



# **HARBOR REGIONAL CENTER**

## **Techniques and Terms in Applied Behavior Analysis and Related Services**

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## **I. Introduction**

Intensive Behavioral Intervention (IBI) refers to programming for children with autism that almost always includes a structured treatment approach called Applied Behavioral Analysis (ABA) as well as other educational programming such as speech therapy and occupational therapy. It is called intensive because it typically requires at least 5 and sometimes as many as 30 hours per week of direct work with the child.

ABA techniques apply behavioral principles to help children in a number of ways. These include: teaching new skills (e.g., self-care, self-direction, and communication); reducing aggressive or problematic behavior (e.g., self-injury, repetitive behavior, and disruptive behavior); maintaining functional and socially appropriate behaviors (e.g., encourage previously learned skills, teach and use social skills in a variety of different settings); and generalizing behavior from one situation to another (e.g., playing at home with sibling to playing with peers at school).

Because these techniques focus on behavior change, there are reliable ways to determine whether they are being effective in helping a child. This is usually done through formal assessments (tracking and recording of behaviors) conducted regularly over time. An assessment is done before starting treatment to establish a “baseline.” Data from additional assessments is then compared to the baseline as a measure of progress.

## II. Common Behavioral Techniques Based on ABA for Individuals with Autism

Below are some of the techniques commonly used in ABA programs for children with autism. No one treatment method has been shown to be better than another, although there is research suggesting that an ABA program should usually include “naturalistic” (as described below) techniques. Parent education is a component of all techniques.

### A. Discrete Trial Training (DTT)

Discrete-trial training is a highly structured teaching technique that often involves a teacher working one-to-one with a child with autism in a distraction-free setting. This type of intervention involves arranging a series of learning opportunities (called trials) that have a clear beginning and a clear end.

1. A discrete trial is composed of three components:

- a. A child is provided with an instruction or cue:  
The child is presented with a car and asked, “Push the car?”
- b. A child has the opportunity to respond to the instruction or cue:  
The child pushes the car.
- c. A consequence is delivered. The type of consequence depends on how the child responds:  
If the child responds correctly he is praised, “You pushed the car!! Great job pushing the car!”  
  
If the child does not respond correctly, the adult places a hand over the child’s to help him complete the action and says, “This is pushing the car.”

2. The technique involves:

- a. breaking down a skill into parts:  
In this example, the parts would be touching the car, moving it a small distance, then moving it a larger distance.
- b. teaching each part in sequence until the child can complete the whole skill:  
The child learns first to touch the car, then to make it roll, and then to push it.
- c. repeatedly practicing the skill:  
The interventionist asks the child to push the car several times; parents, other caregivers, etc. ask the same thing of the child until he can do it with consistency.
- d. using prompts to encourage the desired response:  
If the child hesitates or gives an incorrect response, the parent may put the child’s hand on the car to encourage the correct response.
- e. rewarding correct responses:  
When the child gives a correct response, he is given something he likes, such as a toy, a “high five,” or verbal praise.

## **B. Naturalistic Strategies**

Naturalistic strategies involve teaching in a natural manner or using the child's motivation. The techniques are different from DTT in that the instructor "follows the child's lead," creating a "teaching moment" using whatever the child is interested in at the time. Desired responses are reinforced by allowing the child access to what he wants in that moment. The two most common types of naturalistic strategies are:

1. ***Incidental Teaching*** is a child-led technique that capitalizes on naturally occurring opportunities. Any sign that a child is interested in something is taken as an opportunity to engage and teach.  
Example. A child requests, "want car." The parent asks the child whether he wants the green car or the red one. The child would then receive the car if he demonstrated more elaborate language by asking for the red one.
2. ***Pivotal Response Training (PRT)*** is similar to incidental teaching but provides more structure within the teaching sessions. In PRT, rather than relying heavily on "teachable moments" to arise, the environment is organized to provide a limited number of choices for the child in order to better direct the therapy toward specific goals. Important techniques used in PRT include the use of clear instructions and questions, allowing the child to choose activities, rewarding attempts at correct responses, varying activities, practicing tasks the child already knows, turn taking, and using natural rewards.  
Example. The child is playing with his toy train, moving it around the track. He is going to push the train over a bridge. Mom holds the train still and asks the child, "Is the train going to go over or under the bridge?" The child responds, "Over the bridge." The child is then given praise "You're right! He's going over the bridge!" and allowed to proceed in playing with the train.

## **C. Functional Communication Training**

This approach teaches individuals who do not have the use of spoken language to express wants, needs, or ideas through alternative means. Often the inability to communicate effectively results in undesired behavior that is intended as communication. Giving the person the ability to communicate through alternative means lessens that person's need to engage in the undesired behavior. Functional communication techniques are discussed later in this document.

### III. Treatments Commonly Used in Combination with ABA

- A. **Parent Education**— In this approach the teacher explains and models the techniques for the parent, then allows the parent to practice the skill with guidance. Guidance continues until the parent can teach the skill or manage the behavior independently.
- B. **Social Skills Training** — This intervention is a form of behavior therapy for children who have difficulties relating to other people. Social skills enable a person to initiate and maintain positive social relationships. These skills include communication, problem-solving, decision-making, self-monitoring, and initiating and maintaining peer relations. Social skills training helps children develop specific skills such as greeting another person, saying goodbye, and responding when addressed.
- C. **Speech Therapy** — This type of therapy focuses on *receptive* language, or the ability to understand spoken words, and *expressive* language, or the ability to use words to communicate. It also addresses the ability to produce the sounds necessary to make words. Speech therapy with children generally involves helping the child reach age-appropriate milestones. Therapy may involve exercises to strengthen the tongue and lips, such as blowing on whistles or licking lollipops. To develop language, therapy might involve using games to help find the right words, help with understanding language, or participating in conversation.
- D. **Augmentative Communication** — This term refers to methods of communication that enhance or take the place of spoken language. This approach can take a variety of forms, including use of gestures, pointing, sign language, PECS (see below), and technology (electronic devices). Each approach has its advantages and disadvantages, so the decision on which to choose should be based on a comprehensive evaluation of the child’s communication and social skills.
  - 1. **Picture Exchange Communication System (PECS)** — PECS enables a child with limited or no speech to use pictures to make requests and express ideas.  
Example. A child who wants an apple would look at the front of his communication book and pull off the picture of the apple to request the apple. This process can become more complicated as the child progresses through the PECS program.
  - 2. **American Sign Language (ASL)** — ASL is an approach that uses hand shape, position, and movement; body movements; gestures; facial expressions; and other visual cues to form words.

#### IV. Common ABA Terms

- A. A-B-C** — Antecedent, Behavior, Consequence: terms referring to a behavior of interest and what typically happens before and after the behavior occurs.
1. **A = Antecedent** — something in the environment that occurs before the behavior of interest.  
Example. A child sees his mother pick up a neighbor’s baby.
  2. **B = Behavior** — anything a person does.  
Example. The child hits the mother.
  1. **C = Consequence** — something in the environment that occurs after the behavior of interest that may make the behavior more or less likely to occur in the future.  
Example. After being hit the mother puts the child in time-out. This may make the behavioral less likely to occur in the future. If, on the other hand, the mother puts the baby down, the behavior may be more likely to occur in the future.
- B. Baseline** — how often a behavior occurs and how severe it is before an intervention is put in place to change it. The baseline is the standard against which the effectiveness of the intervention is measured.  
Example. During baseline, before intervention, Jack clapped his hands on request 0 out of 5 times.
- C. Behavioral Momentum** — the child has repeated success with easy tasks upon request which builds confidence to respond when harder tasks are then presented. Harder tasks are presented in context of the easier ones to capitalize on the child’s “momentum.”  
Example. The child can successfully respond to clap hands, touch nose and stomp feet but is only learning to stand up upon request. In teaching, the interventionist would ask “touch nose,” “clap hands,” then “stand up.” This would allow the child to have success before being asked to perform the difficult task.
- D. Chaining** — sequencing simple behaviors into a more complex behavior (i.e., creating a chain) and incrementally reinforcing the child for completing each desired step until he completes the entire chain. Completing each step of the chain prompts the child to complete the next step.  
Example. To wash hands, one must turn on the water, get soap, rub hands together, rinse hands, turn off faucet, and dry hands. The child is taught first to turn on the water and is reinforced for this behavior. The child is then taught to turn on water and get soap, and is reinforced for displaying these two behaviors together. This pattern continues until the child can successfully complete all of the required behaviors in the proper sequence.
- E. Echoic** — imitating a sound, word, or phrase.  
Example. The therapist says “duh” and the child responds by saying “duh.”
- F. Extinction** — not allowing the child to achieve his goal by engaging in an undesirable behavior.  
Example. Nancy will often cry to get attention from adults. In extinction, the adults do not attend to Nancy when she is crying. Instead, the adults would give attention to Nancy when she is not crying.

- G. Extinction Burst** — the increase in an undesired behavior that may occur when beginning an extinction procedure.  
Example. Using the example from above, if Nancy no longer gets attention for crying then she may become louder and cry more often to get attention. The extinction technique should be maintained, even in the presence of an extinction burst, i.e. do not provide Nancy with attention when crying, especially if the crying worsens. Before beginning this procedure think about how bad a behavior can become. The key to extinction is to either do it consistently until the behavior ceases or do not do it at all.
- H. Fading** — decreasing the number of prompts and type of prompts given during teaching to allow the child to become increasingly independent in the task. Fading continues until all prompts have been removed or no more prompts can be removed.  
Example. When learning to unscrew the lid of a toothpaste container, the child may at first have his hand physically guided by an adult; in following sessions, the adult may point to the toothpaste, then verbally request that the child unscrew the top, and finally allow the child to unscrew the toothpaste container without a prompt.
- I. Function** — the reason a behavior occurs.  
Example. Every time Johnny throws a toy, his mother gives him a new toy. Absent of any other information, one would conclude that the function of this behavior is to get a new toy.
- J. Functional Behavioral Assessment** — an evaluation of behavior that looks at what happens before the behavior and what happens after a behavior in order to determine when and why the behavior occurs. The person performing the assessment conducts interviews, reviews data, and directly observes the child over several days in several locations.  
Example. The assessment may show that that the child becomes aggressive only in the presence of his preschool teacher when that teacher puts demands on the child. It also may indicate that, whenever the child throws a tantrum, the preschool teacher removes the demand.
- K. Functional Analysis** — a relatively complex evaluation of behavior that has an added step of testing to determine if the reason believed to be causing the behavior is valid. Sometimes the assessors have narrowed down the cause to two possible reasons, if this were the case they would need to test which one reason is causing the behavior. To do this, the assessors would set up different situations in which the target behavior would be addressed.  
Example. Tommy hits his teacher sometimes when she sits next to him at his desk during a color sorting drill. His teacher reacts by explaining to Tommy why he shouldn't hit and placing him in time-out. When he comes back she gives him another activity to do. During assessment the clinician would test to figure out such things as if the task is too difficult, if the environment is too distracting, or if the child needs more structure. This will allow for an appropriate intervention to be selected and a more appropriate behavior that serves the same purpose to be taught.
- L. Generalization** — using skills across different times, people, responses, and settings.  
Example. The child learns to say “hello” instead of always saying “hi” as he was taught, or says “bird” in front of an actual bird while on a walk instead only while looking at a picture of a bird.

- M. Instructional Control** — when a child responds to a person, item, or situation that he has been taught to respond to.  
Example. A child complies with a request from an instructor with whom he has worked for a substantial period of time but will not comply to the same request when it is made by person whom the child knows less well. The instructor has instructional control.
- N. Label** — to vocally name an item.  
Example. The picture is shown and the child labels the picture of the cat by saying “cat.”
- O. Mand** — a request made either verbally or with a gesture.  
Example. A child requests a cookie either by verbally asking for one or by pointing at the cookie jar.
- P. Positive Behavioral Support (PBS)** — an individualized technique that is used in the home and/or community to prevent or reduce problem behaviors and build appropriate behaviors using positive means. Positive supports are intended to result in lasting behavior change that improves the quality of life for the parent and the child. Parents are primarily responsible for implementation of PBS.  
Example. Joshua has a difficult time eating dinner with the family. Parents are taught to create and follow a dinner routine and reward Joshua for remaining seated during dinner time.
- Q. Prompt** — any assistance (i.e., hand-over-hand, verbal, pictures, written, gestured) provided to the child to help him respond correctly. A prompt is sometimes referred to as a cue.  
Example. Prompts in ABA include: pointing to an item while asking the child to get the item; standing behind a child and placing hands over his to zip up a coat, and asking the child to get the ball while showing him a picture of the ball.
- R. Reinforcement** — an act that that increases the likelihood of the behavior occurring again in the future; often a reward for a correct response.
- 1. Positive Reinforcement** — adding something that increases the likelihood that a behavior will occur again in the future. What will be effective as a positive reinforcer varies across children and across situations.  
Example. A child is given a toy (reinforcer) after using words to request a toy (desired behavior). Since his request was successful, he will likely use words for this purpose in the future.
  - 2. Negative Reinforcement** — removing something that will increase the likelihood of the behavior occurring again in the future.  
Example. A child who doesn't like to take a bath has a tantrum at bath time and his parents relent and don't make him bathe. This increases the likelihood that the next time the child is asked to take a bath he will have a tantrum. By their action, the parents have negatively reinforced the tantrum, increasing the likelihood that the child will engage in this behavior when told to take a bath.

- 3. Differential Reinforcement** — when two or more behaviors occur simultaneously, one behavior is reinforced and the others are ignored. Three types of differential reinforcement are:
- a. Differential Reinforcement of Alternative Behaviors (DRA)** — the child is reinforced for engaging in chosen behaviors that are different from the target behavior.  
Example. The child is reinforced for pinching a small stuffed animal instead of a person.
  - b. Differential Reinforcement of Other Behaviors (DRO)** — the child is reinforced for engaging in any behavior other than the target behavior.  
Example. The child is reinforced for not pinching anyone or anything.
  - c. Differential Reinforcement of Incompatible Behaviors (DRI)** — the child is reinforced for engaging in a behavior that physically cannot happen at the same time as the target behavior.  
Example. The child is reinforced for walking with hands in his pants pockets with his thumbs out. (When doing this he is unable to pinch).
- S. Replacement Behaviors** — behaviors that serve the same function as the challenging behavior. The child should be able to accomplish the replacement behavior as quickly and easily as the challenging behavior.  
Example. A child grabs toys away from other children when he wants them is instead taught to ask the other child for the toy. The behavior is grabbing the toy; the replacement behavior is asking for the toy. In order for this technique to be effective the child would always have to be successful when he asks for the toy.
- T. Shaping** — rewarding successful approximations of a desired behavior that lead to performing the entire desired behavior independently.  
Example. A child who is being taught to say the word “mom” is reinforced for making the “m” sound, then for making the “mo” sound, etc.
- U. Tact** —to label.  
Example. A report from the provider would indicate that the child is able to tact 35 items.
- V. Task Analysis** — breaking down a complex skill into a series of smaller simple skills that are appropriate to the functioning level of the child.  
Example. Brushing teeth requires: open toothpaste, put paste on toothbrush, close toothpaste, brush teeth, rinse, spit, rinse toothbrush, and put toothbrush away.
- W. Transitioning** — switching from one activity to another.  
Example. When computer time ends and it is time to go (transition) to the floor for circle time. Transitioning is often difficult for children with autism.

**V. Other Commonly Known Programs**—Although the following three programs may contain elements of ABA such as, shaping or positive reinforcement, they are not strictly ABA. Each of the programs has its own specific methods for teaching children with autism.

- A. Floortime / Developmental Individual Difference Relationship-based (DIR)** — A treatment method, as well as a philosophy, that takes a social rather than behavioral approach to the achievement of developmental goals. Instead of requiring the child to engage in a structured activity, the parent / therapist joins the child in play. In contrast to behavioral approaches where the therapist “leads” the activity, in the Floortime approach the child leads during a teaching session. According to Dr. Greenspan, when children are able to understand and regulate their emotions, they are able to regulate their behavior. Initially, the Floortime approach consists of parent / therapist entering and joining into the child’s preferred play activities without making any demands on the child. The parent / therapist follows the child’s cues and works within their sphere of interest, gradually introducing observation, parallel play and ultimately, turn taking and interaction.
- B. Relationship Development Intervention (RDI)** — Based on the belief that the development of “dynamic intelligence” is the key to improving the quality of life for individuals with autism. The core philosophy is that individuals with autism can participate in authentic emotional relationships if they are exposed to them in a gradual, systematic way. The goal of treatment is to systematically build up the motivation and tools needed for successful interaction in social situations and correct deficits in this area that are thought to be common to all people with autism. RDI focuses on developing the building blocks of social connection that normally develop in infancy and early childhood. RDI is a family-based program, where trained consultants support families to alter their interaction and communication styles. RDI is not a behavioral approach and it does not view Autism Spectrum Disorder as a behavioral disorder. Instead, it views Autism Spectrum Disorder as caused by a lack of connections between two regions of the brain.
- C. TEACCH (Treatment and Education of Autistic and Related Communication Handicapped Children)**— TEACCH classrooms emphasize teaching skills to children in a structured setting, which includes a clearly defined workspace, a lack of clutter, and the use of a visual schedule to allow the child to understand how he/she will proceed from activity to activity and to aid in transitions. In TEACCH programs, behavioral techniques are used to aid in skill development. This approach is also called “structured teaching.”

## VI. Resources of Interest

*The following books and videos which are available in the HRC Resource Center contain current information for parents and caregivers of people with disabilities.*

### **Books**

1. Activity Schedules for Children with Autism, by Lynn E. McClannahan, Ph.D.  
*This book fully describes in easy-to-understand terms, everything you need to know in order to develop successful activity schedules for children with autism.*
2. A Picture's Worth, by Andy Bondy Ph.D.  
*Parents of children with autism can significantly improve their son's or daughter's ability to communicate using the visual communication strategies described in A Picture's Worth. This easy-to-understand guide presents in detail the Picture Exchange Communication System (PECS)-pictures used by a child to express his needs and desires without a prompt from another person-as well as an overview of other augmentative and alternative communication systems.*
3. A Work In Progress, by Ron Leaf  
*This text is a collection of ideas and programs for building skills as well as strategies for dealing with challenging behaviors. It is a comprehensive guide that is presented in user-friendly language.*
4. Behavioral Intervention For Young Children with Autism, by Catherine Maurice  
*This book answers commonly asked questions and addresses many issues affecting individuals with autism including treatment, behavior intervention, and various programs that can help individuals and teach new skills.*
5. Do-Watch-Listen-Say, by Kathleen Ann Quill  
*This is a comprehensive assessment and intervention guide featuring assessment tools with hundreds of creative ideas to promote social and communication skills for children with autism.*
6. Educating Children and Youth with Autism, by Richard L. Simpson  
*This book provides current, up-to-date information and strategies for educators and professionals in the treatment and education of children and youth with Autism and pervasive developmental disorders. The different chapters in the book are on several different topics such as initial assessment, management, the communicative context of Autism, social competence, social interaction models, sensory systems, inclusion, transition, etc.*
7. Incentives for Changes, by Lara Delmolino and Sandra Harris  
*This guide provides parents and professionals with invaluable tools to help motivate people with autism spectrum disorders to learn and gain independence.*
8. Making a Difference – Behavior Intervention for Autism, by Catherine Maurice  
*The editors of this book worked with and interacted with large numbers of parents and professionals who are concerned about individuals with autism of all ages, from toddler hood to adult. This is an attempt to provide information about high-quality applied behavioral research and practice into understandable terms and to render it accessible to the lay public, professionals and academicians.*

9. Pivotal Response Treatments for Autism, by Robert L. Koegel and Lynn Kern Koegel  
*An innovative, state-of-the-art treatment for autism, Pivotal Response Treatment (PRT) uses natural learning opportunities to target and modify key behaviors in young children with autism, leading to widespread positive effects on communication, behavior, and social skills.*
10. Practical Solutions for Educating Children with High-Functioning Autism and Asperger's Syndrome, by Mary Jane Weiss, Ph.D.  
*This book gives us a comprehensive look at the unique educational issues facing children categorized as having high functioning autism or Asperger Syndrome. This book provides an emphasis on several key areas that are often overlooked, including student independence, social pragmatics, motivation, and collaboration among intervention team members.*
11. Reaching Out, Joining In: Teaching social skills to young children with autism, by Mary Jane Weiss  
*This book shows parents and professionals how to help young children with autism with one of their most challenging areas of development which is social behavior. The authors share their extensive experience with Applied Behavior Analysis (ABA). The book explains how children with autism develop social skills differently, and how ABA teaching tools work.*
12. Right from the Start – Behavioral Intervention for Young Children with Autism, by Sandra L. Harris  
*This text explains how the teaching method known as intensive behavioral intervention (IBI) can benefit young children with autism and related disorders.*
13. Teaching Children with Autism: Strategies for initiating positive interactions & improving learning opportunities, by Lynn Kern Koegel  
*This positive, research-based text dispels the stereotypes surrounding Autism by providing accurate information on how much children with this complex disorder can learn. The book discusses behavioral characteristics of Autism; available intervention methods, and key topics such as spontaneous language, overselectivity, social communication, and self-management.*
14. Teaching Children with Autism: Strategies to enhance communication and socialization, by Kathleen Ann Quill  
*This book describes teaching strategies and instructional adaptations which promote communication and socialization in children with autism. These strategies capitalize on the individual strengths and learning styles of the child with autism. Assessment and intervention guidelines are summarized within the appendices to assist the teacher in strategy implementation.*
15. Teaching Individuals with Developmental Delays, by O. Ivar Lovaas  
*This manual places a major emphasis on describing treatment programs confirmed effective based on methods of scientific inquiry. It reflects new changes in programs and includes extensive and detailed descriptions of how to teach each program, enabling individuals to provide more effective help. This is an essential guide for parents acting as treatment providers.*
16. Teaching Language to Children with Autism or Other Developmental Disabilities, by Mark L. Sundberg  
*The purpose of this book is to help parents and educators understand language deficits and to provide them with a guide for individualized language assessment and training.*

## **VIDEOS/DVDS**

17. Autism and Applied Behavioral Analysis, by Films for the Humanities and Sciences 2004  
*This ABC news program profiles two children with autism who receive intensive applied behavioral analysis therapy.*
18. Children and Autism Time is Brain  
*This DVD explains applied behavior analysis as a treatment intervention for children with autism. It includes interviews with board certified behavior analysts and a curriculum specialist.*
19. Embracing Play, by Hilary Baldi  
*This video teaches parents how to keep their child with autism engaged. Parents discuss the importance of play in the development of a child with autism. The video shows parents how to engage in object focused play and structure a play area.*

## **VII. Websites of Interest**

To learn more about IBI services, visit the following websites.

Association for Behavior Analysis:  
[www.abainternational.org](http://www.abainternational.org)

California Association for Behavior Analysis  
[www.calaba.org](http://www.calaba.org)

Behavior Analyst Certification Board  
[www.bacb.com](http://www.bacb.com)

Cambridge Center for Behavioral Studies  
[www.behavior.org](http://www.behavior.org)

Association for Science in Autism Treatment  
[www.asaonline.org](http://www.asaonline.org)

National Institute on Deafness and Other Communication Disorders  
[www.nidcd.nih.gov/health/hearing/asl.asp](http://www.nidcd.nih.gov/health/hearing/asl.asp)