Applied Behavior Analysis (ABA) Overview

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Applied behavior analysis (ABA) is a method that is used to teach changes in behavior. ABA came from the science of behavior, and can help people with and without disabilities learn, change behavior, and may result in the ability to live a higher quality of life.

ABA is not a single "thing" or technique. It is a large group of procedures and principles that are combined to help teach new skills, generalize behaviors (or use them across different settings), and reduce challenging behaviors. Many do not know that behavior principles are used every day in many ways to cause people to change their behavior and the actions they take. This even includes marketing and advertising. Here is an example of how ABA works in our everyday lives:
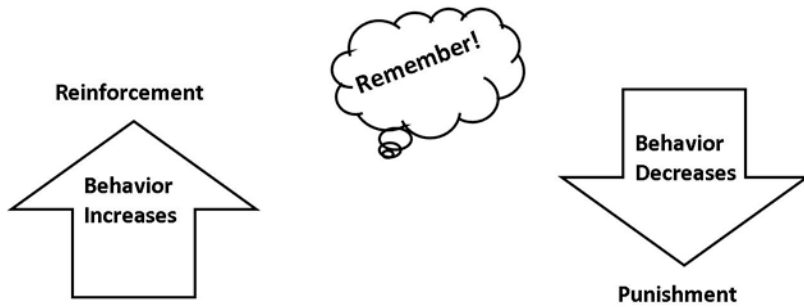
Example 1:

- You wear a new red sweater you got for your birthday.
- Your husband says "Wow, that's a great color on you!" This compliment made you feel really happy and confident.
- You decide to wear your red sweater more often.

Note: Anything that happens after a behavior (called a consequence) that causes it to increase is a reinforcer. You were reinforced for wearing your red sweater with your husband's compliment. This caused you to wear your red sweater more often, meaning the compliment was a form of reinforcement.

Example 2:

- A teacher asks a question in her 4th grade science class. A student raises his hand and answers the question, and gets the right answer.
- The teacher cheers "wow that is so great, good job, that was such a great answer—way to go!"
- This response embarrasses the student and he feels humiliated in front of his peers. He does not answer questions in science class again.

Note: Anything that happens after a behavior (called a consequence) that causes it to decrease is punishment. In this case, the student's behavior of raising his hand and answering a question was punished, and his behavior of raising his hand decreased. Note: a punishment is not always something undesired (or aversive) to someone. It depends on the person and how a consequence affects their behavior (by decreasing the chance the behavior will happen in the future).

Reinforcement

Behavior
Increases

Remember!

Behavior
Decreases

Punishment

Other ways you use behavior principles in everyday life include using a calendar or checklist to track or get things done (this is self-management); break down a job for a co-worker into tasks so they could learn how to do the job (task analysis); or reward your dog with a treat for coming to you (reinforcement). We use principles of behavior all day in and through our lives as a natural way of interaction with others. Our behaviors change based on the environment and how others respond to us, what we need, and the wants and needs of others.

ABA also has been very helpful in reducing very serious behaviors such as aggression and self-injurious behavior. ABA has proven to work well in teaching people with many different types of learning styles and developmental disabilities and is considered an evidence-based practice treatment approach for individuals with autism spectrum disorder (ASD). This means there is a lot of research that has been duplicated over and over supporting that fact that it works. This also means that professionals, families, and individuals can use the intervention and find it valuable. Examples of new skills that could be taught include how to make requests (instead of screaming or crying), a bedtime routine, social skills, how to ride a bus, how to add numbers, and much more. Learning is broken down to help the person learn in a step by step way. As the person learns, data is taken to make sure progress is being made toward the learning goal. Using positive reinforcement is a very important part of ABA as it helps motivate the person in learning skills, especially skills that are really difficult for the person. Everyone has different things that reinforce them, so understanding what that is for each person is very important for behavior change. Reinforcement can then be reduced (or faded) over time and as skills are gained so the person does not become dependent on it.

Many schools use various principles of ABA through Positive Behavioral Interventions and Supports (PBIS), which also uses many procedures and practices from the science of behavior and is thought of as a best practice. Many schools adopt PBIS as an approach for all students. Examples of behavior procedures used by PBIS include visual supports, self-management systems, functional behavior assessments (FBAs), Behavior Intervention Plans (BIPs), reinforcement, token systems, data collection, observing behaviors, and other procedures (Horner & Sugai, 2015).

ABA in Private Treatment and School Settings

A medical diagnosis for a disability is not the same as a special education eligibility for services under the Individuals with Disabilities Education Act (IDEA). A medical diagnosis is provided by a physician or private licensed psychologist, and special education evaluations are done by professionals at a school. Each evaluation allows for different types of services. Many times, these two evaluations agree, but sometimes they can be different. Many families do not know this. For those with a medical diagnosis, access to medical treatments and therapies becomes available. For those who meet special education eligibility, access to special education services defined by IDEA becomes available. When children are medically diagnosed at an early age for disabilities such as autism spectrum disorder (ASD), private therapies including ABA (early intensive behavioral intervention) have been shown to be very helpful in building skills and reducing challenging behaviors. Learning how to communicate to get needs met is very important during this time and can carry over to their formal education, starting at or before kindergarten. This is called functional communication—the communication serves a function or purpose. Once the child starts school there is great benefit in spending time with peers and being part of their school community. If they have an individualized family service plan (IFSP) or individualized education program (IEP), they are also entitled to a free appropriate public education (FAPE) in the least restrictive environment (LRE) according to their rights defined in IDEA.

Some families want their children to be in ABA programs during the school day. This may violate their legal right to FAPE in the LRE in the public-school setting. This can sometimes cause disagreements with the family and school. Continuing ABA therapy outside of school can be helpful, especially when it is done in a natural environment, for example working on social skills or skill building in the community or at school. The Michigan Medicaid ABA Benefit also supports ABA treatment for children with autism and discusses the importance of ABA therapy not removing (supplanting or displacing) the child from their formal education for ABA services. Some families choose to home school their children and enroll them in partial or all-day ABA programs. This is within a family's right, but might not allow for the child to be educated with non-disabled peers. This might reduce academic and social opportunities that could be helpful as the child moves through (transitions) school and into adulthood after high school.

ABA Resources

- Horner, R. and Sugai, G. (2015). School-wide PBIS: An example of applied behavior analysis implemented at a scale of social importance. Behavior Analysis in Practice, 1(10), 80-85.
- May Institute, Applied Behavior Analysis (ABA) Questions and Answers.
- Michigan Medicaid Applied Behavior Analysis and Autism Service Provider FAQ: excellent overall FAQ on ABA and what Medicaid provides. Section on "CMH Services and School Services". It may be helpful in explaining some of the Medicaid services for ASD, the referral and intake process, and more.

Basic ABA Terms

Antecedent: What happens right before a behavior.

Applied Behavior Analysis (ABA): A group of principles, strategies, and procedures used to teach, manage, increase, and reduce behaviors. Different ABA approaches include Behavior Skills Training (BST), Discrete Trial Teaching (DTT), Incidental Teaching, Verbal Behavior, Early Intensive Behavioral Intervention (EIBI), Pivotal Response Treatment (PRT), and others.

Behavior: Must be able to observe and measure a behavior.

Behavioral Contract: A plan that is agreed upon by those involved, including the individual whose behavior is being monitored. It can include expected behaviors, consequences, and goals.

Behavior Intervention Plan (BIP): A BIP is created after an FBA is done and include target behaviors, the intervention plan to increase or reduce targeted behaviors, and how the behaviors will be measured.

Board Certified Behavior Analyst (BCBA) and BCBA-Doctorate: A therapist who has received in-depth training on the science of behavior, behavior principles, data collection and analysis, procedures, assessment, treatment, supervision, completed extensive field work, and passed an international board exam. They can assess clients, create treatment plans, supervise treatment plans, review results of programming, and make needed changes. There are ongoing training requirements for BCBA or BCBA-D therapists.

Chaining: Linking multiple steps of teaching together. Used once a task analysis is done and chaining can be taught from the beginning to end of the chain, or from the end back to the beginning.

Consequence: What happens right after a behavior and can be good or bad (it can be anything).

Discrete Trial Teaching (DTT): A common way of teaching a new skill. A single task or concept is taught in a repetitive way, with each attempt being called a "trial". A chance to respond is provided to the individual with a certain response expected. An example of a trial is for the teacher to say: "tell me your name" and the child responds or does not respond, with reinforcement given for correct responses.

Echoic: Individual is able to verbally imitate when asked.

Extinction: Reducing an unwanted behavior by not providing reinforcement for a behavior that was reinforced in the past.

Extinction Burst: A temporary increase in a behavior when an extinction procedure is used.

Fading: Decreasing the level of help needed to complete a task. The goal is independence, so we would fade prompts used to teach a skill.

Fluency: Ability to do tasks easily, automatically, quickly, and correctly.

Functional Behavior Assessment (FBA): A procedure used to better understand why a behavior is happening. The behavior is observed and data is recorded about the behavior. This includes what happened just before the behavior (called an antecedent), what the behavior was and looked like, and what happened right after the behavior (called the consequence), which can be anything. This review of antecedents, behaviors, and consequences is sometimes called "ABC Data" or an ABC observation. When reviewed closely, patterns often show what may be causing the behavior, and how it may or may not be reinforced as a consequence. Understanding this information can help when trying to change the behavior.

Functional Communication: The ability to communicate needs, desires, and wants through verbal and non-verbal means. This means that communication has a purpose and the way communication is used matches what is wanted or needed. For example, if a child wants a drink of water she says, signs, or shows a picture of a glass of water to her parent. She would not have a tantrum to express that need (where those around her would likely not know what she needed), or make an unrelated request, for example say "go for ride" when she really wanted a drink of water. Sometimes functional communication skills need to be taught as the child may not have that skill on their own. Not having functional communication skills often leads to behavior challenges as the child may not know how to express what is needed.

Functions of Behavior: There are reasons behaviors happen, and they fall into 4 areas: 1) Escape (from something unpleasant); 2) attention (from someone or a group); 3) Access to something the individual wants (such as a game, food, a toy, etc.); and 4) automatic (a sensory and individual), which occurs sometimes, but typically is one of the first 3 causes (or functions) of behavior. Sometimes there is more than one function causing a behavior. To find out the function, an FBA can be done.

Intervention: Approach being used to change a behavior.

Modeling (including Video Modeling): Teaching an individual to imitate a behavior performed by a model (or video model).

Negative Reinforcement (Increases a behavior): Taking something that is "negative" to the person away to INCREASE a behavior. Example 1: Child finishes his or her home work to STOP his mother's nagging about doing his homework, increasing the behavior of doing homework (and to avoid nagging) in the future. Example 2: child does not turn homework in on time, and gets an F; in the future the child turns in homework to AVOID getting an F. Behavior of turning in homework INCREASES.

Pervasive Behavior: Very repetitive behavior that is usually difficulty to change, and might affect the ability to learn or quality of life.

Positive Reinforcement (Increases a behavior): Adding something that is "positive" or desirable to the person in order to INCREASE a behavior.

Example 1: giving extra computer time to a child that completes his or her homework, and it increases the behavior of finishing homework. Example 2: mother makes chocolate chip cookies and kids go on and on about how delicious they are, and they are the best cookies ever. Mom decides to make chocolate chip cookies more often. Her behavior of making cookies has increased as it served as positive reinforcement for her.

Prompt: Way to assist or cue to help the individual complete a task. Different types of prompts include visual prompts, verbal prompts, physical prompts, gestural prompts, positional prompts, and more. Prompts are antecedents that get a response to occur.

Punishment (Decreases a behavior): This is a positive or negative action (or consequence) that causes a DECREASE in behavior and reduces the chance of it happening again or continuing.

Example 1: Child throws toy across the room and his mom takes his toy away. He never throws toys again. Taking the toy away was a punishment that decreased the behavior which serves as punishment. Example 2: a child raises his or her hand to answer a question, gets it wrong, and is extremely embarrassed. Her behavior of raising her hand decreases, so rising her hand in class has served as a punishment.

Registered Behavior Technician (RBT): A behavior support professional, working under the direction of a BCBA or BCBA-D, implements ABA based programming designed by the BCBA or BCBA-D. RBTs do not complete behavior assessments.

Reinforcer: Anything that can be used to motivate an individual to learn or display a certain behavior. Reinforcement is not bribery. Bribery is given before a behavior and reinforcement is given after, to maintain or increase a behavior.

Role Play: A teaching method to show a different point of view or perception of a behavior. For example, role playing interrupting a conversation to demonstrate what not to do.

Scripting: Repeat phrases heard such as from movies or television shows, commercials, etc. or a technique where model language is given to be used.

Shaping: Defining and overall target behavior/behavior goal. For each step toward the goal, reinforce success at each new level until the goal is reached.

Target Behavior: The behavior (of interest) that is trying to be increased or decreased (there may be one or more than one)

Task Analysis: Process of breaking down a skill into very small sections, or tasks. Skills are then taught one task at a time and usually build on each other in either a forward direction or a reverse direction. Each step is reinforced through shaping. This is often used when learning an overall skill which is too large or overwhelming for the individual. This happen often with individuals with developmental disabilities such as autism or intellectual

disability. An example might be a child learning to brush his teeth. He might first learn to walk to the sink, then get his toothbrush, then get his toothpaste, then put toothpaste on the toothbrush, then brush top teeth, then brush bottom teeth, then rinse the toothbrush, then put it in the holder, then wipe his face with a towel. This could be taught in the reverse order, building backwards. This can take time and each person will have different needs. The tasks can be broken down as small or large as needed for the person.

Token Systems (or Token Economy): A system that provides positive reinforcement for an individual by giving them tokens (usually represented by something of interest, for example, pictures of dogs for a child who loves dogs) for desired behavior. The agreed upon reinforcer can be exchanged for a defined number of tokens.