The study examined the effects of self-monitoring on the activity engagement and social interaction of three preschoolers with autism. Results showed that the adult and child monitoring procedures produced equal increases in children's engagement with typical peers. In addition, the child-monitoring procedure maintained children's independent interaction during the follow-up condition. Children exhibited varying levels of consistency in their self-monitoring.
7. Strain, P. S., Kohler, F. W., Storey, K., & Danko, C. D. (1994). Teaching preschoolers with autism to self-monitor their social interactions: An analysis of results in home and school settings. *Journal of Emotional and Behavioral Disorders, 2*, 78-88.  
Three preschool boys with autism participated in the study, which examined the effects of a self-monitoring intervention. Three primary results were obtained. First, the self-monitoring package increased each participant's interactions with his peers and/or siblings. Second, the school and home procedures produced comparable impacts on some dimensions of children's social behaviors. Finally, both adult prompts and reinforcement were successfully reduced or faded within both school and home intervention settings.
8. Koegel, L. K., Koegel, R. L., Hurley, C., & Frea, W. D. (1992). Improving social skills and disruptive behavior in children with autism through self-management. *Journal of Applied Behavior Analysis, 25*, 341-353.  
The study assessed whether self-management could be used to produce extended improvements in children's responsiveness to verbal initiations from others in community, home, and school settings without the presence of a treatment provider. Four children with autism participated. Results indicated positive outcomes in which children learned to self-manage responsively to others across multiple community settings. In addition, disruptive behaviors decreased without the need for special intervention.

9. Koegel, R. L., & Koegel, L. K. (1990). Extended reductions in stereotypic behavior of students with autism through a self-management treatment package. *Journal of Applied Behavior Analysis, 23*, 119-127.

The study evaluated whether four children with autism could learn to use a self-management treatment package to reduce their stereotypic behavior. Results indicated that all children learned to use self-management procedures to greatly reduce levels of stereotypic behavior, and improvement occurred for extended periods of time in new settings.

## REFERENCES

- Barry, L. M., & Singer, G.H.S. (2001). A family in crisis: Replacing the aggressive behavior of a child with autism toward an infant sibling. *Journal of Positive Behavior Interventions, 3*, 28-38.
- Ben-Arieh, J., & Myles, B. S. (2003). The use of a cognitive behavior modification strategy to increase on-task behavior in a student with Asperger Syndrome. *Journal of the International Association of Special Education, 4*, 19-28.
- Callahan, K., & Rademacher, J. A. (1999). Using self-management strategies to increase the on-task behavior of a student with autism. *Journal of Positive Behavior Interventions, 1*, 117-122.
- Corey, F. (1991). *Theory and practice of counseling and psychotherapy*. Belmont, CA: Books/Cole Publishing Company.
- Harris, K. R. (1988). Cognitive-behavior modification: Application with exceptional students. In E. L. Meyen, G. A. Vergason, & R. J. Whelan (Eds.), *Effective instructional strategies for exceptional children* (pp. 253-268). Denver, CO: Love Publishing Company.
- Heflin, L. J., & Simpson, R. L. (1998). Interventions for children and youth with autism: Prudent choices in a world of exaggerated claims and empty promises. Part I: Intervention and treatment option review. *Focus on Autism and Other Developmental Disabilities, 13*, 194-211.
- Kaplan, J. S., & Carter, J. (1995). *Beyond behavior modification: A cognitive-behavioral approach to behavior management in the school* (3<sup>rd</sup> ed.). Austin, TX: Pro-Ed.
- Kendall, P. C. (1993). Cognitive-behavioral therapies with youth: Guiding theory, current status, and emerging developments. *Journal of Consulting and Clinical Psychology, 61*, 235-247.
- Koegel, R. L., & Koegel, L. K. (1990). Extended reductions in stereotypic behavior of students with autism through a self-management treatment package. *Journal of Applied Behavior Analysis, 23*, 119-127.

- Koegel, L. K., Koegel, R. L., Hurley, C., & Frea, W. D. (1992). Improving social skills and disruptive behavior in children with autism through self-management. *Journal of Applied Behavior Analysis, 25*, 341-353.
- Larson, J., & Lochman, J. E. (2002). *Helping schoolchildren cope with anger: A cognitive behavior intervention*. New York: Guilford Press.
- Leahy, R. L., & Beck, A. T. (1988). Cognitive therapy of depression and mania. In A. Gorgotas & R. Cancro (Eds.), *Depression and mania* (pp. 214-267). New York: Elsevier.
- Mayer, M., Lochman, J., & Acker, R. V. (2005). Introduction to the special issue: Cognitive-behavior interventions with students with EBD. *Behavioral Disorders, 30*, 197-212.
- Meichenbaum, D. (1980). Cognitive-behavior modification: A promise yet unfulfilled. *Exceptional Education Quarterly, 1*, 83-88.
- Palmen, A., Didden, R., & Arts, M. (2008). Improving question asking in high-functioning adolescents with autism spectrum disorders. *Autism, 12*, 83-98.
- Quinn, C., Swaggart, B. L., & Myles, B. S. (1994). Implementing cognitive behavior management programs for persons with autism. *Focus on Autistic Behavior, 9*(4), 1-13.
- Shearer, D. D., Kohler, F. W., Buchan, K. A., & McCullough, K. M. (1996). Prompting independent interactions between preschoolers with autism and their nondisabled peers: An analysis of self-monitoring. *Early Education and Development, 7*, 205-220.
- Sofronoff, K., Attwood, T., Hinton, S., & Levin, I. (2007). A randomized controlled trial of a cognitive behavioural intervention for anger management in children diagnosed with Asperger Syndrome. *Journal of Autism and Developmental Disorders, 37*, 1203-1214.
- Strain, P. S., Kohler, F. W., Storey, K., & Danko, C. D. (1994). Teaching preschoolers with autism to self-monitor their social interactions: An analysis of results in home and school settings. *Journal of Emotional and Behavioral Disorders, 2*, 78-88.

## RESOURCES AND MATERIALS

- Cognitive Behavioral Therapy: [www.autism-help.org/adults-cognitive-behavioral.htm](http://www.autism-help.org/adults-cognitive-behavioral.htm)  
This fact sheet includes information about adults on the spectrum, but the information about cognitive behavior therapy pertains to children as well.
- Cognitive Behavioral Therapy: [http://www.researchautism.net/autism\\_treatments\\_therapies\\_intervention.ikml?ra=15](http://www.researchautism.net/autism_treatments_therapies_intervention.ikml?ra=15)  
This informational resource offers the option of viewing the information on basic, intermediate, and advanced levels.
- The Autism Web Course: [http://cdd.unm.edu/swan/autism\\_course/modules/behavior/cbm/index.htm](http://cdd.unm.edu/swan/autism_course/modules/behavior/cbm/index.htm)  
This link presents multiple case examples of using cognitive behavior management.

### GENERAL RESOURCES

- Autism Internet Modules (AIM) [www.autisminternetmodules.org](http://www.autisminternetmodules.org). The Autism Internet Modules were developed with one aim in mind: to make comprehensive, up-to-date, and usable information on autism accessible and applicable to educators, other professionals, and families who support individuals with autism spectrum disorders (ASD). Written by experts from across the U.S., all online modules are free, and are designed to promote understanding of, respect for, and equality of persons with ASD.
- The Autism Web Course: [http://cdd.unm.edu/swan/autism\\_course/about/index.htm](http://cdd.unm.edu/swan/autism_course/about/index.htm). This web course was developed out of materials from the Interactive Collaborative Autism Network (ICAN). The Autism Programs at the University of New Mexico has updated and added information to this web course.
  - Characteristics
  - Assessment
  - Academic Interventions
  - Behavioral Interventions
  - Communication Interventions
  - Environmental Interventions
  - Social Interventions
  - Family Support Suggestions
- Indiana Resource Center for Autism (IRCA) <http://www.iidc.indiana.edu/irca/fmain1.html>. The Indiana Resource Center for Autism staff's efforts are focused on providing communities, organizations, agencies, and families with the knowledge and skills to support children and adults in typical early intervention, school, community, work, and home settings.
  - IRCA Articles: <http://www.iidc.indiana.edu/index.php?pageId=273>

- Texas Statewide Leadership for Autism [www.txautism.net](http://www.txautism.net). The Texas Statewide Leadership for Autism in conjunction with the network of Texas Education Service center with a grant from the Texas Education Agency has developed a series of free online courses in autism. Please check the training page, [www.txautism.net/training.html](http://www.txautism.net/training.html), for update lists of courses, course numbers and registration information. Current courses include the following:
  - Asperger Syndrome 101
  - Augmentative and Alternative Communication and the Autism Spectrum
  - Autism for the General Education Teacher
  - Autism 101: Top Ten Pieces to the Puzzle
  - Classroom Organization: The Power of Structure for Individuals with ASD
  - Communication: The Power of Communication for Individuals with ASD
  - Futures Planning for Students with Autism Spectrum Disorder
  - Navigating the Social Maze: Supports and Interventions for Individuals with ASD
  - Solving the Behavior Puzzle: Making Connections for Individuals with ASD