Applied behavior analysis: Definition and case study

Audrey R. Williams

Department of Psychology, University of Mount Olive

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Abstract

Applied behavior analysis in its simplest form is a technique psychologists use to fix a problemed behavior to improve the life and well-being of patients. Applied behavior analysis, or ABA in short, can be used for any age or gender, the earlier the patient starts the better the outcome. To use ABA, you must find the target behavior that needs to be changed, form a plan to help patients unlearn their behavior, and monitor behavior during and after treatment to see if there are improvements or if there need to be any changes to the plan. We can use ABA in not just a clinical environment, but in everyday life as well. The example shown in this paper is a case study done by students at the University of Mount Olive to see if they could overcome a target behavior of their chosen by applying ABA to their plan.

Applied behavior analysis: Definition and case study

Applied behavior analysis is a branch of behavioral science that's key aim is to help patients with a problemed behavior apply treatment to their everyday life (Cooper et al, 2019). It uses reinforcements (negative and positive) to create new conditioned behaviors to counteract the problemed behaviors. Although B.F Skinner made different behaviors (respondent and operant) more widely known, it was not until Paul R. Fuller who made the first study that is considered to use applied behavior analysis, or ABA for short (Cooper et al. 2019). To perform an applied behavior analysis, you must do the following: define and select a target behavior, create a treatment plan, and finally evaluate and analyze the behavioral change.

A problemed behavior, also known as target behavior, is a behavior that is negatively affecting a person's life (Cooper et al, 2019). To ensure you are selecting and defining the target behavior correctly you must assess the patient beforehand. These assessments can be interviewing the patient, giving out a standardized test, or performing a direct observation of the patient. After using the assessment of the psychologists chosen, they will be able to create a more definitive target behavior definition along with knowing what causes these behaviors to occur.

While observing the patient's treatment plan, you must be able to measure the target behavior to see if there are any improvements of the behavior or if the treatment plan is working with the patient. The most common measurements psychologists use is time latency and interresponse time. Time latency is the measurement of time between the behavior and what causes the behavior (AKA stimulus) while interresponse time is the measurement of the time between two instances behavior (Cooper et al, 2019). In simpler terms, time latency is how long it takes for the patient to act on a certain behavior when the stimulus is near while interresponse time is how long it takes for the patient to act on the behavior once more. You can measure the time latency or interresponse time, or IRT for short, in different ways (Cooper et al, 2019). These

ways include using a stopwatch, recording the observation, or holding an interview of the patient.

After forming a treatment plan for the target behavior change, the psychologist must be able to evaluate and analyze the behavior change. Measuring the behavior change is similar to measuring the target behavior, as you can use time latency and IRT to measure the behavior. Analyzing the behavior is similar to measuring the behavior change, the only difference is that you are just putting the data in a structured context (Cooper et al, 2019). These contents include graphs, and

statistical software's.

Some patients have similar treatment plans that are set into action but in the end, every patient is different. Each patient has lived different lives and has different experiences. Although they are different, they still need the same support. If they have the right support, such as the right treatment plans, a good support system, and the motivation to change. If the patient does not have the motivation to change, they will more likely not be able to change their target behavior and continue to act on the behavior.

One way to keep their motivation high is called token economy. It is a positive reinforcement method that allows the patient to gain a reward after completing a certain task in their treatment plan (Sheilds, 2024). These rewards could range from stickers, food, extra phone usage, and/or extra leisure time. Another way the patient can maintain motivation or find support is depending on their target behavior they could possibly find a support group. Finding a support group can help these individuals find more help and different ways to help them with their target behavior, along with seeing they are not alone in this, and it does get better.

A person can use ABA even without professional supervision. A person can do it all by themselves. It is easy to find a target behavior, but to continue with the plan you've made and stay motivated is the most difficult. We have seen this in class, where some individuals completed their goal while others have not. It is clear target behaviors that are more emotional related or causing a person more distress are the behaviors that are the most difficult to change.

We decided to test this out throughout the semester. We were asked to define a target behavior, form a plan for the target behavior and collect baseline data. Many students were successful in their behavioral plans, and I was one of them.

The target behavior I decided to change is my consumption of carbonated drinks, such as soda. This behavior is defined by consuming carbonated beverages. Sodas such as Dr. Pepper, Starry, and Pepsi are the main sodas people consume on a day-to-day basis, with Dr. Pepper being my favorite out of all of them. This behavior is an excess, as I drink sodas nearly every day, sometimes 2-3 times a day due to how widely available they are to me. I will collect baseline data via research of the pros and cons of drinking sodas, as well as collecting data of myself on my soda consumption. I will do this by writing down every time I drink soda to see where I drink it most and why I usually drink these sodas.

There are many pros and cons to drinking sodas, but for myself there are more cons than pros, especially for long term health. The cons of changing the behavior is not consuming the caffeine levels as often so I will feel drowsy and may have caffeine withdraws, along with not having the satisfaction of drinking sodas that I grew accustomed to drinking every day. Although there are cons, there are also pros of changing the behavior. The pros of changing this target behavior are being able to sleep more due to not consuming as much caffeine late at night, having lower sugar levels, and slowing down tooth enamel decay. We can see that the long-term

effects of drinking soda everyday do more harm than good, while the effects of the soda are generally short-term.

At the beginning of the project, I believed I had a 50/50 chance of being successful in changing my target behavior. I believed this because as stated above I have drunk soda my entire life and they are widely available to me. I have tried to fix problems like these in the past and were unsuccessful, so I did not know if this would be the same as well. I collected baseline data by writing down what times I drunk soda and how much I consumed. I wrote my data down in a small notepad and if I did not have it on me, I typed in the time and how much consumed in my note's app on my phone. After the baseline data was collected, I analyzed both weeks' information and found out that I had started to drink less soda.

For both baseline weeks, it is clear that I drink soda mostly at work, but by the end of baseline week 2 I was also drinking it at home. During baseline week 1, I was stressed and had more of an urge to drink soda due to me liking the flavor and not particularly caring about if I reached my goals of drinking soda. Throughout baseline week 2 however, my mind was clearer, and I was back on reaching my goal of drinking less soda. Even if I didn't drink soda, I started to drink sweat tea, which is less carbonated but still has a lot of sugar in it. It can still affect my teeth and enamel health but not as badly as soda. It also shows that when I am not on my school schedule and able to focus more on my ABA plan, I will drink less soda, but if I am on my school schedule I am more likely to drink soda. This could possibly be due to not getting enough rest and trying to get enough energy to last throughout the day. In the first week, I consumed approximately 168 oz of soda, while the second week I only consumed approximately 45 oz.

Many of the antecedents throughout the baseline weeks shown that when I was not feeling well emotionally or tired, I would drink soda without caring about reaching my goal. This would lead

to negative reinforcement as my consequence. A positive note was when I did not feel well physically, I decided to drink more water and continued to reach my goal even if I was not doing so intentionally, showing positive reinforcement.

To keep me motivated I decided to enact the token economy method of using my reinforcement. I decided to make three phrases in my plan, each last a week. The first phase was to drink 3-4 cups/bottles of soda, the second phase was to drink 2-3 cups/bottles of soda, and finally the third phase of drinking 1-2 cups/bottles of soda per week. If I was able to finish each of these phases, I would treat myself to a sweet treat or a nice dinner with soda if I'd like to drink one. If I did not follow through with these goals, I would not be able to get a sweet treat or nice dinner with soda. I would also not be able to drink any soda next week.

The reinforcers were successful, and I even started to drink 1 cup of soda on the days I worked doubles, which were usually on Saturdays and/or Sundays. The behavior that replaced it was drinking something other than soda. These became sweet tea at work and going out to eat, while I drunk more water and/or coffee while I'm out running errands or also going out to eat. Even if some of these are not the healthiest, such as sweet tea and coffee, they are still better than soda since they are not as carbonated, and I still get the caffeine I need to continue on with my day. As I finished with my final phase, I was successful in drinking less soda and I will continue to drink less soda. This is due to me not having the need or want to drink soda as much as before and wanting to continue on bettering my health.

My ability to enact behavior change depends on what behavior I would like to change. If it is something like drinking less soda, then I am more likely to achieve it. Unfortunately, if it is something bigger such as fixing my sleep schedule or quitting vaping then I am less likely to achieve the goal. I was successful in my goal of drinking less soda because I wrote down step by

step what I needed to do, analyzed when and where I drank soda the most and was able to tweak these issues. I also was highly motivated to fix this, as it was something I had been thinking of doing for a while now, I was just not motivated to put it into action on my own. Anyone and everyone are able to change, whether that be a personality change, a bad habit, or just something they want to improve. The biggest thing is if the person is motivated to change it, they may be able to see they have a problem, but if they are not motivated or ready to change this behavior then they will not be able to.

An old saying that many people know and live by is one I stand about when it comes to any sort of change: you cannot change someone if they do not want to change it themselves. And that involves you.

References

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