

# APPLIED BEHAVIOR ANALYSIS

## 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 Functioning	<input checked="" type="checkbox"/> Adaptive Behavior/ Daily Living
<input checked="" type="checkbox"/> Verbal	<input checked="" type="checkbox"/> Middle/High		<input checked="" type="checkbox"/> Behavior <input checked="" type="checkbox"/> Communication/Speech <input checked="" type="checkbox"/> Social/Emotional

## BRIEF INTRODUCTION

Applied behavior analysis (ABA) has its roots in the philosophy of modern behaviorism pioneered by Skinner, who laid the foundation in the early 1900s. As such, it is the practical application of behavioral laws, laws of reinforcement, formulated by Skinner to solve behavior problems. ABA is defined as the process of systematically applying interventions based upon the principles of behavior theory to improve socially significant behaviors, including reading, academics, social skills, communication, and adaptive living skills, to a meaningful degree, and to demonstrate that the interventions employed are responsible for the improvement in behavior (Baer, Wolf, & Risley, 1968; Sulzer-Azaroff & Mayer, 1991).

## DESCRIPTION

According to Baer et al. (1968), ABA is “the process of applying sometimes tentative principles of behavior to the improvement of specific behaviors, and simultaneously evaluating whether or not any changes noted are indeed attributed to the process of application” (p. 91). ABA-based interventions have been popular with children with autism since the 1980s and can be linked to the work of Ivar Lovaas (1987).

Numerous studies have demonstrated and documented the effectiveness of ABA-based intervention with individuals with autism. To date, ABA-based interventions have been used to support individuals with autism in at least six ways (Shaping Behavior, 2008):

1. To increase behavior;

2. To teach a new skill;
3. To maintain behaviors;
4. To generalize or to transfer behavior from one situation or response to another;
5. To restrict or narrow conditions under which interfering behaviors occur; and
6. To reduce interfering behavior.

According to Baer et al. (1968) and Heward, Heron, Neef, Peterson, Sainato, Cartledge, et al. (2005), ABA has the following characteristics:

**Applied.** ABA focuses on areas that are of social significance. Behavior scientists not only take into consideration long-term behavior change, but also look at how behavior changes affect the individual and the people around.

**Behavioral.** The behavior must be objectively measured and must change.

**Analytic.** The behavior scientist must demonstrate control over the behavior with intervention while maintaining ethical standards.

**Systematic.** ABA interventions and procedures must be very detailed so that other researchers are able to replicate the application with the same results.

**Generalizeable.** The results of an ABA-based intervention must last over time, across settings, and spread to other behaviors not directly addressed.

**Data-based.** ABA uses direct and frequent measurements to enable analysts to detect their success or failures so that appropriate changes can be made.

Many programs use some or all of the components of ABA, and sometimes are referred to ABA programs. However, calling a program ABA does not indicate which specific interventions are used. Indeed, there is no single intervention called ABA.

Programs that are commonly referred to as having ABA-based interventions include (a) Young Autism Project or Lovaas Model (Lovaas, 1987), (b) Princeton Child Development Institute (Fenske, Zalenski, Krantz, & McClannahan, 1985), (c) Douglass Developmental Disabilities Center at Rutgers University (Handleman, Harris, Gordon, Kristoff, & Fuentest, 1991), (d) the River Street Autism Program (Dyer, Martino, & Parvenski, 2006), (e) Therapeutic Pathways (Howard, Sparkman, Howard, Green, & Stanislaw, 2005), (f) Walden Program (McGee, Morrier, & Daly,

1999), (g) the Institute for Child Development at State University of New York (Romanczyk, Lockshin, Gillis, & Matey, 2006), (h) Autism Partnerships (Leaf, McEachin, & Harsh, 1999), (i) May Institute (Luce & Christian, 1989), (j) Pivotal Response Treatment (Koegel, Koegel, Shoshan, & McNERney, 1999), (k) Alpine Learning Group (Meyer, Yaylor, Cerion, Fisher, Moran, & Richard, 2006), (l) Pyramid Approach (Bondy & Battaglini, 2006), (m) Verbal Behavior (Partington, 2005), (n) Eden Model (Holmes, 1998), (o) STAR Program (Arick, Krug, Loos, & Falco, 2005), (p) Learning Experiences and Alternative Program for Preschoolers and Their Parents (LEAP; Strain & Hoyson, 2000), (q) Project Data (Schwartz, Sandall, McBride, & Boulware, 2004), and (r) Gentle Teaching (McGee, Menolascino, Hobbs, & Menousek, 1987).

## SUMMARY

ABA is a framework for the practice of a science that systematically applies interventions based upon the principles of behavior theory to improve socially significant behaviors. It emphasizes explaining behavior in terms of external events that can be manipulated. Techniques and principles associated with ABA include discrete trial training, errorless learning, incidental teaching, prompting, fading, shaping, etc. The effectiveness of individual ABA-based interventions with individuals with autism is well documented.

## RESEARCH TABLE

No table is presented here as ABA is not a single intervention. Please refer to individual interventions listed under the description.

## REFERENCES

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## RESOURCES AND MATERIALS

- Association for Behavior Analysis International: [www.abainternational.org/ba.asp](http://www.abainternational.org/ba.asp)  
This link takes the user directly to the behavior analysis portion of the larger website.
- Autism Intervention Information: <http://knospe-aba.com/cms/en/home.html>  
The goal of this website is to be a resource for parents; it includes links to other resources.
- B. F. Skinner Foundation: [www.bfskinner.org](http://www.bfskinner.org)  
Though non-functional at the time of this publication, this site includes a downloadable program for instructors to use in the classroom.
- Behavior Analyst Certification Board (BACB): <http://www.bacb.com/>  
Part of the website for the BACB, this link directs the user to an overview of ABA. Other links on this website include a list of board certified analysts and helpful consumer information.

- Fovel, J. Tyler (2002). *The ABA program companion: Organizing quality programs for children with autism and PDD*. New York: DLR Books, Inc.  
This excellent new manual and CD is geared towards helping the reader integrate important theories and concepts from ABA into powerful, practical and comprehensive educational programming, from assessment through program methodology and evaluation of results. Topic summaries, key concepts, question lists and references are found throughout the manual, along with reproducible data forms in order to organize and expedite program development.
- Harris, S. and Weiss, M.J. (2007). *Right from the start: Behavioral intervention for young children with autism*. 2<sup>nd</sup> Ed. Bethesda, MD: Woodbine House.  
Parents of young children--ages 18 months to 5 years--recently diagnosed with autism, face the critical decision of which educational treatment program to choose for their child. To help guide them through this complex decision-making process, parents can turn to the revised and updated edition of *Right from the Start*. This second edition covers programs that use Early Intensive Behavioral Intervention, a highly effective treatment based on Applied Behavior Analysis (ABA).
- Lovaas, O. I. (1977). *The autistic child: Language development through behavior modification*. New York: Irvington Press.
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These three books discuss the various applied behavior analysis strategies.
- Mueller, M. M., Palkovic, C. H., & Maynard, C. S. (2007). Errorless learning: Review and practical application for teaching children with pervasive developmental disorders. *Psychology in the Schools*, 44(7), 691-700.  
This journal article reviews the literature on errorless learning and provides examples.
- Polyxo.com: Teaching Children with Autism: <http://www.polyxo.com/>  
This teacher resource offers foundational concepts for developing an ABA program.
- Pratt, C. & Dubie, M. (2008). "Observing Behavior Using A-B-C Data." IRCA Articles. <http://www.iidc.indiana.edu/irca/behavior/abcData.html>

## 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.

Current modules are:

- Assessment for Identification
  - Home Base
  - Peer-Mediated Instruction and Intervention (PMII)
  - Picture Exchange Communication System (PECS)
  - Pivotal Response Training (PRT)
  - Preparing Individuals for Employment
  - Reinforcement
  - Restricted Patterns of Behavior, Interests, and Activities
  - Self-Management
  - Social Supports for Transition-Aged Individuals
  - Structured Teaching
  - Structured Work Systems and Activity Organization
  - Supporting Successful Completion of Homework
  - The Incredible 5-Point Scale
  - Time Delay
  - Transitioning Between Activities
  - Visual Supports
- Interactive Collaborative Autism Network (iCAN) <http://www.autismnetwork.org>  
iCAN offers free online instructional modules on autism spectrum disorder (ASD). Modules have been developed in these areas:
    - Characteristics
    - Assessment
    - Academic Interventions
    - Behavioral Interventions
    - Communication Interventions
    - Environmental Interventions
    - Social Interventions
  - 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/irca/ftrainpapers.html>
    - IRCA Modules <http://www.iidc.indiana.edu/irca/fmodules.html>
  - 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:

- Autism 101: Top Ten Pieces to the Puzzle
- Autismo 101: Las 10 piezas principales del rompecabezas
- Asperger Syndrome 101 Online
- Asperger Syndrome 101 Online
- Navigating the Social Maze: Supports & Interventions for Individuals with Autism Spectrum Disorders
- Communication: The Power of Communication for Individuals with Autism Spectrum Disorders
- Communication: The Power of Communication for Individuals with Autism Spectrum Disorders