Functions of Behavior: The Early Intervention of Applied Behavior Analysis

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Overview of *ANALYSIS* in Applied Behavior Analysis

Analysis requires that data is collected on the occurrence of something and that the data is *analyzed* in order to tell the observer what is happening over time - what patterns are occurring.

Applied Behavior Analysis (ABA)

- A-B-C Paradigm
  - The three-term contingency: All applied behavior analysis procedures involve manipulation of one or more components of this three-term contingency.

A -	B -	C
Antecedent	Behavior	Consequence
The antecedent is the specific [stimulus] condition under which the behavior occurred. What happened BEFORE the behavior	The behavior that occurs in response to the antecedent. What is the behavior: Description & Definition of the behavior	The response that follows a behavior and affects the likelihood that it will occur again in the future. What happened AFTER the behavior: Consequences can increase behavior **(reinforcement)** or decrease behavior [3] **(punishment)**.

APPLIED BEHAVIOR ANALYSIS (ABA)

- The ABC Paradigm is a system of analyzing the cause and effect of behavior by recording the Antecedent, Behavior, and Consequence of each occurrence.

- Examples:
  1) A- "What is her name?"; B- "Joanne."; C- "Thanks."

  2) A- [Loud noise]; B- [child screams]; C- "Be quiet!"

  3) A- "Time to clean up your toys."; B- "NO!!" [throws toy]; C- [adult ignores child and walks away]

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APPLIED BEHAVIOR ANALYSIS (ABA)

- A-B-C Paradigm also incorporates analyzing and determining the *setting event* in which a behavior occurs.
  - A setting event is the environment (i.e. bus, playground, bathroom), ecological event (i.e. lack of sleep, medication), or activity (i.e. math time, playing with Legos) that sets up an antecedent to trigger the occurrence of a behavior.
  - Without the Setting Event – a certain Antecedent does not trigger a target behavior.
  - The same antecedent can trigger a different behavior in a different setting event
- Almost EVERY person that you use ABA intervention strategies with, you will use and take SE-A-B-C data to analyze behavior

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APPLIED BEHAVIOR ANALYSIS (ABA)

- SE-A-(p)-B-C Paradigm also incorporates identifying the *precursor behavior(s)* when analyzing the functions of a target behavior.
  - Precursors are behaviors that the individual engages in before the target behavior that indicate the target behavior is about to occur.
  - It may still be "inappropriate" but initially is NOT the target behavior.
    - Example: Student is working on worksheet and he starts making smacking noises (precursor) that are gradually getting louder and then all of a sudden he tears up the paper and throws it and the pencil on the ground (target behavior).
    - Precursors do not *always* occur but do frequently occur.

Applied Behavior Analysis

- BEING PROACTIVE and PREVENTATIVE
  - Prevention of inappropriate behaviors and
  - Proactively teaching new behaviors and changing factors before the behavior occurs in order to set the individual up for success
    - We make changes to the setting event (overall context) and to the antecedent (the instruction or trigger) so that the child
      - 1. is able to correctly learn new behaviors,
      - 2. is motivated to learn new behaviors and
      - 3. will behave appropriately

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Functions of Behavior

Identifying the function of a behavior is the "early intervention" of applied behavior analysis.

It is the heavy duty work that you do up front so that later you and the child reap the benefits of that work - enabling the child and family to have a more meaningful and socially beneficial life.

Functions of Behavior

- Understanding the function of behaviors helps us to decrease the target (problem) behavior and increase the appropriate behaviors.
- Understanding the function of the target behavior helps us to prevent the behavior from occurring.
- Understanding the function of the target behavior enables us to teach our kids better ways to have their needs met and ensure consistency across all environments.

Functions of Behavior

- Determining the function of the behavior
  - The process of gathering information (collecting data) to determine the connections and patterns and relationship between variables SE-A-(p)-B-C. This is the *functional relationship.*
- A *functional relationship* exists when a cause and effect relationship between variables has been experimentally established (functional behavior assessment (FBA) or functional analysis (FA))
- The *functional relationship* answers the question "Why is the behavior occurring?" aka "What is the function of the behavior?"
  - Trying to find what circumstances or contingencies maintain the behavior

Basic Functions Data Collection

| Date/ Initials	Setting Event	Ante- cedentt	Precursor	Target Behavior	Conse- quence	Comments

Big Picture : Process

Functional Behavior Assessment (FBA) or Functional Analysis (FA)

1. We define the behavior explicitly
2. We observe (take data) the child in his or her environment, describe what is going on before and after the target behavior occurs: SE-A-(p)-B-C.
3. We interview others.
4. We experiment with the conditions in which the behavior occurs.
5. We analyze the data (looking for patterns and graphing).
6. We identify the function of the behavior.

Behavior Intervention Plan (BIP)

7. We determine the consequence (punisher) that will decrease the target behavior when it occurs.
8. We teach a replacement behavior that meets the same need as the problem behavior
9. We determine the consequence (reinforcer)that will increase the occurrence of appropriate behavior.

https://www.youtube.com/watch?v=Qaz5kcS2oD4
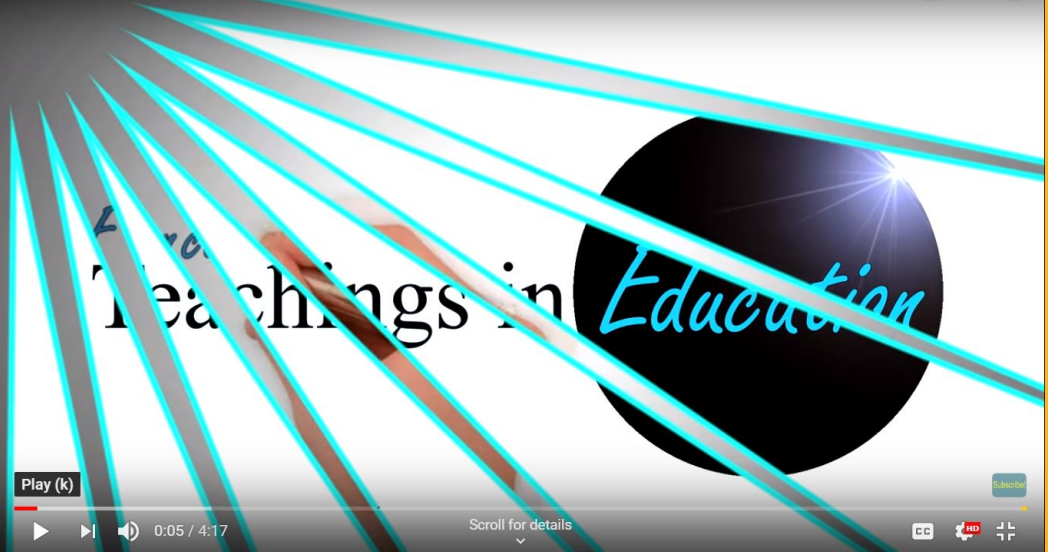
Primary Functions of Behavior

- **Escape/Avoidance:**
  - From person, task, environment, etc.
  - Behavior usually occurs in response to specific person, event or requests to perform activity.

- **Tangible:**
  - Desire for a specific item or activity
  - Behavior often occurs when something has been denied or taken away -- it is not person or event specific

Primary Functions of Behavior

- **Attention (positive or negative):**
  - Desire for attention from peers, adults, can include gaining "power" or "control"
  - Behaviors usually occurs when [specific] individuals are present -- may be all the time if the desire is for attention from peers -- it is person specific -- not event or location.

- **Sensory (aka automatic reinforcement or self-stimulatory - stim):**
  - Engaging in the specific behavior feels good or meets a sensory need.
  - Behaviors occur anytime, anywhere--not person, event or location specific but may occur more often when under stress

Functions: Analysis Process

1. What is the target behavior (topographical description: *details* of what it looks like and what happens?
2. What are the setting events (i.e., conditions/context that set up the probability of the target behavior occurring?
3. What are the antecedents and precursors of the target behavior (i.e., specific events that immediately precede a behavior)?
4. What are the consequences for the target behavior, which may be reinforcing (increase/maintain) it?
5. What are the consequences for the target behavior which may be punishing (decrease) it?
6. Experiment with the situation to determine exact cause

THEREFORE

7. What/who does the child gain?
8. What/who does the child avoid?

Functions of Behavior

- Behaviors may result from a combination of functions
- Escape and sensory are often related to circumstances that are stressful or boring
- Attention and escape may result from difficult or boring demands and not much attention given for a long time
- Tangible in combination with any of the others may be a result of boredom.
- Combinations of 2 or more functions require a careful look at curricular requirements, basic classroom management, and availability of noncontingent reinforcement.
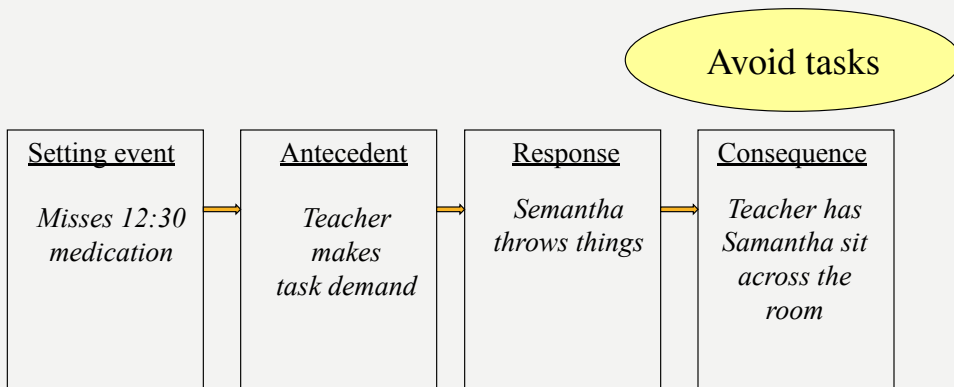

https://www.youtube.com/watch?v=PZMjI4gXbmI

When Samantha misses her 12:30 medication & her teacher asks her to complete a typical and easy task of cleaning up the lunch table, she starts throwing things. Her teacher tells her to go sit across the room to calm down.

Avoid tasks

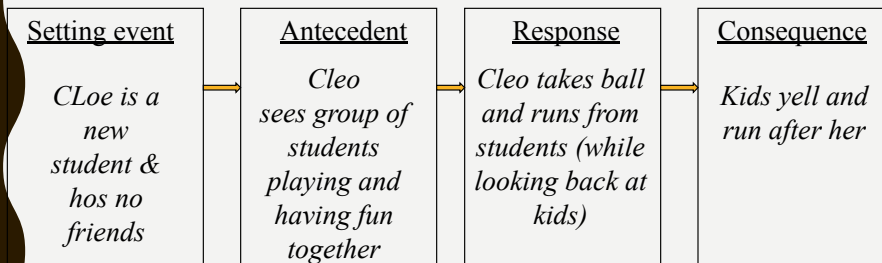| Setting event	Antecedent	Response	Consequence
Misses 12:30 medication	*Teacher makes task demand*	*Semantha throws things*	*Teacher has Samantha sit across the room*

Caesar uses a wheelchair and is teased by some boys during recess. When he goes back to the class, his friend looks at him and smiles. Caesar immediately yells "what are you smiling about?" His teacher immediately sends out of the class to calm down.

Escape peer attention

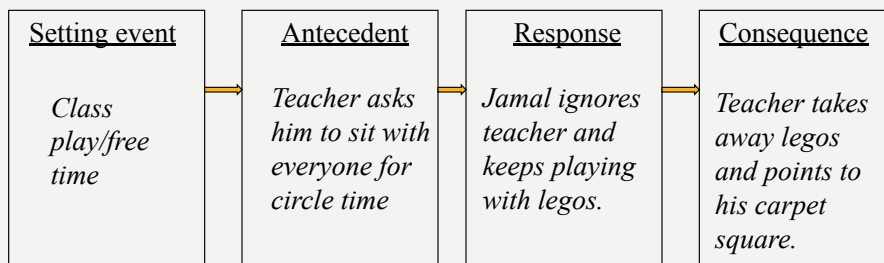| Setting event	Antecedent	Response	Consequence
Caesar is teased about his disability before class	*A friend smiles at him when he enters class*	*Caesar yells at his friend and asks what she's smiling at*	*His teacher asks him to leave the class to calm down*
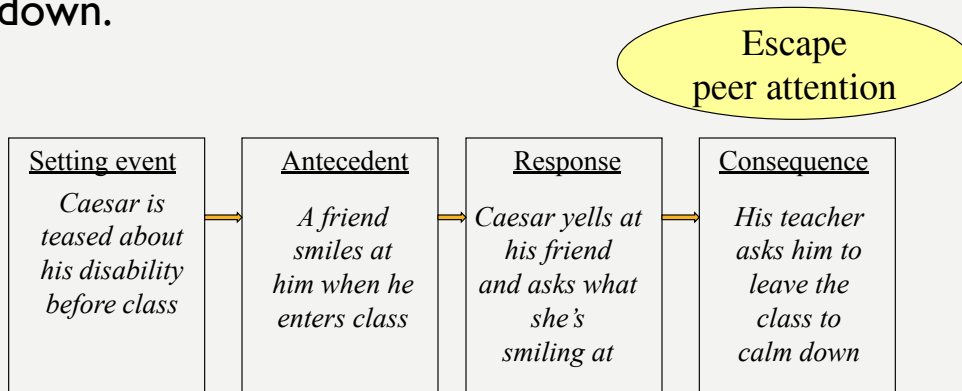
Cleo is new to the school, & she is having a hard time making friends. One recess, she decides to take the ball and run away (while looking back at them) from a group of students who were playing a game. The kids start yelling at her and running after her.

Gain peer attention

Setting event	Antecedent	Response	Consequence
CLoe is a new student & hos no friends	*Cleo sees group of students playing and having fun together*	*Cleo takes ball and runs from students (while looking back at kids)*	*Kids yell and run after her*

When his teacher asks him come sit with everyone at circle time, Jamal ignores her and continues playing with the legos. The teacher walks over and takes legos away from Jamal and points to his carpet square. He tries to grab the legos back.

Access to tangible/item

Setting event	Antecedent	Response	Consequence
Class play/free time	*Teacher asks him to sit with everyone for circle time*	*Jamal ignores teacher and keeps playing with legos.*	*Teacher takes away legos and points to his carpet square.*

Identify "Functionally Equivalent" Appropriate Behavior

- All behaviour serves a function

- The form is problematic NOT the function
  - Example?

- Functionally equivalent: an alternative appropriate behaviour that accesses the same reinforcer as the target behaviour

- Also called replacement behaviour

Identifying Replacement Behaviour

Replacement behaviour should involve speech or some other appropriate communication type (AAC or ASL) - Functional Communication Training (FCT)

Functional communication phrase/word and means of communicating needs to meet 4 requirements:
- Student is capable of doing it
- Can be taught easily
- Will be noticed when student does it
- Works quickly and effectively for student

Quiz

A girl runs up to a peer while playing at the park and hits him. He look at her and she smiles at him.

What is the function of this behavior?
A. Escape
B. Attention
C. Tangible

Is it functionally equivalent?

The child practices standing close by, then tapping a peer on the arm to get attention.
Is this means of communicating functionally equivalent?

A. YES
B. NO

Quiz

The child pulls the hair of the teacher or parent whenever he is told to put Thomas the Tank Engine away or share it.

What is the function of the behaviour?
A. Tangible
B. Automatic
C. Escape

Is it functionally equivalent?

The child is provided other materials to pull on, such as rubber bands, doll's hair or strings on a sweater.
Is this intervention functionally equivalent?

A. YES
B. NO

Quiz

A child throws items, hits others and drops to the ground when he is told to go to his desk.

What is the function of this behavior?

A. Tangible
B. Escape
C. Automatic

Is it functionally equivalent?

The child is taken for a walk to calm down each time he engages in these behaviours.
Is this intervention functionally equivalent?

A. YES
B. NO

Quiz

A child scratches her mother when her mother is talking on the phone.

What is the function of this behavior?

A. Automatic
B. Escape
C. Attention

Is it functionally equivalent?

The child is taught to use a picture card (that shows the two of them hugging) to quietly show her mom when she mom is on the phone.

Is this means of communication functionally equivalent?

A. YES
B. NO

Quiz

A child frequently bites the back of his hand when he is playing alone.

What is the function of the behavior?
A.   Automatic
B.   Escape
C.   Attention

Is it functionally equivalent?

The student is taught to chew on a rubber circle that hangs on a necklace around his neck.

Is this intervention functionally equivalent?

A.   Yes
B.   No

Conclusions

- Determining, understanding and analyzing the function of problem behaviors is the basis and foundation of research and evidence-based behavior interventions methods.
- It is not a simple process and it is important to include a behavior analyst as a part of the team working with the child.