Comprehensive Model: Applied Behavior Analysis (ABA)

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 interventions 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
6. To reduce interfering behavior

According to Baer et al. (1968) and Heward et al. (2005), ABA has the following characteristics:

1. **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 surrounding people.

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

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

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

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

6. **Data-based.** ABA uses direct and frequent measurements to enable analysts to detect their success or failures so that appropriate changes can be made.
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Many programs use some or all of the components of ABA, and are sometimes referred to as 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:

- Young Autism Project or Lovaas Model (Lovaas, 1987)
- Princeton Child Development Institute (Fenske, Zalenski, Krantz, & McClannahan, 1985)
- Douglass Developmental Disabilities Center at Rutgers University (Handleman, Harris, Gordon, Kristoff, & Fuentest, 1991)
- The River Street Autism Program (Dyer, Martino, & Parvenski, 2006)
- Therapeutic Pathways (Howard, Sparkman, Howard, Green, & Stanislaw, 2005)
- Walden Program (McGee, Morrier, & Daly, 1999)
- The Institute for Child Development at State University of New York (Romanczyk, Lockshin, Gillis, & Matey, 2006)
- Autism Partnerships (Leaf, McEachin, & Harsh, 1999)
- May Institute (Luce & Christian, 1989)
- Pivotal Response Treatment (Koegel, Koegel, Shoshan, & McNerney, 1999)
- Pyramid Approach (Bondy & Battaglini, 2006)
- Verbal Behavior (Partington, 2005)
- Eden Model (Holmes, 1998)
- STAR Program (Arick, Krug, Loos, & Falco, 2005)
- Learning Experiences and Alternative Program for Preschoolers and Their Parents (LEAP; Strain & Hoyson, 2000)
- Project Data (Schwartz, Sandall, McBride, & Boulware, 2004)
- Gentle Teaching (McGee, Menolascino, Hobbs, & Menousek, 1987).

**Applied Behavior Analysis (ABA) Research Summary**

<table>
<thead>
<tr>
<th>Ages</th>
<th>Skills/Intervention Goals</th>
<th>Settings</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>2–50 years</td>
<td>Social, communication, improving challenging behaviors, gross and fine motor, concentration, independence, teaching fluent relational responding, functional play, describing emotion, attending, choice</td>
<td>Home, school, clinic</td>
<td>Many applied behavior analytic interventions meet criteria as a NPDC evidence-based practice. Frequently, one or more components are combined for one intervention (i.e., reinforcement is used with many other interventions).</td>
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</tbody>
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*The information found in the Research Summary table is updated yearly following a literature review of new research and this age range reflects information from this review.*
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Research


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**Steps for Implementation**

Applied behavior analysis (ABA) methods are extremely varied and range from training children in school and home settings to helping large organizations implement broad organizational change. Consequently, there is not a specific set of steps that are consistently followed. However, ABA principles suggest some consistent features.

A. Identify a target behavior. The behavior must be defined in observable and measurable terms.

B. Set the criteria for behavior change. The target behavior needs to be socially valid: will changing this behavior make a meaningful difference in this person’s life?

C. Determine the most efficient way to measure the behavior.

D. Determine the method for visual representation of the behavior change, based on the graphic display that will best represent the behavioral data (e.g., graphs, charts).

E. Determine the treatment design and intervention.

F. Begin the intervention by collecting baseline data.

G. Include generalization and maintenance in the behavior change plan.

H. Evaluate the effectiveness of the behavior change plan, based on the data analysis.

I. Monitor behavior change and make changes to the plan as determined by the data analysis.