

# What Is Applied Behavior Analysis?

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## WHAT'S COVERED

This lesson will introduce applied behavior analysis (ABA) by defining and discussing the following:

1. What Is Behavior Analysis and Applied Behavior Analysis (ABA)?
2. Applications of ABA
3. EIBI Research
4. ABA Key Terms

## 1. What Is Behavior Analysis and Applied Behavior Analysis (ABA)?

To understand what applied behavior analysis is, you must first understand behavior analysis. **Behavior analysis** is the science of behavior based on principles of learning studied extensively by B.F. Skinner. There is often a lot of confusion about various terms used in treating individuals with autism spectrum disorder (ASD), so it is important to start by explaining exactly what ABA is.



### HINT

Some people think ABA is synonymous with discrete trial training (DTT), which is only one teaching procedure used in ABA, along with others such as natural environment teaching (NET) and pivotal response training (PRT). Other people think that verbal behavior – which some now call applied verbal behavior (AVB) – is separate from ABA, but again, it is part of ABA as it involves the application of Skinner's analysis of language.



### THINK ABOUT IT

If we understand how people learn behavior and what influences learning, what can we do?

We can help people to learn positive behaviors that will help them. We can also prevent people from learning behaviors that are harmful or problematic. Understanding behavior allows us to *change* behavior.

**Applied behavior analysis (ABA)** is the application of the “principles of behavior” to issues that are socially important, in order to produce practical change.

During this training, you'll learn about many principles of behavior such as reinforcement, generalization, and extinction, and how applying these principles can be used to effectively teach individuals with ASD.



## THINK ABOUT IT

What does this mean for those of us who work with individuals with ASD?

ABA works by changing behavior. Individuals can learn new skills, behave in more effective ways, and replace problematic behaviors with ones that are more successful.

The core principles of ABA are that the consequences that follow a behavior determine whether that behavior will increase or decrease.



## BIG IDEA

Desirable consequences will increase behavior, whereas undesirable consequences will decrease behavior.

ABA is the application of these principles to real-life issues in order to change behaviors and improve lives.

### Video Transcription

So we have talked about ABA and that the focus of ABA is to teach behaviors that have social significance or that are socially significant to the individual. What exactly does this mean? Socially significant means that we're picking behaviors that are going to be meaningful and important for that particular individual.

So we need to look at each person on an individual basis and try to figure out, for you, what are going to be the most important things for you to learn? And this is going to depend greatly on the individual strengths and weaknesses of each person, their age, the surrounding environment and the environment that they're living in on a daily basis. All the individual factors are going to help us determine what is socially significant for this particular individual.

And so somebody who is in an ABA program that is 2 years of age is most likely going to have skills that are different in terms of what's socially significant than somebody who is 22 years of age.

So an ABA program needs to identify what is going to be the most important for you and not just follow a typical learning progression that everybody goes through, but try to identify individual targets that are going to make that program socially significant and try to produce behavior change that's going to be meaningful and help that person actually succeed better in their individual circumstance.



## TERMS TO KNOW

### Behavior Analysis

The science of behavior based on the principles of learning and motivation studied extensively by psychologist B.F. Skinner

### Applied Behavior Analysis (ABA)

The application of the “principles of behavior” to issues that are socially important, in order to produce practical change

## 2. Applications of ABA

We have several ways to apply the principles of behavior to socially significant behaviors. The principles of ABA are applicable to many other socially important areas other than the treatment of ASD.

Some applications of the principles of applied behavior analysis include

- Regular Education: Used to improve on-task behavior in classrooms or to decrease disruptive behavior in classrooms
- Pediatric Medicine: Used to treat sleep problems in children, to treat children with ADHD, etc.
- Sports Psychology: Used to increase the performance of professional athletes, for example
- Business and Service Organizations: Used to train staff and to improve employee performance (Fischer et al., 2013)

Most relevant to this course, the principles of ABA can be applied to early intensive treatment for children with ASD. While we are introducing you to other applications to show you the broader range of contexts in which people use the principles of ABA, intensive treatment for children with ASD is the type of application of ABA that this training will focus on.

By using ABA as an intervention for ASD, we can address skill deficits. This is the Skill Repertoire Building component of our program.

Some skill deficits we can address include

- language
- play
- social skills
- cognitive skills
- executive functions
- motor skills
- adaptive skills
- academic skills

We can also use ABA to address behavior excesses. We work to decrease inappropriate behavior in the Behavior Management component of our program.

Some behavior excesses we can address include

- stereotypy
- problem behavior
- tantrums
- aggression
- noncompliance
- self-injury

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## 3. EIBI Research

Research has demonstrated that early intensive behavioral intervention (EIBI) produces many meaningful outcomes for children diagnosed with ASD. EIBI is a treatment directly based on the principles of applied

behavior analysis. Ivar Lovaas conducted a study in 1987 that used behavioral interventions for children under the age of four diagnosed with ASD. This study demonstrated that almost half of the participants (9 out of 19) who received early and intensive behavioral treatment (40 hours per week for at least two years) were successfully included in regular education programming with their peers by first grade as well as showed significant gains in their IQs (Lovaas, 1987).

EIBI and various other approaches, such as eclectic developmental programs, autism programming, and generic programming, have been compared with ABA showing significantly greater improvements in language, communication, and social interaction domains as well as larger increases in IQ and adaptive functioning (Cohen, et al, 2004; Eikeseth, et al., 2007; Zachor, et al., 2007; Howard, et al., 2014).

The greatest effects are achieved with early participants (under four years of age) and intensive treatment (between 25-30 and up to 40 hours per week) that is long term (two or more years) (Linstead, et al., 2017). Additionally, with EIBI these skills and knowledge gains are more likely to be maintained across time.

Research has also shown that both treatment duration (how long the individual receives EIBI) and intensity (how many hours per week the individual receives EIBI) have a significant effect on curricular domains, such as academic, adaptive, cognitive, executive function, language, motor, play, and social. This was found to be true across a variety of ages, meaning that not only young children diagnosed with ASD can benefit from EIBI. While greater treatment gains have been found with younger children, research has also shown that older children with ASD also significantly benefit from intensive ABA therapy.

It is important to note that ABA is evidence-based, meaning that there is sufficient evidence in the research to support its use. In applied behavior analysis, our interventions are research-based and use the basic principles of behavior analysis (such as reinforcement). We do not support treatments and interventions that do not have extensive research to demonstrate their effectiveness.

In 1968, Baer, Wolf, and Risley defined dimensions or core principles of applied behavior analysis. One of these dimensions, conceptually systematic, specifies that our interventions are derived from the basic principles of behavior from the literature. This means that they are research-based and evidence-based practices and not a “collection of tricks.”

"GET A CAB" is an acronym to help you remember the seven dimensions of applied behavior analysis.

- General: We see behavior change lasts over time, spreads to other behaviors, and occurs in different environments.
- Effective: We see changes in the behavior.
- Technological: We write out and describe all of the procedures used so others can replicate it.
- Applied: We address socially significant behaviors, like social skills, communication, and self-care.
- Conceptually systematic: We see interventions use the basic principles of behavior, like reinforcement.
- Analytic: We demonstrate functional relationships between the intervention and behavior.
- Behavioral: We address observable and measurable behaviors.



For more information on the seven dimensions of applied behavior analysis, you can access the article from Baer, Wolf, and Risley [here](#).

## 4. ABA Key Terms

ABA uses precise terminology that often sounds like a different language when you first hear it. Here are some of the key terms that you will use:

**Behavior** refers to anything a person says or does.

➞ EXAMPLE saying "Hi," or asking "What time is it?"

➞ EXAMPLE running, jumping, crying, or playing.

**Stimulus** (plural stimuli) is defined as any physical object or event that an individual can see, hear, smell, touch, or taste.

➞ EXAMPLE a ball, a cookie, or a loud noise

**Environment** refers to all of the observable and unobservable events and stimuli that affect the behavior of an individual.

➞ EXAMPLE An individual's environment may include any physical items present (people, toys, furniture), sensory stimulation (noise, temperature, lights), and feelings, thoughts, and motivation.

**Response** is a particular occurrence or instance of a behavior.

➞ EXAMPLE saying "Hello" when someone waves

➞ EXAMPLE sneezing because of pollen in the air

**Three-term contingency** is a method used within ABA to understand, predict, and change behavior. It consists of three primary components:

- **antecedent**, what happens immediately prior to the behavior
- **behavior**, what the person says or does
- **consequence**, what happens immediately after the behavior

### Video Transcription

So let's talk about the three-term contingency for a moment. In operant conditioning, we come to understand behavior by looking at what comes before it in the environment and what happens immediately following that behavior. So we look at the behavior and its interaction with things going on in the environment. And that gives us really important information regarding why that behavior is occurring.

So we break it down into three steps or three parts, basically. So we have A, which is the antecedent. And that really refers to anything that is happening immediately before the behavior occurs. Then we have the behavior itself, which is the behavior that we're interested in. And then we have the consequence. And the consequence represents anything that happens immediately following that behavior.

So we can come to understand and also better predict what behavior may do depending on the type of consequence that it encounters. So if I engage in a behavior and something good happens-- so I receive a positive consequence, so something that I find enjoyable or pleasant-- then chances are that behavior is going to increase in the future. So if something good happens, that behavior is likely going to increase in the future.

And the opposite is also true. So if I engage in a behavior and something bad happens-- so there's some type of negative consequence that I don't enjoy or that's maybe even a little punishing for me-- chances are what's going to happen to that behavior is it's going to decrease over time.



## TERMS TO KNOW

### Behavior

What a person says or does

### Stimulus (plural stimuli)

Any physical object or event that an individual can see, hear, smell, touch, or taste

### Environment

All of the observable and unobservable events and stimuli that affect the behavior of an individual

### Response

A particular occurrence or instance of a behavior

### Three-Term Contingency

A method used within ABA to understand, predict, and change behavior, consisting of three primary components: antecedent, behavior, and consequence

### Antecedent

What happens immediately prior to the behavior

### Consequence

What happens immediately after the behavior



## SUMMARY

Today's lesson provided an answer to the question, "**What is behavior analysis and applied behavior analysis (ABA)?**" You learned that behavior analysis is the science of behavior based on principles of learning studied extensively by B.F. Skinner, while applied behavior analysis is the application of the "principles of behavior" to issues that are socially important, in order to produce practical change. By understanding behavior, we can change behavior. You learned that there are many **applications of ABA** to a range of socially important areas, but in this course, we will focus on the application of ABA to early intensive treatment for children with ASD, to address skill deficits and behavior excesses. You also discovered **research on EIBI**, or early intensive behavioral interventions. Lastly, you learned about the precise terminology of applied behavior analysis by exploring the lexicon of **ABA key terms**.

**Antecedent**

What happens immediately prior to the behavior

**Applied Behavior Analysis (ABA)**

The application of the “principles of behavior” to issues that are socially important, in order to produce practical change

**Behavior**

What a person says or does

**Behavior Analysis**

The science of behavior based on the principles of learning and motivation studied extensively by psychologist B.F. Skinner

**Consequence**

What happens immediately after the behavior

**Environment**

All of the observable and unobservable events and stimuli which affect the behavior of an individual

**Response**

A particular occurrence or instance of a behavior

**Stimulus (plural Stimuli)**

Any physical object or event that an individual can see, hear, smell, touch, or taste

**Three-Term Contingency**

A method used within ABA to understand, predict, and change behavior, consisting of three primary components: antecedent, behavior, and consequence